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INCONVENIENT AND UNNECESSARY? REGULATIONS IN THE U.S. TAXI INDUSTRY

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Abstract:

A Certificate of Public Convenience and Necessity (CPCN) is a common requirement for a new business owner in services such as utilities, communications, healthcare, and transportation. However, studies have called into question the effectiveness and purpose of these laws when applied in certain industries. This study chronicles the development of and justifications provided for the enactment of CPCN laws. It then empirically tests the effectiveness of these laws in the taxi industry. This paper finds no evidence that the CPCN laws in the taxi industry are meeting their objectives. Some evidence suggests that CPCN laws achieve the opposite of their intention.

Key words: *public interest; taxicab; city regulation; Uber; CPCN*

1. Introduction

Many governments in the U.S. require entrepreneurs to obtain a Certificate of Public Convenience and Necessity (CPCN) before operating a business. These laws are supposed to promote public welfare. They originated in the mid-seventeenth century, and governments have since expanded its legislative scope. CPCN laws typically prevent a new business from operating until it "proves" that it will serve the public interest. However, the definition of "public interest" has become increasingly broad and arbitrary. Consequentially, governments have excluded entrepreneurs from the marketplace. CPCN laws may have a justifiable historic precedent, but the evidence suggests that these laws present an unnecessary barrier to entry in certain sectors for individuals who would otherwise operate their businesses to service a public need.

Although not all CPCN laws are uniform in nature, most governing bodies adhere to a similar system of approval for a business. First, an individual or business

must submit an application for a certificate. Second, the entrepreneur must appear before a regulating agency to prove the "public need" for his or her business. To do this, the individual must prove that the services provided by similar, already existing businesses do not adequately supply the services demanded. The applicant must also prove that the new business would not reduce the profit of current businesses. The governing boards often give existing market competitors a chance to object to a new business's application, which can sway the outcome of the board's opinion.

The interpretation of "public interest" and "public convenience and necessity" can be subjective and left open to broad interpretation. It can adapt or change with under different political, social, and economic conditions. It is difficult for an entrepreneur or a governing body to interpret the qualifying factors for servicing the public interest under convenience and necessity laws unless a well-defined and enforceable set of standards is established.

This paper attempts to define "public interest." It then chronicles the history of CPCN laws and gives recent examples. Lastly, this paper examines the effectiveness of CPCN laws on the taxicab industry.

2. The Public Interest

Philip Selznick, former professor of sociology and law at the University of California, says that government uses the public interest as a justification for regulation in the private market by "limiting the exercise of private power, in pursuit of objectives valued by the community" (Feintuck, 2004). However, defining what is in the 'public interest' is difficult and ambiguous. In their work "Addressing the Public Interest in the 21st Century: A Framework," Pal and Maxwell (2004) describe factors that are often used as a philosophical basis for indicating how the public interest would be best served. Pal and Maxwell represent these factors in five categories: process, majority opinion, utilitarian, common interest, and shared value.

The process approach says that adherence to the legal and constitutional measures best serves the public interest. This approach asserts that governing entities enact laws only after they have carefully deliberated fairness doctrines, due process, equal representation, and other legal avenues that represent the public. The majority-opinion approach contends that policies serve the public interest when they align with the majority opinion in society. The utilitarian approach seeks to balance all of the represented interests in a matter and produce legislative policies that yields the greatest good for the greatest number of people (Pal and Maxwell, 2004). The common-interest and shared-value approaches are similar. They present servicing the public interest through a common lens, in which public policy considers universal underlying principles and moral precepts. There are some differences though. The common-interest approach assumes a society values common interests such as obtaining clean air and water, a stable food supply, and a healthy economic market. The shared-value approach represents the deeply rooted convictions of a society shared by at least most of the members of that society (Pal and Maxwell, 2004).

