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INTRODUCTION

Over the past several years, upstart transportation-for-hire companies like Uber, Lyft and Sidecar have attracted millions of riders, rattled competitors and upended markets with the whirlwind forces of creative destruction. Their success has sparked heated debates in city halls across the country, as lawmakers grapple with antiquated transportation regulations and their many self-interested defenders.

Like many other peer-production businesses, the hallmark of these transportation network companies (TNCs) is disintermediation, or the removal of middle men who previously were necessary to facilitate connections. By cutting out taxi-fleet operators and license owners, TNCs aim to improve service levels and reduce prices. The direct connection of buyers and sellers can exploit underutilized capital in the form of a practically limitless pool of available drivers, thus helping to reduce costs for both consumers and providers.

Of the world's roughly 1 billion cars, about 740 million are primarily used by a single rider.[1] By making better use of this tremendous stock of capital and labor, ride-sharing services can provide not just additional economic surplus, but potential environmental benefits, as well. These new businesses might allow individuals to satisfy their transportation needs with fewer cars than were previously necessary, possibly reducing congestion.

The rapid growth of TNCs suggests strong consumer demand for transportation solutions that differ from traditional taxi and limo services. Using modern smartphone technology to connect riders and drivers in real time, TNCs eliminate the need to rely on spotty dispatch service or hail a cab on the street. That convenience is combined with seamless credit card payment, quality ratings for both drivers and riders,

1. Kristina Dervojeda, et al., "The Sharing Economy: Accessibility Based Business Models for Peer-to-Peer Markets," European Commission Business Innovation Observatory, September 2013. http://ec.europa.eu/enterprise/policies/innovation/policy/business-innovation-observatory/files/case-studies/12-she-accessibility-based-business-models-for-peer-to-peer-markets_en.pdf

better coverage in underserved communities and, in many cases, substantially lower fares. It thus should not be surprising that some TNCs have attracted significant market share and become multi-billion dollar enterprises in a very short period of time.

In June 2014, Uber famously attracted funding from major investment firms that suggested a staggering valuation of $17 billion.[2] While some observers have dismissed this number, even relatively pessimistic assumptions yield multi-billion dollar valuations. New York University Professor Aswath Damadoran estimates Uber is worth nearly $5.9 billion, which would be quite impressive for a five-year-old company that premiered its lower-cost UberX service (in which private vehicle owners pick up fares in smaller, more fuel-efficient vehicles) in select cities just two years ago.[3]

The early results suggest, at minimum, that TNCs are having a significant impact on taxi usage. The San Francisco Municipal Transportation Agency reported that taxi trips dropped 65 percent over the course of just 15 months, from 1,424 per month to just 504.[4]

In fact, TNCs may expand the market substantially, by convincing consumers to use the service at times they otherwise would not have called a taxi or limo. NYU's Damadoran pegged the global car service market at $100 billion, suggesting that even if one TNC achieved a strong position globally, it would be unlikely to yield a valuation north of $15 billion. Such lofty numbers are justified by the projection that TNCs will expand use-cases for their services by drawing business from those who otherwise would rely on owned or rented cars, or utilize public transit, to satisfy their transportation needs.

As noted in an earlier R Street Institute policy study, this advancement brings with it the potential for huge amounts of added economic growth.[5] The McKinsey Global Institute has estimated that social networking technologies, which include but aren't limited to peer-production businesses like TNCs, could potentially add $1.3 trillion of annual consumer surplus in just four key sectors of the economy: consumer packaged goods, consumer financial services, professional services and advanced manufacturing.[6] Given the vital role individual vehicular transportation plays in the global economy, it seems reasonable to estimate the impact of TNCs in the billions of dollars.

Their success has not gone unnoticed, or unchallenged, by the entrenched taxi and limo industries in many localities. The policy response has varied wildly from one locality to the next, with some embracing the opportunity inherent in added competition and others seeking to shut it down before it ever takes off. Taxi drivers complain that TNCs are operating outside the scope of existing taxi regulation, in effect branding them "gypsy cabs" operating on the black market. They argue that embracing TNCs will erode market share for taxis, whittling away at revenue and employment in an already-turbulent business.

