

Taxis, Taxis and Governance in the Vehicle-For-Hire Industry

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Introduction

A regulation, in its broadest sense, is a rule of behavior that establishes order. The vehicle-for-hire industry is governed by a vast, complex, polycentric set of regulations. We make sense of these overlapping and intertwined mechanisms by highlighting two dimensions of governance:

1. The public/private dimension, which describes the degree to which regulations are backed by the threat of force.
2. The *cosmos/taxis* dimension, which describes the degree to which regulations are an emergent (*cosmos*) order or a created (*taxis*) order.

This allows us to create a taxonomy of four primary “types” of regulation (public-taxis, public-cosmos, private-taxis, private-cosmos) and evaluate each in turn.

Public-*taxis* regulations—coherent, deliberately designed, state-enforced rules—are exceedingly rare. Most state-enforced rules are emergent phenomenon. That is, public-*cosmos* regulations are far more common. This explains why public regulation of the taxi industry has so often failed to achieve its stated ends. Public-*taxis* regulations, however, would have failed in a similar vein because they would be unable to account for and accommodate changes in technology, competition, and consumer preferences.

Private regulations—both the *taxis* and *cosmos* variety—serve the general public better than public regulations. In section I, we introduce the concept of polycentric governance as a tool for understanding the vehicle-for-hire industry. In section II, we explore distinctions between public and private regulation and in section III we examine the distinction between *cosmos* and *taxis* regulation. In section IV, we map out these four dimensions in the context of economic regulation and examine each in detail. In section V we summarize our argument and assert that private governance is optimal in regulating the vehicle-for-hire industry.

1. Polycentric Governance

What governs the vehicle-for-hire industry?¹ Federal and state labor laws govern the relationship between a taxi company and its employees as well as that between a transportation network firm and its contractors. State and federal tax law governs the flow of capital into the industry as well as the degree of economic surplus generated by the industry. Common law governs the allocation of liability for harm, with some limitations created by state legislatures. And regulations—codified in statutes, promulgated by regulators, and enforced by agencies such as state DMVs, public utility regulators, and taxi commissions—govern entry, price, and business practices.

¹ We focus primarily on U.S. governance mechanisms as that is the jurisdiction with which we are the most familiar.

Government-created regulation, however, are not the only source of governance. As the late political economist, Vincent Ostrom put it:

We need not think of “government” or “governance” as something provided by states alone. Families, voluntary associations, villages, and other forms of human association all involve some form of self-government. Rather than looking only to states, we need to give much more attention to building the kinds of basic institutional structures that enable people to find ways of relating constructively to one another and of resolving problems in their daily lives.²

Under this view of governance, the vehicle-for-hire industry is not exclusively governed by the rules of legislatures and regulators, but also by the rules of etiquette, the rules of economics, and the rules of private regulatory entities. It is governed, for example, by the cultural norm of tipping. It is governed by social media users who instantly and widely spread stories of good or bad service. It is governed by the terms and conditions each platform--ridesharing and taxis—alike, places on their services.

Public laws may govern the tax rates, but economic laws determine the actual allocation of tax cost among employers, employees, and customers.³ Statutes and regulatory pronouncements may dictate maximum prices, but the laws of economics dictate when surpluses and shortages will arise. The market is also governed by customer reviews on Yelp and Google, as well as review curators such as the Better Business Bureau and Angie’s List.⁴ It is governed by insurance companies that reward safe drivers with lower premiums and by the voluntary practices of bond-posting and brand-maintenance. It is governed by the algorithms developed by programmers at Uber, Lyft, Via, and Gett and by the reviews of customers who use those apps.

In short, the industry is governed by a polycentric order. Michael Polanyi developed the concept of polycentricity, describing the organization of scientific inquiry, as “the mutual adjustment of a large number of centres” in a complex system.⁵ Vincent Ostrom, Charles Tiebout, and Robert Warren—in their study of metropolitan governance—extended the notion of polycentrism to political economy.⁶ Three decades later, Ostrom summarized their definition of a polycentric order, stressing three characteristics. A polycentric order, he wrote, is a system composed of:

² Vincent Ostrom quoted in Paul Dragos Aligica & Peter J. Boettke, *CHALLENGING INSTITUTIONAL ANALYSIS AND DEVELOPMENT: THE BLOOMINGTON SCHOOL* 146 (London: Routledge, 2009).

³ Public finance theory teaches us that the less-elastic side of a market bears the bulk of the tax. Since labor supply is generally less-elastic than labor demand, employees are thought to bear most of the burden of an income or payroll tax.

⁴ Founded in 1912, the Better Business Bureau (BBB) is a private, nonprofit organization with over 100 local affiliated organizations in the US and Canada. BBB accredited businesses are vetted by the organization and must adhere to the BBB’s code of business practices in order to remain in good standing. Founded in 1995, Angie’s List allows users to read and publish reviews of local businesses.

⁵ Michael Polanyi, *THE LOGIC OF LIBERTY* 140 (Indianapolis: Liberty Fund, 1951).

⁶ Vincent Ostrom, Charles M. Tiebout, and Robert Warren, *The Organization of Government in Metropolitan Areas: A Theoretical Inquiry*, *THE AMERICAN POLITICAL SCIENCE REVIEW* 55, no. 4, 831-42 (Dec. 1, 1961).

(1) many autonomous units formally independent of one another, (2) choosing to act in ways that take account of others, (3) through processes of cooperation, competition, conflict, and conflict resolution.⁷

The tools of systems theory help illustrate this notion.⁸ Consider Figure 1, where *A* represents a vehicle-for-hire market at a particular point in time and *B* represents a changed state in that market. This change can represent, for example, a new configuration of prices, quantities, operators, service models, or technologies.