The public interest standard has been a continuously evolving goal rather than a clearly-defined one. Pal and Maxwell (2004) observed that "the public interest hovers over all the regulatory processes…, but it is rarely defined, or even discussed directly in legislation or in regulatory decisions." Carol Lewis (2006) also noted that "…the public interest is conceptualized more fruitfully as a process, not as an objectively identifiable end- point." Since the public interest standard is ambiguous and in flux, an entrepreneur faces a difficult challenge when attempting to prove that his or her business serves the public interest.

3. Regulatory History

William Hamilton traced the origins of the public interest standard back to 1676 in England. Sir Matthew Hale used the phrase "affected with a public interest" when describing the difference between charging duties for public and private wharves for the fishing and shipping industry (Hamilton, 1930). Hamilton notes that in the 1877 Munn and Scott case, which deliberated over the authority the state had over the use of grain elevators, Chief Justice Waite stripped the phrase from its original application toward wharves and their monopoly position and provided it with a new meaning. The judge ruled that "a business in which the whole public has a direct and positive interest" may be regulated (Hamilton, 1930). Even in this case though, jurists used the "public interest" as a common law doctrine to help direct the judicial opinion, but it did not established a legislative precedent. However, as the U.S. entered into a new age of industrialism, the public called for more price controls on industries.

William Jones (1979) chronicled the public interest standard from its common-law background to the early nineteenth-century United States. Jones cites the standard of incorporation as being the original predecessor to the CPCN laws that currently regulate public service industries today. Prior to the enactment of convenience and necessity laws, public service and/or utility companies were required to incorporate their businesses with the state through individual charters, in which they were obligated to provide certain services to the public in exchange for particular privileges and the right to operate. However, this system of individual incorporation provided an incentive for legislative officials to approve some businesses for incorporation and exclude others in exchange for kickbacks from the approved entities. Because of this level of political corruption, individual charters gave way to general incorporation statutes in which businesses could attain an incorporated status, along with the obligations and privileges that accompany such a status set forth by the state.

However, these articles of incorporation were not sufficiently flexible enough to continually adapt to changing market conditions. Legislatures couldn't simply continue adding clauses to these incorporated contracts between the state and private businesses. Instead, they needed a more flexible doctrine that could change with the passage of time and adapt to the changing of circumstance. Thus, following a push for regulatory and political reform in the mid 1800's, the public convenience and necessity

criteria emerged as a product of public utility commissions, whose job was to independently oversee the operation of public services (Jones, 1979).

Under these new regulatory commissions, both Massachusetts and Illinois began regulation of the railroad industry in 1869, with Massachusetts leading the charge in regulating some of its other public service sectors by 1885. Initially, the convenience and necessity criteria was primarily concerned with the allocation of resources and providing public services at the lowest cost possible. A Massachusetts commission approved one railroad company for expansion over another because the former company could more conveniently expand the rail line using a lesser amount of resources, and at a decreased cost (Jones, 1979).

For similar reasons, governments implemented public convenience and necessity laws in the gas, electric, and telecommunications industries by the end of the nineteenth century. Since their beginnings, the gas, electric, and telecommunication industries required access to public lands in order to provide adequate service to the general public through the use of electrical lines and underground piping. Allowing multiple companies to tear up the ground to lay piping or hang many electrical lines to service the same customer can be a wasteful misallocation of resources. Competition from the cheaper public service provider would render the lines and services supplied by the other provider to be useless and void. This outcome in each of these industries was undesirable. Jones (1979) mentions that most instances in which an electric or gas company was denied a certificate for laying an electrical line or piping for gas, the company was either prospected to charge consumers a higher rate than existing companies, or existing companies were found to provide sufficient services at a reasonable price.

Jones ultimately reasons that governments required certificates of public convenience and necessity to regulate markets with natural monopolistic conditions. If an outside business could provide new or better service, or in a market where many competitors are available, these laws are unnecessary. However, as these laws have developed past the late nineteenth and early twentieth centuries, they have adopted a definition well beyond pursuing the public interest through a proposed cost/benefit analysis, and they have been applied towards industries without natural monopolistic conditions.