To remedy this, most entrenched interests have suggested requiring TNCs to submit themselves to the often ill-fitting regulations that currently govern taxi and limo service, despite major differences in business structure that call for tailoring an alternative treatment. Whether requiring them to purchase expensive supplemental licenses (often called "medallions") or submit themselves to elaborate pricing mandates, the complex requirements taxi companies seek to impose on TNCs would severely hamper, if not eliminate, their ability to operate in most cities. While it is understandable that taxi and limo interests might resent TNCs for their leaner business model, the impulse to seek the *expansion* of restrictive regulations – rather than broader reforms that reduce the burden on all competitors – is worrying.

Taxi and limo interests do indeed shoulder heavy and, often, unnecessary regulatory burdens. The emergence of TNCs thus should be a golden opportunity to discuss full-scale, pro-consumer regulatory reform. Alas, in many cities, it has instead turned into a political battle, in some cases literally spilling into the streets through protests and traffic disruption by frustrated taxi drivers.

To paint a comprehensive picture of transportation regulation across the country, we embarked on an ambitious research project to grade 50 of the largest U.S. cities on their friendliness to the full range of for-hire vehicle services. The challenges relate to more than just TNCs, thus we also surveyed restrictions on taxi and limo services. In each city, we gathered information on key regulatory variables for TNC, taxi and limousine services, awarding numerical scores for each category that reflect deviation from a base score. Combining the grades for TNC regulatory friendliness, taxi regulatory friendliness and limo regulatory friendliness together yields an overall "ride score" that describes the city's

2. Evelyn M. Rusli and Kirsten Grind, "Wellington and Fidelity Expected to Lead Uber Investment," *Wall Street Journal*, June 3, 2014. http://blogs.wsj.com/digits/2014/06/03/wellington-and-fidelity-expected-to-lead-uber-investment/

3. Aswath Damodaran, "A Disruptive Cab Ride to Riches: The Uber Payoff," *Musings on Markets*, June 9, 2014. http://aswathdamodaran.blogspot.com/2014/06/a-disruptive-cab-ride-to-riches-uber.html

4. Michael Cabanatuan, "Ride services decimate S.F. taxi industry's business," *San Francisco Chronicle*, Sept. 16, 2014. http://www.sfgate.com/bayarea/article/Taxi-use-plummets-in-San-Francisco-65-percent-in-5760251.php

5. Andrew Moylan and R.J. Lehmann, "Five principles for regulating the peer production economy," R Street Institute, July 2014. http://www.rstreet.org/wp-content/uploads/2014/07/RSTREET26.pdf

6. Michael Chui, et al, "The social economy: Unlocking value and productivity through social technologies," McKinsey Global Institute, July 2012. http://www.mckinsey.com/-/media/McKinsey/dotcom/Insights%20and%20pubs/MGI/Research/Technology%20and%20Innovation/The%20social%20economy/MGI_The_social_economy_Full_report.ashx

openness to competition in the market for hired vehicle services. Forty percent of the overall ride score derives from TNC friendliness, 40 percent from taxi friendliness and 20 percent from limo friendliness.

The scorecard is graded on a curve. If measured against an ideal system – one with the proper balance of public health and safety regulations that don't unnecessarily restrict competition – most cities would fare poorly. Every jurisdiction has at least some rules of questionable utility. While none are perfect, some cities do a better job of fostering competition while protecting the public interest. This analysis is an attempt to identify them.

TNC FRIENDLINESS

To assess TNC regulations, we looked at three key policy areas. Each city started with a base score of 90, and points were added or deducted based on the following questions:

1. *Has the city issued cease-and-desist orders to TNCs since Jan. 1, 2013?* Unfortunately, many cities have taken a "ban first, ask questions later" approach to TNC operations. If it has issued cease-and-desist orders to all such companies (including Uber, Lyft and Sidecar), we deduct 15 points. If it has issued such an order to one company but not others, we deduct 7.5 points. If that order has since been lifted, we add back 10 points (or 5 points for company-specific orders) for a net penalty of 5 points (and 2.5 points for company-specific orders). The reason for distinguishing between catch-all and company-specific orders is that each operates a slightly different business: Uber has black car, taxi and ride-sharing services; Lyft operates a fare-based ride-sharing business; and Sidecar is essentially ride-sharing without set fares. These differences might run one company or another into a tripwire not triggered by competitors. An order against one might indicate a narrow problem or perceived violation, while an order against all suggests a knee-jerk reaction against any non-incumbent service provider.