Various lines—dashed indicate that they are voluntary routes and solid indicate that they are mandated—connect *A* to *B*. Each node represents an autonomous governance mechanism and each route represents a path of influence. In Ostrom’s words, the connections can be thought of as processes of “cooperation, competition, conflict, and conflict resolution.”

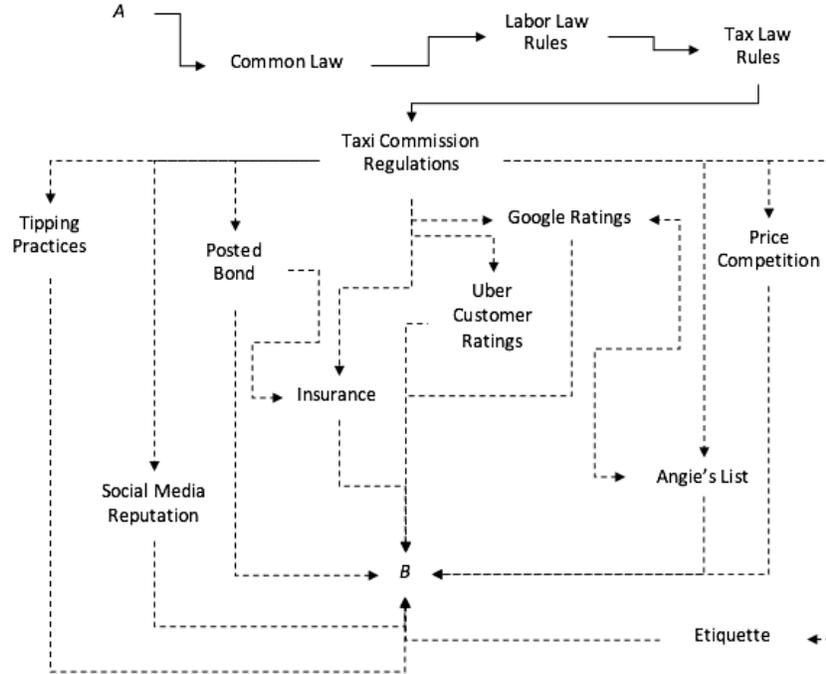
This figure is, of course, a gross simplification. In reality, this polycentric system is far more complex than the web of interactions shown in Figure 1. Each individual platform user, for example, could be represented as a distinct node, connected to other users as well as to other nodes in the figure. There could also be many more connections between the nodes shown. Note, for example, that we have drawn a line connecting posted bonds to insurance. A firm that posts a larger bond may be judged a safer bet and therefore may be able to pay lower insurance premiums. We have also drawn a line connecting Angie’s List to Google Ratings, with arrows on both ends of the line. These two platforms are in dynamic competition with one another so that improvements to one will likely lead to improvements in the other. In a vast and complex system such as this, the number of possible connections and permutations is astoundingly large.⁹

⁷ Vincent Ostrom, *Polycentricity: The Structural Basis of Self-Governing Systems*, in *THE MEANING OF AMERICAN FEDERALISM* 223-44 (San Francisco, Calif: ICS Press, 1991).

⁸ Kenneth E. Boulding, *GENERAL SYSTEMS THEORY-THE SKELETON OF SCIENCE*, *MANAGEMENT SCIENCE* 2, no. 3, 197-208 (1956).

⁹ In a system with n nodes, the number of possible connections between nodes is $c = \frac{n(n-1)}{2}$.

Figure 1: Polycentric Governance of the Vehicle-for-Hire Industry



Source: Created by authors.

2. The Public-Private Dimension

We are accustomed to think of rules as a “top-down” phenomenon, and the way we talk about rules reinforces this conception. We say that rulers “rule,” that rules come from “on high,” and that we may find these rules in the “rule books.” We tend to think of rules as formal pronouncements, emanating from officials with some authority to compel us to comply.

Many rules fit this description. In July of 2009, for example, then-chairman Leon Swain Jr. of the DC Taxi Commission (DCTC) issued a memorandum that created a moratorium on new independent taxicab licenses.¹⁰ The initial order lasted 120 days but it was later extended “until further notice.” Note two important features of this order. First, it was mandatory. There was no way to “exit” the order or to escape its effect, except by leaving the District of Columbia. Second, the order was enforced by the threat of force. The DCTC (now the Department of For-Hire Vehicles) is able to issue fines, suspend or revoke licenses, and impound vehicles in order to compel compliance.

¹⁰ *The H-Tag Report: Final Report of the Panel on Industry: Findings and Recommendations on DCTC Policy on the Issuance of New Vehicle Licenses for Taxicabs*, GOVERNMENT OF THE DISTRICT OF COLUMBIA TAXICAB COMMISSION (Aug. 28, 2015).

The inability to exit and the implicit threat of force mark the moratorium as a “public” rule. But as we have already noted, the current vehicle-for-hire industry is *also* governed by various private mechanisms, including the most powerful private form of governance: competition.

These private forms of governance serve many of the same functions as formal, public regulations. They aim to ensure quality, to limit fraud, to yield lower prices, to ensure the performance of promises, and to correct for market failures. The simple dichotomy between “public” and “private” obscures the rich diversity of institutional arrangements. As Elinor Ostrom noted it in her Nobel prize lecture:

The classic assumptions about rational individuals facing a dichotomy of organizational forms and of goods hide the potentially productive efforts of individuals and groups to organize and solve social dilemmas such as the overharvesting of common-pool resources and the under provision of local public goods.¹¹

Put differently, some forms of private governance can have the look and feel of public governance, such as local homeowner associations. It is true that one may exit the HOA by selling one’s home. It is also true that the governance mechanism is voluntary in the sense that the agreement was freely entered into. But for many, the local HOA is a government-like authority.