Advancing into the late 1920's and early 1930's, it seems that Jones's call for careful consideration and practical application of CPCN laws fell wayward to governing bureaucrats and agencies. They were all too eager to place more public service industries under the blanket of public convenience and necessity. Even as early as 1930, in the Michigan Law Review, Ford Hall (1929) noted that, "Many and varied are the definitions of convenience and necessity which courts and commissions have propounded." From the late nineteenth century to the early 1930's, the public interest standard went from a cost/benefit analysis to one in which, "some of the more recent statutes pertaining to motor carriers, no statement is found of the grounds upon which the commission may refuse or grant a certificate" (Hall 1929).

George Shortney Peterson (1929), an economics professor at the University of Michigan, noted that prior to 1925, motor carrier transportation was primarily a concern of individual states and regulated through localized statutes. Under the evolving convenience and necessity standard, states were all too eager to bring the common carrier industry under their control. States advanced claims that an unregulated transportation industry would result in misleading advertisement, the stranding of passengers, a potential increase in the frequency of accidents, the incapacity of operators, and the multiplication of vehicles beyond the possibility of capacity use for all of them. This latter claim was perhaps the most effective in advancing this standard to its current applications. It asserted that motor carriers and other services provided within the transportation industry had the potential to produce a "deleterious effect of competition" upon one another and the railroad industry (Peterson, 1929). While Peterson (1929) concurred that governments should address some of public safety concerns, he concluded that, "the translation of these general ideas into more concrete terms tends to become distorted through undue preoccupation with the heritage of theories and legal concepts derived from our experience with the railways and other utilities."

While the public convenience and necessity standard may apply to the utility and railroad industry, Peterson (1929) contended it didn't necessarily apply in the same manner to the motor carrier industry. He states, "the great original out lay of the rail lines, [and] their confinement to fixed routes…necessarily made competition extremely bitter or else eliminated it," an attribute not present within other sectors of the transportation industry. Peterson knew of the possible abuse of using the public interest standard. He stated that it "is conceivable that such considerable difficulties of administration might arise that, in surmounting them, the real purpose would be lost sight of, and the methods employed become as objectionable as the condition which caused regulation to be adopted" (Peterson 1929).

Because of the need to consolidate the regulation of interstate commerce under a flexible standard, in 1935, the federal government issued The Motor Carrier Act. Charles Webb (1979) manifested the causes for concern of an unimpeded and broadly applied standard when he stated, "In drafting what became the Motor Carrier Act of 1935, the Congress and the Commission, in one sense, were not plowing new ground. They were filling a gap created by the Supreme Court in a long-established pattern of regulation." By this time, the convenience and necessity standard was so broadly accepted that it was applied as the legislative standard for an industry before the need for such legislation was carefully considered. Under this Act, the federal government had the jurisdiction to govern entry into the motor carrier, trucking, and auto transportation industry. Some of the initial justifications provided to support this Act included the need to prevent an oversupply of transportation, for equality of regulation throughout the industry, to prevent the failure of business owners to satisfy promises of service made to the public, and to consolidate federal power in the industry (Webb, 1979).

Governments continued to apply the convenience and necessity standard towards other fields, such as the alcoholic sales industry and the healthcare industry. Notably though, with the progression of this benchmark into the latter half of the 20th century, in application toward both the healthcare and alcoholic sales industries, these laws sought to promote a quantifiable objective. In the case of healthcare regulation, states required certificates of necessity (CON), and their clear objective (though ineffective) was to regulate and decrease healthcare costs by controlling the quantity of services provided. Likewise, within the alcoholic sales industry, this principle was implemented as means of preventing an "undue concentration" of alcohol sales within a confined geographic area. As noted by the California Council on Alcohol Policy, the placement of too many alcoholic businesses within the same geographic area significantly correlated with an increased crime rate (Coleman and Sparks, 2006). However, recent history tells us that government has imposed ambiguous CPCN standards to other industries, as illustrated in the examples discussed below.