2. *Has the city imposed anti-competitive restrictions on TNCs?* In addition to cease-and-desist orders, many cities recently have passed (or already had on the books) significant barriers to entry for TNCs. These range from limitations on pricing to minimum wait times to restrictions on zones of operation. Such rules can make TNC operations expensive, difficult or downright impossible. Depending on the severity of such regulations, we deduct as many as 30 points from the base score, paying particular attention to arbitrary rules, such as prescriptive vehicle size requirements or differential pricing mandates that limit competition.

3. *Does the city have a TNC-specific regulatory framework?* While our preference is for full-scale regulatory overhauls that eliminate separate sets of rules, the reality is that most cities will need a new regulatory framework to clarify the legal basis of TNC operation. If the city lacks any framework to affirmatively allow TNC operation, we deduct as many as 10 points. If it has a temporary operating agreement or a proposal to do so awaiting approval, we add 1 point. If a framework is already in place, we add up to 10 points.

Applying the results of these questions to the base score yields a score that translates into a letter grade for TNC regulatory friendliness. The TNC grade accounts for 40 percent of a city's overall score.

The results demonstrate tremendous city-to-city variation in TNC regulation. The median score was roughly 80, equivalent to a B- grade. However, the standard deviation was by far the largest of any of the three categories we examined, reflecting that some cities have been open to innovative transportation services, while others have been extraordinarily harsh. The scores ranged from a high of 100 (Colorado Springs, Denver, Minneapolis, Seattle, Washington) to a low of 35 (Kansas City, Omaha).

Our review shows the regulatory environment for TNCs to be relatively immature, as the services have only been in operation for a few years. Lawmakers have struggled to determine how to categorize these services, with some applying existing taxi regulations and others applying existing limo rules, neither of which fit neatly. We also find that several cities have reacted harshly to TNCs, with 13 of the 50 having issued cease-and-desist orders of some sort. Only six have since been lifted, one by a judge and the rest by subsequent implementation of a legislative framework.

On the other hand, 19 of the 50 cities have established TNC-specific regulatory frameworks, while four have instituted some form of temporary operating agreement allowing for operation of at least some TNCs. These arrangements generally provide a legal foundation for TNCs to operate, eliminating the gray area in cities that have not yet updated their regulatory structures. However, temporary operating agreements are in some respects problematic. While preferable to outright bans or ongoing legal limbo, these arrangements are ephemeral and tend to be company-specific, only allowing the operation of businesses named in the agreement. Future entrants to the TNC market may face uphill battles to achieve legal status in the absence of statutes that set out basic rules of operation. Furthermore, such agreements could create incentives for the named parties to lobby against permitting future competitors to enter the market.