Turning to the other end of the spectrum—the public sphere—some have argued that at least in the long run, governments have *some* voluntary features. In his Nobel prize lecture, for example, James Buchanan asserted that “individuals acquiesce in the coercion of the state, of politics, only if the ultimate constitutional ‘exchange’ furthers their interests.”¹²

Ultimately, the dichotomy between public and private rules may obscure some nuance. If public governance is characterized by the inability to exit and by the threat of coercive sanctions, then we might think of publicness as a matter of degree with higher exit costs and larger sanctions characterizing a more public regime. By this standard, the federal government—which is hard to escape—is more public than an HOA or department of for-hire vehicles. And an agency with the power to impound your vehicle is more public than one empowered to only deny the ability to operate as a cabbie.

3. The *Cosmos-Taxis* Dimension

Drawing on the Greek word for “made” or “planned” order, F.A. Hayek referred to deliberately designed orders as “*taxis*” orders.¹³ He contrasted *taxis* orders with what the Greeks called “*kosmos*” orders. Rather than being “made,” a *kosmos* order “grows” or “emerges” from human actions. As Adam Ferguson asserted,

¹¹ Elinor Ostrom, *Beyond Markets and States: Polycentric Governance of Complex Economic Systems*, THE AMERICAN ECONOMIC REVIEW 100, no. 3, 641-72 (June 2010).

¹² James M. Buchanan, *The Constitution of Economic Policy*, THE AMERICAN ECONOMIC REVIEW 77, no. 3, 243-50 (June 1987).

¹³ *Taxis* is pronounced tax-iss. To avoid confusion with the plural form of taxi, we will italicize *taxis* when we are referring to planned or made order. F. A. Hayek, LAW, LEGISLATION AND LIBERTY, VOLUME 1: RULES AND ORDER, Chapter 2 (Chicago, IL: University of Chicago Press, 1978C).

societies occasionally “stumble upon establishments, which are indeed the result of human action, but not the execution of any human design.”¹⁴

Taking up this theme, Adam Smith explained that he who “intends only his own gain...is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention.”¹⁵ This notion of emergent order has been the theme of a great deal of social science. Economists, in particular, often describe the market process as an emergent order.

Both *taxis* and *cosmos* orders exist within the vehicle-for-hire industry. Chanoch Shreiber called attention to several problems with the industry, arguing that certain unique features of this market make regulation—public-*taxis* regulation, in his opinion—necessary.¹⁶ Because drivers will “cruise” for riders, he argued that little price or quality competition exist in an unregulated industry. Riders, stuck with whatever cab happened to be nearest, could not evaluate the quality or safety of the driver and vehicle until it was too late. Drivers, moreover, were typically in possession of superior knowledge of routes, enabling them to take advantage of this information asymmetry and causing some skeptical customers to avoid cabs altogether.¹⁷

Though Shreiber’s aim was to justify public regulation to address these problems, private entrepreneurs have profited handsomely by developing cleverly-designed solutions to many of the problems identified by Shreiber.¹⁸ Indeed, this is exactly what one would expect. For whenever a market is imperfect, entrepreneurs can profit by correcting or improving on it.¹⁹ Today, cruising no longer limits the degree of competition in the industry because apps such as Uber and Lyft ensure that drivers are in fierce competition with one another for positive ratings from riders. The companies stop working with drivers whose scores are deemed too low and have developed various mechanisms to reward good drivers. GPS technology has balanced the information asymmetry so that riders can be sure that drivers are following the best routes. Digital records and digital payment systems discourage fraud and theft. These companies have also created ratings systems that allow drivers to rate passengers, encouraging riders to be on their best behavior.

Beyond these *taxis* orders, the industry is also governed by a set of *cosmos* orders. Etiquette and certain cultural norms, for example, set boundaries on acceptable behavior and create a set of shared understandings that dictate appropriate behavior (it is polite for drivers and customers to exchange pleasantries; it is impolite to probe into one another’s personal lives). One of these cultural rules—the

¹⁴ Adam Ferguson, *An Essay on the History of Civil Society*, 205 (London: T. Cadell, 5th ed. 1782).

¹⁵ Adam Smith, *The Theory of Moral Sentiments*, Part IV, Chapter 5 (Maison Editora, 1759).

¹⁶ Chanoch Shreiber, *The Economic Reasons for Price and Entry Regulation of Taxicabs*, JOURNAL OF TRANSPORT ECONOMICS AND POLICY 9, no. 3, 268-79 (1975).

¹⁷ George A. Akerlof, *The Market for “Lemons”: Quality Uncertainty and the Market Mechanism*, QUARTERLY JOURNAL OF ECONOMICS 84, no. 3, 488-500 (Aug. 1970).

¹⁸ Adam Thierer et al., *How the Internet, the Sharing Economy & Reputation Feedback Mechanisms Solve the “Lemons Problem*, 70 U. OF MIAMI L. REV. 830 (2016).

¹⁹ Israel M. Kirzner, DISCOVERY AND THE CAPITALIST PROCESS (Chicago: University of Chicago Press, 1985).

practice of tipping—offers drivers an incentive to treat customers well. When they are allowed to operate, other emergent orders such as price and quality competition also govern the market.

As with the line between public and private, the line between *cosmos* and *taxis* is not always clear. Companies may purposively design mechanisms that leverage certain *cosmos* orders for competitive advantage. For example, Lyft has for some time integrated a tipping function into its app. This formally creates an environment that is conducive to tipping, though of course, cultural norms and other emergent phenomenon will govern the practice. Still, it is not difficult to think of orders that are “more” emergent than others.