4. Case Examples

The evolution and progression of the convenience and necessity standard has led to current applications of the law that stray from its original purpose. The following are a few examples.

New State Ice Co. v. Liebmann

On March 21, 1932, the United States Supreme Court issued an important decision with regard to the public convenience and necessity criteria. The case was brought by the New State Ice Co. of Oklahoma. They sought to prevent Liebmann from operating his ice manufacturing business under the Oklahoma statute, "declaring that the manufacture, sale and distribution of ice is a public business, [and] forbids anyone to engage in it without first having procured a license from a state commission" and it could only be issued with public "proof of necessity for the manufacture". In delivering the opinion of the court, Justice Sutherland states, "It must be conceded that all businesses are subject to some measure of public regulation… but the question here is whether the business is so charged with a public use as to justify the particular restriction above stated" (New State Ice Co. v. Liebmann, 1932). In his statement, Justice Sutherland presents that nearly all business are in some form affected with a public interest, as they all look to engage the market with a product or service.

Sutherland ruled that there are no distinguishing features of the ice manufacturing business that differentiates it so much from other sectors in lieu its service to the public that it should be subjected to the confinement of the convenience and necessity criteria. Instead, Justice Sutherland concluded that, "Stated succinctly, a private corporation here seeks to prevent a competitor from entering the business of making and selling ice. It claims to be endowed with state authority to achieve this exclusion" (New State Ice Co. v. Liebmann, 1932).

The Missouri Moving Company

In 2010, Michael Munie filed a lawsuit against the state of Missouri for denying him a certificate of convenience and necessity, which would have allowed him to operate his moving company throughout the state. Timothy Sandefur notes that Munie held a federal license, which allowed him to transport materials and provide his moving services across state lines. Additionally, Munie had been in the moving business since he was sixteen years old. Yet, even though he was clearly qualified as a licensed mover with extensive experience in running a moving business, Munie was denied the required certificate (Sandefur, 2010)

Although the public convenience and necessity law in Missouri doesn't provide authority to the general public with an opportunity to object to the issuance of a new license, it does outline a period in which existing moving companies may oppose the issuance of a new license. Thus, in response to his application, four other Missouri moving companies issued their objections toward Munie and he was denied a certification. Given the extensive legislative process for appeal and the extended period of board deliberation, Munie opted to apply for a more localized license within just the St. Louis area, which was not contested by the other moving companies and Munie was approved. In his frustration, Munie said "I shouldn't be prevented from serving the public by arbitrary rules that only serve to limit people's choices and service options" (Sandefur, 2010).

Later, after a long-fought battle with the courts, on July 11, 2012, Missouri's Governor Jay Nixon repealed the convenience and necessity criteria on the moving industry. Sandefur, the representing attorney, stated that "This law didn't protect the public…It only protected established businesses against fair competition" (Sandefur, 2012). In this case, the government found the convenience and necessity statute to be inconvenient and unnecessary.

A Case from Kentucky: Wildcat Moving

In 2012, Raleigh Bruner, owner of Wildcat Moving Company in Kentucky, was denied a permit for operating his moving company in the city of Lexington after already established moving companies objected to his application. In fact, while the applications of some moving companies were immediately approved without protest, new companies were denied a certificate when other companies protested (Kocher, 2014). Essentially, existing moving companies sought to capitalize on the 'veto' process under the public convenience and necessity standard, knowing that if they protested an applicant, the applicant would be denied. This veto process certainly doesn't reflect the interests of the public, but instead reflects the individual interests of existing moving companies.

When Bruner brought his case before the court, Judge Danny Reeves determined the law to, "offend and violate the 14th Amendment, which protects a person from arbitrary action of the government" (Kocher 2014). Judge Reeves did continue to reflect the administrative concern for providing the public with quality businesses known to operate under the safety guidelines issued by the state by stating

that businesses must still demonstrate that they are, "fit, willing, and able" to adequately serve the public. The judge implied that a moving businesses should be permitted to operate if it can pass safety checks on their vehicles and fulfill the other regulations applied to the industry (Kocher, 2014).