4. Four “Types” of Governance

We can now sketch out four “types” of orders: public-*taxis*, public-*cosmos*, private-*taxis*, and private-*cosmos*. Figure 2 depicts these four categories, with examples of each, drawn from the vehicle-for-hire industry.

Figure 2: Four Types of Governance

	<i>Taxis</i>	<i>Cosmos</i>
Public	A. No Examples.	B. Federal labor law, federal tax law, DMV rules, taxi commission rules.
Private	C. Bond posting, brand-maintenance, capital markets, insurance markets, centralized or third-party reputational mechanisms (Better Business Bureau), background checks, GPS monitoring of routes, algorithms to reward performance.	D. Price, quality, and dynamic competition; etiquette; social media reputation; peer-to-peer or decentralized reputational mechanisms.

A. Public-Taxis Orders

Public-*taxis* governance is what comes to mind when one talks about regulation: a deliberately-designed government-enforced set of rules. It is what those focused on the “public interest theory of regulation” such as Shreiber or A.C. Pigou have in mind when they call for regulations to address market failures. In

so doing, they assume that voters, interest groups, legislators, and bureaucrats possess the correct information and the correct incentives to act on this information in order to craft wise rules.

Public choice economists have argued that this assumption is overly romantic.²⁰ Voters have strong incentives to remain ignorant of all but the most basic facts of public policy.²¹ In some cases, we may even be governed by systematically false perceptions.²² Special interests—gaining from public regulations—can exploit these biases by appealing to false-narratives and fear-mongering.²³

Compared with diffuse consumer groups, producer interests tend to find it easier to overcome the free-rider problem that makes all collective action difficult to organize.²⁴ Producer groups tend to know the technical details of their professions and are often a source of information to regulators.²⁵ With greater organizational ability and superior knowledge, producer groups are often able to exercise greater influence on regulations than consumer groups. They use these advantages to seek rules that limit entry, raise rivals' costs, lock-in higher prices, or somehow increase demand for their products.²⁶

This helps explain why the public interest theory of regulation came to be rejected as a positive description of public governance, and it performs particularly poorly as a description of taxi market regulation.²⁷ In fact, the industry is a favorite example for textbook writers illustrating the failure of the public interest theory of regulation.²⁸ By 1976, Roger Noll could report in his survey of the literature that the public interest theory of regulation was “no longer widely shared.”²⁹

Interestingly, adherents to the public interest theory of regulation are not the only ones who operate with the public-*taxis* type of regulation in mind. Critics of government regulation—especially those that view

²⁰ James M. Buchanan, *Public Choice: Politics Without Romance*, POLICY 19, no. 3, 13-18 (Spring 2003).

²¹ Anthony Downs, *An Economic Theory of Democracy* (New York: Harper & Row, 1957).

²² Bryan Caplan, *THE MYTH OF THE RATIONAL VOTER: WHY DEMOCRACIES CHOOSE BAD POLICIES* (Princeton University Press, New ed., 2008).

²³ Adam Smith & Bruce Yandle, *BOOTLEGGERS AND BAPTISTS HOW ECONOMIC FORCES AND MORAL PERSUASION INTERACT TO SHAPE REGULATORY POLITICS* (Cato Institute, 2014).

²⁴ Mancur Olson, *THE LOGIC OF COLLECTIVE ACTION: PUBLIC GOODS AND THE THEORY OF GROUPS*, SECOND PRINTING WITH NEW PREFACE AND APPENDIX (Harvard University Press, Revised, 1965).

²⁵ Ernesto Dal Bó *Regulatory Capture: A Review*, OXFORD REVIEW OF ECONOMIC POLICY 22, no. 2, 203-05 (June 20, 2006).

²⁶ George J. Stigler, *The Theory of Economic Regulation*, THE BELL JOURNAL OF ECONOMICS AND MANAGEMENT SCIENCE 2, no. 1 (Apr. 1, 1971).

²⁷ Edmund W. Kitch, Marc Isaacson, and Daniel Kasper, *The Regulation of Taxicabs in Chicago*, JOURNAL OF LAW AND ECONOMICS 14, no. 2, 285-350 (Oct. 1, 1971); Adrian Moore & Ted Balaker, *Do Economists Reach a Conclusion on Taxi Deregulation?*, ECON JOURNAL WATCH 3, no. 1, 109-32 (Jan. 2006); Samuel Staley & Benjamin Douglas, *Market Concentration and the Supply of Taxicabs in US Cities*, Working Paper (DeVoe L. Moore Center, Florida State University, April 2014), http://coss.fsu.edu/dmc/sites/coss.fsu.edu.dmc/files/Staley_Douglas_APEETaxiConcentration_Ver2.pdf.

²⁸ *See, e.g.*, Alfred Kahn, *THE ECONOMICS OF REGULATION: PRINCIPLES AND INSTITUTIONS* (Cambridge, Mass: Massachusetts Institute of Technology, 1988).

²⁹ Roger G. Noll, *Government Administrative Behavior and Private Sector Response: A Multidisciplinary Survey*, Social Science Working Paper (Pasadena, CA: California Institute of Technology, 1976).

all or most public regulation as “captured” by industry—also seem to have the public-*taxis* model in mind.³⁰ “Capture theory” implies that the entire regulatory apparatus can be *seized* for the benefit of the regulated industry, and suggests that public regulations are *designed* for the purpose of creating above-normal profits (rents) for the industry.³¹

Both public interest theorists and capture theorists are wrong. No one would ever sit down and purposively design the complex, contradictory, and counterproductive set of rules that characterize public regulations. These rules are better conceived as public-*cosmos* orders, and they should give pause to anyone thinking that they can design an optimal public regulation for the sharing economy or any market for that matter. Any regulatory system, once designed, will quickly give way to changes that reflect particular preferences of regulators, elected officials, and interest groups.

B. Public-Cosmos Orders

Instead of thinking of regulation as the product of perfect information, regulation should be understood as *emerging* from political exchange between different groups over time. In this dynamic process, public regulations come to serve neither consumers nor producers. There are six reasons why public regulation should be thought of as an emergent phenomenon:

1. In order to obtain a rent, one interest group may need to logroll with another and agree to support *their* regulatory privilege.³² In the case of the vehicle-for-hire industry, one industry group such as luxury limousines may need to support the interests of another such as taxis.
2. Special interests may need to offer costly concessions to powerful or politically sympathetic consumer groups. In exchange for their regulated monopoly, for example, policy makers might require a regulated industry to agree to serve a costly community or to charge a particular set of customers a rate that is less than revenue-maximizing.³³ If interest groups were able to capture the process entirely, they wouldn't bother with these sorts of concessions.
3. Policymakers may be required to disguise regulatory privileges as public-interest regulation. This means that the transfers are accomplished in a comparatively inefficient way. If taxi interests could design the system on their own, they'd simply have legislators write them taxpayer-financed checks each year.
4. Changes in the market erode the value of regulatory privilege. Though taxi medallions limited the supply of taxis and supported above-normal profits for a time, the value of these rents was eventually capitalized into the value of the medallions. Would-be monopolists had to pay

³⁰ See, for example, David B. Truman, *THE GOVERNMENTAL PROCESS: POLITICAL INTERESTS AND PUBLIC OPINION* (New York, NY: Knopf, 1951); Marver H. Bernstein, *Regulating Business by Independent Commission*, 31 *INDIANA L.J.* 160 (1955).

³¹ Gordon Tullock, *The Welfare Costs of Tariffs, Monopolies, and Theft*, *WESTERN ECONOMIC JOURNAL* [ECONOMIC INQUIRY] 5, no. 3 (June 1, 1967).

³² Gordon Tullock, *Problems of Majority Voting*, *JOURNAL OF POLITICAL ECONOMY* 67 (1959); James M. Buchanan & Gordon Tullock, *THE CALCULUS OF CONSENT: LOGICAL FOUNDATIONS OF CONSTITUTIONAL DEMOCRACY* (Ann Arbor: University of Michigan Press, 1962); William H. Riker, *THE THEORY OF POLITICAL COALITIONS* (Yale University Press, 1984).

³³ Richard A. Posner, *Taxation by Regulation*, *BELL JOURNAL OF ECONOMICS* 2, no. 1, 22-50 (1971).

dearly—over \$1 million—for the right to earn above-normal profits. So, net of these costs, their returns were actually normal.³⁴ Again, no taxi company would actually design a regulation like this.

5. Entrepreneurs find margins along which to compete and whittle away the above-normal profits of regulatory privilege. This necessitates further regulation. One rule leads to another. Alfred Kahn described this well in the context of airline regulation: Each attempt to regulate the industry created an artificial stimulus to compete along some other margin, which led to further regulation, which created additional stimuli to compete along other margins. “Each time the dyke springs a leak,” Kahn explained, “plug it with one of your fingers.”³⁵
6. Multiple overlapping public regulators often govern the market, and each has the power to limit or exclude access to the market. With limited ability to coordinate, each fails to fully account for its effect on the others. This leads to over-restriction in what is known as a tragedy of the anticommons. The first four nodes after *A* in figure 1—arranged in a series to indicate that these mechanisms of governance cannot be avoided—represent such an anticommons.³⁶

The end result is a patchwork of highly-restrictive rules—what Richard Wagner has referred to as “entangled political economy”—that is in neither the general interest nor the producer interest.³⁷ It is a *cosmos* order because it emerges through a process of political exchange and because it evolves over time as different actors—regulators, policy makers, and interest groups—tweak it. But, unfortunately, it is a perverse *cosmos* order.

This helps explain why public regulation of taxis has become a textbook example of bad regulation. Many public-*cosmos* orders in the vehicle for hire industry are supposed to overcome information asymmetries, which can lead to a breakdown in the vehicle-for-hire market. As George Akerlof argued in his research on the market for used cars, such information breakdowns may require “government intervention,” or public-*cosmos* orders, to increase the welfare of all parties.³⁸ These public regulations, however, have consistently failed in the long run for one of two reasons (or some combination). First, as we explain above, these public-*cosmos* orders inevitably end up failing to represent either the general interest or the producer interest.

Second, public-*cosmos* orders tend to create stasis within the industry. That is, public-*cosmos* regulations have a tendency to mandate processes and procedures that cannot evolve with technology and consumer

³⁴ Gordon Tullock, *The Transitional Gains Trap*, BELL JOURNAL OF ECONOMICS 6, no. 2 (1975).

³⁵ Quoted in Thomas K McCraw, PROPHETS OF REGULATION 272 (Cambridge, Mass.: Belknap Press of Harvard University Press, 1984).

³⁶ The concept was originally developed by Heller (1998) and formally modeled by Buchanan and Yoon (2000). Michael Heller, *The Tragedy of the Anticommons: Property in the Transition from Marx to Markets*, 111 HARV. L. REV. 621 (Jan. 1998); James M. Buchanan & Yong Yoon, *Symmetric Tragedies: Commons and Anticommons*, JOURNAL OF LAW AND ECONOMICS 43, no. 1, 1-13 (Apr. 2000); Matthew Mitchell & Thomas Stratmann, *A Tragedy of the Anticommons: Local Option Taxation and Cell Phone Tax Bills*, PUBLIC CHOICE 165, no. 3ce, 171-91 (Dec. 19, 2015).