Little Rock: The Case of Ken's Cabs

In 2015, Ken Leininger, owner and operator of Ken's Cabs, applied for a certificate of public convenience and necessity from the Little Rock Fleet Services Department in order to expand his taxi operations from North Little Rock to Little Rock. Despite his experience as a taxicab business owner, his commitment to providing an eco-friendly public service, and his passage of the required background check and safety regulations, the city denied Ken a certificate. Similar to the case of the Missouri and Kentucky moving companies, "Little Rock's Fleet Services Department admitted that Ken met all of the requirements other than the 'Monopoly Rule,' but rejected Ken's application when Yellow Cab objected (Dobrogosz, 2016)." Ken filed a lawsuit against the city of Little Rock, claiming the CPCN laws protected the existing Little Rock monopoly. Under Arkansas's constitution (Article II, §19), monopolies "shall not be allowed." After taking this provision into consideration, on January 25, 2017, Judge David Laser found Little Rock's rules to be unconstitutional and ruled in favor of Ken in the Pulaski County Circuit Court.

Rejection for application under this standard is certainly not isolated to these four examples. Notably, nearly all of these examples share the commonalities of competitive objection, ambiguous fulfilment criteria, and commission choice, all a product of the expansion of the CPCN beyond its original mandate.

5. An Empirical Analysis

Although the lack of data availability prevents an empirical analysis of the convenience and necessity criteria on an industry-by-industry basis, an empirical analysis of this standard in one or two industries may help to provide a reasonable model for its effects in other industries. An extensive literature on certificates of need within the healthcare industry demonstrates inefficiencies and associated economic costs, but the amount of literature on CPCN laws remains scarce. The following empirical analysis is on the public convenience and necessity laws in the taxicab industry.

Generally, within the taxicab industry, there isn't much consensus substantiating the public interest being pursued through the certificate of public convenience and necessity. In a local questionnaire submitted to the governing city officials in the Arkansas cities of Springdale, Jonesboro, Hot Springs, Fayetteville, Fort Smith, West Memphis, and Little Rock, most legislative officials were unaware as to the intent or purpose of these governing laws, but only looked to enforce them. However, a few officials listed reasons. Some of the commonalities provided included a concern for public safety, a desire to minimize congestion, a desire to provide

consumer accessibility, a need to provide public transport services at reasonable rates, and an assurance for the sustainability of public service operatives. However, are CPNC laws an effective method in attaining these outcomes?

The following data seeks to analyze the relationship between CPNC laws and traffic congestion from cities across the United States. Theoretically, CPNC laws can have both positive and negative effects on traffic congestion. The laws could lower congestion if free-entry causes too many taxicab drivers to occupy the road. However, it can also have an unintended effect if too few taxi cabs are available, in which individuals will resort to the do-it-yourself option of driving their own or renting a vehicle. Congestion can increase if there are more cars on the road and more cars searching for parking.

Table 1 displays the cross-sectionals ordinary least-squares (OLS) estimates for U.S. cities (see Table 5 for a description of variables). Traffic congestion is the dependent variable for Models 1 through 3, where "Congestion" is defined as the percentage increase in travel time compared to a free-flow situation. The independent variable of interest is "Public Convenience." It is a binary variable, equal to 1 if a city requires a new taxi company to obtain a certificate of public convenience and necessity; otherwise, the variable is equal to 0.