³⁷ Richard E. Wagner, POLITICS AS A PECULIAR BUSINESS: INSIGHTS FROM A THEORY OF ENTANGLED POLITICAL ECONOMY (Cheltenham, UK: Peculiar Business: Insights from a Theory of

³⁸ Akerlof, *supra* note 17..

preferences. Those who called for public regulation of the vehicle-for-hire industry could not predict the degree to which trust-based reputational mechanisms would continue to overcome information asymmetries nor the degree to which entrepreneurs would outperform formal government mechanisms.³⁹ A large degree of the disruption in the vehicle-for-hire industry is the result of platforms such as Uber and Lyft providing better solutions to old problems that were unavailable to traditional taxis.

C. Private-Taxis Orders

Markets are a dynamic—or evolutionary—process.⁴⁰ Standards, tools, and mechanisms deemed efficient today will be supplanted by newer, more efficient means tomorrow. This is one reason why private orders outperform public orders. And the vehicle-for-hire industry provides perhaps the best example of the virtues of private governance.

Over the past three decades, the internet, and various reputational mechanisms developed by entrepreneurs, have reduced the cost of acquiring information and resolved much of Akerlof's "lemons problem." As Adam Thierer and his coauthors explain:

[E]very perceived information problem also creates an incentive for the entrepreneur to discover new ways to create profit opportunities. By continually updating information and experimenting through trial and error, the entrepreneur discovers more efficient means of promoting human interaction and facilitating exchange.⁴¹

Private-*taxis* mechanisms are deliberately designed by entrepreneurs to address perceived problems. Examples of such private-*taxis* orders include brand maintenance, centralized or third-party reputational mechanisms (e.g., Better Business Bureau), background checks, GPS monitoring of routes, and algorithmic rules. These mechanisms encourage trust and facilitate exchange by gathering much of the information that a consumer might wish to gather before deciding which service to select. These mechanisms also regulate behavior by ensuring that bad actors cannot leverage information asymmetries to harm others (i.e., stealing from passengers or driving recklessly).

Private-*taxis* orders tend to be less-perverse than public-*cosmos* orders because they are less likely to be gamed given the competitive nature of the market process. Given the ease of exit, as consumers realize a platform is no longer fulfilling their needs, they can turn somewhere else. This fact is constantly driving these designed mechanisms to become better, and whenever a platform violates consumers' trust there is another waiting to take its place.⁴²

³⁹ For a fuller discussion of this see Thierer, *supra* note 18, at 836-840

⁴⁰ See Israel M. Kirzner, COMPETITION AND ENTREPRENEURSHIP 155 (1973); see also Armen Alchian, *Uncertainty, Evolution, and Economic Theory*, 58 J. POL. ECON. 211, 212-21 (1950).

⁴¹ Thierer, *supra* note 18, at 849 (internal citations removed).

⁴² For an example of this, see the "#deleteuber" campaign. Mike Isaac, *Uber Board Stands by Travis Kalanick as It Reveals Plans to Repair Its Image*, NEW YORK TIMES (Mar. 21, 2017), <https://www.nytimes.com/2017/03/21/technology/uber-board-stands-by->

Moreover, consumers may use a platform because they trust the platform without actually trusting those with whom they are interacting on it. Take, for example, eBay's money back guarantee.⁴³ This promise does not necessarily increase a buyer's trust in the seller, but it does increase the likelihood that a buyer will purchase what the seller is listing, allowing them to trust the transaction.⁴⁴ Likewise, many of the mechanisms used by ridesharing platforms, and sharing economy platforms in general, are not so much facilitating trust between users. In other cases, users come to trust that much of the hard work of vetting whom to exchange with and whom to avoid has been done for them.⁴⁵

In order to keep potentially bad actors from using the app to harm others, platforms such as Uber and Lyft perform criminal and driving background checks, ensure drivers have valid licenses, lay out basic safety standards for vehicles, and require that drivers be adequately insured. During drives, Uber and Lyft continually monitor quality by tracking drivers using GPS.

Unlike public-*cosmos*, private-*taxis* arrangements are constantly improved as technology improves. Each of these private-*taxis* orders, directed at both producers and consumers, act as regulatory measures. Each is driven by entrepreneurial alertness to consumer needs that have gone unmet (or have only been met in unsatisfactory ways), and will evolve and respond not only to changes in technology, but to consumer preferences and technical feasibility.

For example, Uber has piloted what it calls a Real-Time ID Check program.⁴⁶ While using the app, drivers are asked to take a selfie before they accept rides. Uber then uses Microsoft's Cognitive Services to instantly compare the selfie to the photos that Uber has on file. If the two photos don't match, the account is temporarily blocked while Uber resolves the situation. This ensures that passengers are picked up by the person who is supposed to be driving and that driver accounts are protected from theft.

Deliberately designed screening mechanism may also be used to ensure good behavior by consumers. Turo, a car-sharing service, will screen potential car renters for major issues in their driving record (e.g., DUI, reckless driving), and will bar potential users based on the results.⁴⁷ In fact, Turo relies on another third-party platform that creates unique "auto insurance scores" to estimate the relative risk of each individual driver.⁴⁸

travis-kalanick.html; See also reports of a corresponding spike in Lyft users during this same period. Madison Malone Kircher, *How Much Did #DeleteUber Actually Help Lyft?*, NEW YORK MAGAZINE (Apr. 27, 2017), <http://nymag.com/selectall/2017/04/lyft-user-numbers-spiked-after-delete-uber-campaign.html>.

⁴³ *eBay Money Back Guarantee*, EBAY, <http://pages.ebay.com/help/policies/money-back-guarantee.html#MBG>.

⁴⁴ See Thierer, *supra* note 18, at 858-863.

⁴⁵ *Ibid*, 859.

⁴⁶ *Selfies and Security*, UBER, <https://www.uber.com/ms-MY/blog/ipoh/selfies-and-security/>.

⁴⁷ Turo Support, *What Are the Eligibility Requirements?*, TURO, <https://support.turo.com/hc/en-us/articles/203991060-what-are-the-eligibility-requirements> (accessed July 1, 2017).

⁴⁸ Turo Support, *What is an auto insurance score?*, TURO, <https://support.turo.com/hc/en-us/articles/220443588-What-is-an-auto-insurance-score-> (accessed July 1, 2017).

For as effective as these private-*taxis* orders can be, however, they remain wholly dependent on the information available to entrepreneurs and their ability to process it effectively and design solutions to perceived problems.

D. Private-Cosmos Orders

As we noted above, private-*taxis* orders may facilitate trust and encourage exchange, building trust among individuals or at least in their interactions. But private-*taxis* orders do not fully capture the ability of individuals to gather, process, share, and ultimately act on information. Instead, they rely on the alertness and ability of individual entrepreneurs. Private-*cosmos* orders go beyond the platforms themselves and leverage the dispersed knowledge of producers and consumers. In a market economy, *cosmos* order manifests itself in a number of ways:

1. In a competitive market, shortages encourage entrepreneurs to raise prices while surpluses encourage them to reduce prices, causing the market to tend toward the “optimal” equilibrium in which price (and therefore marginal benefit) equals marginal cost.⁴⁹
2. The price system serves as an important coordinating mechanism, allowing millions of disparate individuals to act on widely-dispersed bits of information, including the subjective preferences of others; this permits each of us to coordinate with countless strangers, fitting our plans together even without a central planner.⁵⁰
3. Over the long run, as markets grow larger, individuals and firms are able to grow more specialized and this in turn increases their productivity.⁵¹
4. The lure of monopoly profit keeps firms innovating and thinking of new ways to differentiate themselves from their competitors while the discipline of competition restrains their prices.⁵²

Social media have facilitated the rise of another form of private-*cosmos* order. Individuals—whether a party to a particular transaction or not—are able to communicate approval or disapproval more easily and more rapidly than ever before. This has also made organizations (both corporations and governments) more responsive to consumer and citizen demands⁵³ The #DeleteUber campaign and the social media response to United Airline incidents in 2017 are two examples of this type of private-*cosmos* order.⁵⁴

⁴⁹ Vernon L. Smith, *An Experimental Study of Competitive Market Behavior*, JOURNAL OF POLITICAL ECONOMY 70, no. 2, 111-37 (Apr. 1, 1962).

⁵⁰ F. A. Hayek, *The Use of Knowledge in Society*, THE AMERICAN ECONOMIC REVIEW 35, no. 4, 519-30 (Sept. 1, 1945).

⁵¹ Adam Smith, AN INQUIRY INTO THE NATURE AND CAUSES OF THE WEALTH OF NATIONS, vol. 1 and 2, Book 1, Chapter 1 (Indianapolis, IN: Liberty Fund Inc., Glasgow ed. 1776).

⁵² Israel M. Kirzner, *Discovery and the Capitalist Process* (Chicago: University of Chicago Press, 1985); Israel M. Kirzner, *Entrepreneurial Discovery and the Competitive Market Process: An Austrian Approach*, JOURNAL OF ECONOMIC LITERATURE 35, no. 1, 60-85 (Mar. 1, 1997).

⁵³ Thierer, *supra* note 18, at 864-65.

⁵⁴ Mike Isaac, *What You Need to Know About #DeleteUber*, NEW YORK TIMES (Jan. 31, 2017), <https://www.nytimes.com/2017/01/31/business/delete-uber.html>; Julia Zorthian, *'Boycott United': Twitter Users Outraged After Man Forcibly Removed from Flight*, FORTUNE (Apr. 10, 2017), <http://fortune.com/2017/04/10/boycott-united-airlines/>.

Ratings and reviews are another example of private-*cosmos* orders, although in this case the orders have a *taxis* element since entrepreneurs purposively design and often curate the ratings that emerge through producer and consumer interaction. Ratings systems have been a hallmark of the internet since at least the rise of eBay and Amazon. In addition to the assurances made by eBay, which we discussed above, trust between buyers and sellers is facilitated by the ability to rate and review one another after the transaction. This allows users to understand, in some detail, how those with whom they exchange have behaved in the past.

Private-*cosmos* orders are a fundamental piece of most sharing economy platforms, and these companies have come to heavily rely on them. Ride-sharing companies, for example, employ extensive rating systems. Both drivers and passenger rate each other after every ride, and these ratings are used to determine future exchanges. Companies may choose to no longer work with low-rated drivers, drivers may choose to avoid picking up low-rated passengers, and companies may choose to avoid matching drivers and passengers who have rated one another poorly in the past.