Table 1. Congestion

Traffic Congestion and Public Convenience and Necessity Laws					
Variable	Congestion	Congestion	Congestion	Change in Congestion	Change in Congestion
	(1)	(2)	(3)	(4)	(5)
Public Convenience	2.52*	2.71*	3.06**	0.11	0.00
	1.47	*1.47*	*1.45*	*0.34*	*0.39*
Population Density	3.72***	3.34**	2.25*	-0.08	-0.04
	1.19	*1.34*	*1.31*	*0.28*	*0.34*
Income	14.35***	13.48***	10.53***	0.58	0.74
	2.64	*2.73*	*2.42*	*0.92*	*0.97*
Uber 5-Mile Price		0.61	2.53		-0.17
		0.73	*0.75*		*0.31*
Cab-Uber Price Difference (%)			0.42***		*-0.03*
			0.13		*0.05*
Median Age			0.64*		0.04
			0.33		*0.15*
Congestion				0.10***	0.10***
				0.03	*0.03*

Constant	-159.65***	-151.50***	-158.21	-7.87	-7.70
	24.85	*26.93*	*24.79*	*9.50*	*10.39*
N	52	52	52	52	52
r2	0.45	0.46	0.55	0.29	0.30
r2_a	0.42	0.42	0.49	0.22	0.19
F	21.10	21.34	19.01	5.50	4.82

Notes: Cross-section OLS estimates for city data (year 2014 or more recent) are presented in the table above. The dependent variable "Congestion" is measured as the percentage increase in travel time compared to a free-flow situation. "Change in Congestion" is the percentage point difference in congestion from the previous year. Robust standard errors are in parentheses. * denotes 10% significance level; ** denotes 5% significance level; and *** denotes 1% significance level.

In the first model, the control variables are population density and income per capita. Notably, cities with CPCN laws have more traffic congestion than those without the requirement. As predicted, the populated and high-income cities have more congestion. Model 2 includes the same variables with the addition of one additional variable: the average price of an Uber 5-mile ride. By including the Uber price, the model controls for Uber competition. The coefficients in Model 2 are not substantively different than those in Model 1.

Two additional variables are included in Model 3: the Cab-Uber price difference (%) and the median age. The premium that customers pay for a taxi over the Uber service can be a signal for the supply of Uber, as the restrictions on cab drivers potentially causes more room for Uber drivers to clog the streets. Median age of the population could be a considerable factor in whether or not a consumer chooses to ride with a cab company or with Uber. Likewise, there may be an age-varying preference for areas that tend to be congested. The effect of CPCN laws on predicted congestion increases in magnitude and statistical significance in Model 3 compared to Models 1 and 2. Based on these results, there is a positive and statistically significant relationship between the existence of CPCN laws and congestion.

Though there is a correlation between the taxi regulation and congestion from Models 1 through 3, it cannot determined if CPCN laws are the cause of more congestion or if congestion is the reason for CPCN laws. It is possible that open entry caused some congestion problems in some cities, and then those cities reacted by enacting CPCN laws. However, if true, then requiring a certificate of public convenience and necessity should then decrease congestion. Models 4 and 5 examine the change in congestion from the previous year. Since these laws do not vary frequently over time, analyzing the change in congestion from the previous year helps reveal whether cities with the regulations are facing more or less traffic congestion. Controlling for the level of congestion, the coefficient on public convenience is not significantly different from zero in Models 4 and 5. Presumably then, cities with CPCN laws have a higher congestion rate than those without these laws, and there is no evidence to reveal that these laws cause congestion to decrease.

Another justification for regulating taxi entry is public safety. Proponents of CPCN laws may be concerned with cab drivers who take advantage of unsuspecting passengers. Specifically, an unregulated taxi market could increase the number of sexual assaults because of the vulnerable state of passengers in need of transportation. Although a vetting process, such as a background check, could more directly target the problem, one can argue that the public convenience and necessity standard is needed to prevent criminals from becoming taxi drivers. To test this theory, Table 2 displays the cross-section OLS estimates for U.S. Cites with Rapes per 100,000 residents as the dependent variable.

Table 2. Regulations and Sexual Assault

Reported Rapes and Public Convenience and Necessity Laws				
Variable	Rapes	Rapes	Rapes	Rapes
	(1)	(2)	(3)	(4)
Public Convenience	1.38	-0.52	0.11	0.26
	6.08	*5.81*	*5.81*	*7.98*
Population Density		-9.79**	-10.37**	-6.27
		4.07	*4.42*	*5.22*
Income		-22.40	-19.58	6.51
		16.34	*16.51*	*19.95*
Uber 5-Mile Price		2.56	2.34	-4.66
		2.49	*3.77*	*5.28*
Cab-Uber Price Difference (%)			-0.07	*-1.80**
			0.66	*0.90*
Median Age			-0.80	-2.19
			0.91	*2.38*
Congestion				-0.51
				0.63
Constant	53.06***	344.53**	334.83**	214.26
	4.75	*157.81*	*158.10*	*204.61*
N	89	89	89	49
r2	0.00	0.11	0.11	0.30
r2_a	-0.01	0.06	0.05	0.18
F	0.05	2.44	1.76	4.73

Notes: Cross-section OLS estimates for city data (year 2014 or more recent) are presented in the table above. The dependent variable "Rapes" is measured as the number of reported rapes per 100,000 residents. Robust standard errors are in parentheses. * denotes 10% significance level; ** denotes 5% significance level; and *** denotes 1% significance level.

Table 2 provides no evidence that a lack of CPCN laws are associated with more incidents of rapes in a city. In fact, across all models, no variable has a

consistent statistically-significant relationship with the number of rapes per 100,000 residents. In 3 of the 4 model specifications, the number of rapes is positively correlated with the existence of CPCN laws, but the magnitude of the coefficient is not statistically different from zero.

Table 3. Regulations and Overall Crime

Crime Index and Public Convenience and Necessity Laws				
Variable	Crime Index	Crime Index	Crime Index	Crime Index
	(1)	(2)	(3)	(4)
Public Convenience	29.81	19.71	7.02	-15.39
	39.12	*38.28*	*39.64*	*46.79*
Population Density		-35.76	-22.85	-4.57
		29.60	*31.69*	*32.35*
Income		-140.45	-155.85	-132.79
		118.88	*112.76*	*141.33*
Uber 5-Mile Price		2.30	-7.61	-28.16
		20.91	*30.81*	*39.50*
Cab-Uber Price Difference (%)			-1.50	*-9.06*
			4.20	*6.06*
Median Age			11.17	-2.64
			6.45	*15.07*
Congestion				-2.18
				3.69
Constant	421.47***	2131.46*	2222.21*	2711.53*
	28.28	*1168.34*	*1134.56*	*1565.10*
N	86	86	86	46
r2	0.01	0.05	0.08	0.24
r2_a	-0.01	0.01	0.01	0.10
F	0.58	1.10	1.28	1.31

Notes: Cross-section OLS estimates for city data (year 2014 or more recent) are presented in the table above. The dependent variable "Rapes" is measured as the number of reported rapes per 100,000 residents. Robust standard errors are in parentheses. * denotes 10% significance level; ** denotes 5% significance level; and *** denotes 1% significance level.

Likewise, Table 3 is similar to Table 2, except the dependent variable is the city crime index instead of the incidents of rape. No evidence in any of the models suggests that crime is related to CPCN laws. The coefficients on the public convenience variable are not statistically different from zero.

Perhaps one of the most pressing concerns addressed through the public convenience and necessity standard since its beginnings has been the concern about companies providing consumers with a quality public service at an affordable rate. Similar to its railroad and utility company counterparts, commissioners have long been concerned with ensuring public transportation's prices are reasonable. However, upon analyzing the services offered by the relatively new transportation company, Uber, it becomes apparent that competition in this market may actually stimulate a drop in price for public transport services.

Table 4 shows the maximum, minimum, and average prices charged by both Uber and taxicab companies on a one, five, and ten-mile basis from over 100 observed cities across the United States. Uber prices are for Uber's cheapest vehicle, UberX. As seen from the table, on average, Uber is able to offer public transportation services at a substantially cheaper price, such that the maximum rate charged by an Uber driver on a per mile basis doesn't exceed the minimum rate charged any taxicab company from across the U.S.