Platforms are also beginning to encourage direct communication between users. This is facilitating greater levels of cooperation between users, building trust on a peer-to-peer basis, and leading to the emergence of more effective private-*cosmos* orders. As Elinor Ostrom explained:

From [the] theoretical perspective, face-to-face communication should make no difference in the outcomes achieved in social dilemmas. Yet, consistent, strong, and replicable findings are that substantial increases in the levels of cooperation are achieved when individuals are allowed to communicate face to face.⁵⁵

Car-sharing platform Turo stumbled upon this realization several years ago:

When the company first started, they had membership-card readers installed in every owner's car. Renters could unlock and start a car by swiping their membership card, thus eliminating the need for the car owner to be present. But it soon became clear to [Turo] that, in order to grow efficiently, they would have to abandon having card readers installed in every car. Instead, renters and owners met face to face to hand off the keys. The human connection led to gains for both parties: Owners made fewer damage claims and both renters and owners reported higher satisfaction ratings. As the CEO of [Turo], Andre Haddad, stated, "People strike up a conversation and realize they have something in common, which boosts trust and makes people feel accountable. They're going to have to return this car to that person and look them in the eye."⁵⁶

⁵⁵ Elinor Ostrom, *A Behavioral Approach to the Rational Choice Theory of Collective Action: Presidential Address*, AMERICAN POLITICAL SCIENCE ASSOCIATION, 1997, 92 AM. POL. SCI. REV. 1, 6 (1998).

⁵⁶ See, e.g., Jason Tanz, *How Airbnb and Lyft Finally Got Americans to Trust Each Other*, WIRED (Apr. 23, 2014, 6:30 AM), <http://www.wired.com/2014/04/trustin-the-share-economy>. See also Thierer, *supra* note 18, at 866-67.

For the same reasons, Airbnb, Uber, Lyft, and many other platforms require users to have a clear profile photo displayed with their accounts. But having access to such information, while a necessary condition, is not sufficient. This private-*taxis* order must be supplemented with private-*cosmos* practices. Cliff Lampe, a professor at the University of Michigan’s School of Information, has noted that these mechanisms—acquiring, sharing, and acting on information—help establish new social norms. He states that “[b]y providing feedback about behavior, penalizing negative actions, signaling desired outcome, and rewarding users, reputation and recommender systems are providing socializing functions and becoming valuable tools for organizing online environments.”⁵⁷ In short, ratings and reviews teach and enforce social norms within these platforms. As Lampe notes, “[B]y providing information about users, rating systems can act as ‘cues’ or ‘signals’ in online communities, allowing users to reach common ground about each other and facilitating social interaction.”

Private-*cosmos* orders fill in many of the nooks and crannies left by private-*taxis* orders. Platforms such as Uber and Lyft set general standards about appropriate behavior during rides while user reviews can communicate clearly what is and is not acceptable in certain specific contexts. The platforms could not possibly do this, even if they tried. What might be appropriate interactions in New York City may be far from appropriate in Cincinnati, Ohio.

Moreover, these private-*cosmos* mechanisms may also provide strong signals to platforms about what types of regulatory steps ought to become intergraded into their private-*taxis* mechanisms. Uber, for example, has integrated a “compliments” feature to allow passengers to provide positive reinforcement by providing a specific compliment to drivers.⁵⁸

There are other ways to integrate private-*cosmos* orders into private-*taxis* mechanisms. For example, Airbnb realized that properties with professional, verified photos are booked 2.5 times more often than those without such photos.⁵⁹ Renters, they found, were more likely to book listings that had not only better pictures but externally verified pictures (that is, pictures that were verified to be of the particular listing). Users on the platform were signaling what they preferred, and Airbnb listened.

For all of the merits of private-*cosmos* orders, there are some problems facing such reputational mechanism. They may be gamed, manipulated, or hijacked. Some fear that relying on such mechanisms

⁵⁷ Cliff Lampe, *The Role of Reputation Systems in Managing Online Communities*, in *THE REPUTATION SOCIETY: HOW ONLINE OPINIONS ARE RESHAPING THE OFFLINE WORLD* 77, 77 (Hassan Masum & Mark Tovey eds., 2011).

⁵⁸ Mike Truong, *Introducing Compliment*, UBER (Nov. 21, 2016), <https://newsroom.uber.com/compliments/>

⁵⁹ *Airbnb Free Photography: Celebrating 13,000 Verified Properties & Worldwide Launch*, AIRBNB (Oct. 6, 2011), <http://blog.airbnb.com/airbnb-photography-celebrating-13000-verified>

may exacerbate racial divides by making discrimination easier.⁶⁰ Many of these problems, however, are being resolved through competition between platforms.⁶¹

Conclusion

Although deliberately-designed public regulation is likely the first thing that comes to mind when one hears the word “regulation,” it is actually exceedingly rare. Most public regulation is not deliberately designed, but has evolved over a long period of time, resulting in a patchwork of rules that too often fail to serve the public.

Private regulation, on the other hand, is often overlooked and has a number of virtues. First, private orders permit institutional diversity and competition. While multiple, overlapping public orders create a tragedy of the anticommons, multiple, overlapping private orders permit users to opt in and out of different governance mechanisms. This means that these mechanisms are forced to evolve and improve to compete with one another. It also means that the governance mechanisms can make better use of local knowledge and can be calibrated to the tastes and preferences of local users. In the case of private-*taxis* orders, entrepreneurs can profit by correcting the mistakes of poor governance. Because these mechanisms do not govern the whole of the market, the risks of poor governance are relatively contained.

The decentralized nature of private-*cosmos* orders make them ideal for rapidly changing markets. Private-*taxis* orders, overlaying the private-*cosmos* orders, can overcome issues unresolved through direct, peer-to-peer interaction by allowing entrepreneurs to find such shortcomings and correct them.

⁶⁰ See, e.g., Nancy Leong, The Sharing Economy Has a Race Problem, SALON (Nov. 2, 2014), http://www.salon.com/2014/11/02/the_sharing_economy_has_a_race_problem;

Greg Harman, The Sharing Economy Is Not as Open as You Might Think, GUARDIAN (Nov. 12, 2014), <http://www.theguardian.com/sustainable-business/2014/nov/12/algorithms-race-discrimination-uber-lyft-airbnb-peer>.

⁶¹ For a fuller discussion, see Thierer, *supra* note 18, at 870-73