Table 4. Uber Price Differential

Price ($) Comparison: Taxicab vs Uber					
Variable	Obs	Mean	Std. Dev.	Min	Max
1 mile Taxicab	97	5.71	1.06	3.02	8.34
5 mile Taxicab	97	17.22	2.81	11.80	24.92
10 mile Taxicab	97	29.94	4.78	19.97	41.61
1 mile Uber	97	1.30	0.31	0.87	2.45
5 mile Uber	97	6.50	1.57	4.35	12.25
10 mile Uber	97	13.01	3.13	8.70	24.50
1 mile Cab premium	97	4.41	1.06	1.72	7.14
5 mile Cab premium	97	10.72	2.91	1.28	17.92
10 mile Cab premium	97	16.93	5.13	0.03	28.17

One can argue that Uber is able to charge low prices because the company is either not subjected to localized cab regulations, or it simply ignores them. While not all cities have the same list of requirements for cab companies, some of the common ones include requirements for establishing a fixed place of business, maintaining at least one cab in operation 24/7, ensuring a call center is set up to receive incoming pickup requests 24/7, maintaining at least $1,000,000 in minimum insurance coverage, and requiring cabs to be kept in pristine condition subjecting them to quarterly inspections. All of these specifications significantly increase the fixed start-up costs for

new entrants into this market. Because Uber is exempt from or ignores these requirements, they are able to offer a basic public transportation service at a much cheaper rate.

However, Uber also offers higher quality transport services other than its basic UberX service. Those rates remain lower than taxicab companies. By offering both a basic and high quality ride service at different rates, Uber has been able to sustain the high quality transport services similar to those offered by taxicab companies, while simultaneously tapping into an unreached consumer base.

Table 5. Data Descriptions

Key for City Data (year 2014)		
Variable	Description	Source
Public Convenience	Binary variable equals 1 if city requires a certificate of public convenience and necessity to drive a cab; 0 otherwise.	Retrieved from city ordinances
Population Density	Population per square mile	US Census
Income	Income per capita	Bureau of Economic Analysis
Uber 5 Mile Price	Average price of Uber for a 5 mile drive	
Cab-Uber Price Difference (%)	Percentage difference between an average taxi cab price and an average Uber price for a 5 mile trip. Calculated as ((Cab price - Uber price) / Cab price)*100.	Author calculations
Median Age	Median age in city.	US Census
Congestion	City congestion is defined as the percentage increase in overall travel time compared to a free-flow situation.	Data retrieved from https://www.tomtom.com/en_us/trafficindex/list.
Change in Congestion	% point change in congestion from the previous year.	Author calculations
Rapes Per 100k	Reported Rapes per 100,000 residents	http://www.city-data.com/
Crime Index	Crime index for the city. A high number corresponds to high crime rates.	http://www.city-data.com/

6. Conclusion

Evidence suggests that requiring a certificate of public convenience and necessity does not effectively protect or promote the public interest, and in some instances imposes unnecessary costs to consumers and potential entrepreneurs. CPCN laws are often vague, and they have are applied in numerous cases without a clear public purpose. In many instances, the real purpose of the law is to protect the incumbent businesses from competition. This exclusion has allowed incumbent businesses to retain either a monopolistic or oligopolistic hold on the market, passing off costs to the public. The current application of this standard makes these policies all the more egregious as they wear the deceptive mask of promising a protection of the public while hurting the public welfare. Within the taxicab industry, CPNC laws did not improve traffic congestion and did not prevent crime and improve public safety. The laws did raise the cost of public transportation services well beyond the costs of the unregulated transport service, Uber. Thus, not only is it an inefficient way to achieve these listed goals, but CPCN laws failed to accomplish the few measurable objectives extended in its defense. Evidence in the taxicab industry suggests that these laws are unnecessary and inconvenient.

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