The TNC-specific frameworks tend to include two basic

TABLE I: TRANSPORTATION NETWORK COMPANY REGULATION SCORES

City	State	Base Score	Legal Framework	Cease-and-Desist	Hostile Regulation	Final Score	Letter Grade
Albuquerque	NM	90	-5	-15	-5	65	D
Atlanta	GA	90	-5	--	--	85	B
Austin	TX	90	+10	-5	--	95	A
Baltimore	MD	90	-10	--	--	80	B-
Boston	MA	90	-10	--	--	80	B-
Charlotte	NC	90	-10	--	--	80	B-
Chicago	IL	90	+1	--	-5	86	B
Cleveland	OH	90	-10	--	--	80	B-
Colorado Springs	CO	90	+10	--	--	100	A
Columbus	OH	90	+1	--	-15	76	C
Dallas	TX	90	-10	--	-5	75	C
Denver	CO	90	+10	--	--	100	A
Detroit	MI	90	--	--	-5	85	B
El Paso	TX	90	-10	--	--	80	B-
Fort Worth	TX	90	-10	--	--	80	B-
Fresno	CA	90	+10	--	-3	98	A
Houston	TX	90	+1	-5	-10	76	C
Indianapolis	IN	90	-5	--	--	85	B
Jacksonville	FL	90	-10	-15	-10	55	F
Kansas City	MO	90	-10	-15	-30	35	F
Las Vegas	NV	90	-10	--	-30	50	F
Long Beach	CA	90	+10	--	-3	98	A
Los Angeles	CA	90	+10	-5	-3	93	A
Louisville	KY	90	-10	--	--	80	B-
Memphis	TN	90	-10	-15	--	65	D
Mesa	AZ	90	-10	--	-5	75	C
Miami	FL	90	--	--	-15	75	C
Milwaukee	WI	90	+1	--	-15	76	C
Minneapolis	MN	90	+10	--	--	100	A
Nashville	TN	90	-10	--	--	80	B-
New Orleans	LA	90	+1	-5	-20	66	D
New York	NY	90	-5	-3	-20	63	D
Oakland	CA	90	+10	--	-3	98	A
Oklahoma City	OK	90	-10	--	--	80	B-
Omaha	NE	90	-10	-15	-30	35	F
Orlando	FL	90	-10	--	-5	75	C
Philadelphia	PA	90	-10	-15	-10	55	F
Phoenix	AZ	90	-10	--	-25	55	F
Portland	OR	90	-10	--	-30	50	F
Raleigh	NC	90	-10	--	--	80	B-
Sacramento	CA	90	+10	--	-3	98	A
San Antonio	TX	90	-10	-15	-10	55	F
San Diego	CA	90	+10	--	-3	98	A
San Francisco	CA	90	+10	--	-3	98	A
San Jose	CA	90	+10	--	-3	98	A
Seattle	WA	90	+10	--	--	100	A
Tucson	AZ	90	-10	--	-5	75	C
Tulsa	OK	90	-10	--	--	80	B-
Virginia Beach	VA	90	--	-5	--	85	B
Washington	DC	90	10	--	--	100	A

requirements: a criminal background check for drivers and a minimum insurance requirement while carrying passengers. All TNC companies currently have in place some form of driver screening process, so establishing such a requirement in law is not particularly controversial or burdensome. There is a clear and legitimate public-policy interest in preventing convicted criminals or drunk drivers from participating in for-hire vehicle transportation.

With respect to insurance, it is too early to render any definitive judgments about whether TNC-specific frameworks have been properly calibrated. Insurance for the ride-sharing services provided by some TNCs is particularly difficult to parse, due to the blurred lines between traditionally distinct personal and commercial insurance products. A taxi or black car service is rather obviously a commercial enterprise, primarily, and thus fits best under commercial insurance. The same cannot necessarily be said of ride-sharing. Ride-sharing drivers run the gamut from those who drive a few hours a week for extra cash to those engaged in driving as a full-time occupation. Assessing the precise extent to which any driver operates in a commercial capacity is difficult and may require both new insurance products and new regulatory structures to accommodate them.

As R Street Institute Senior Fellow and Editor-in-Chief R.J. Lehmann observed in a recent paper, the cost of commercial insurance can be prohibitive. A commercial policy covering livery services can cost in the range of $8,000-$10,000 annually, putting it beyond the reach of virtually all ridesharing drivers.[7] Forcing casual drivers into a commercial insurance regime could prove an insurmountable barrier, particularly if handled poorly in a legislative framework.

The current consensus among cities that have enacted new TNC-specific rules seems to be a requirement to carry at least $1 million in liability insurance, though there are other important questions that yield inconsistent answers from city to city. For instance, Chicago requires TNCs to maintain $1 million in "primary non-contributory coverage" for all drivers from acceptance to completion of a ride, but specifies no additional necessary coverage beyond existing state minimums for periods when drivers are logged into an app but not carrying passengers. In Minneapolis, an ordinance requires $1 million in coverage whenever a driver is "active," though the precise definition of active does not appear in the bill language.

Perhaps the best example of a bill to strike a balance between competing policy interests comes from California, which passed A.B. 2293 to establish insurance requirements that account for the various stages of a ride. This law is unique nationwide in having gained the support of both TNCs and the state's insurance industry.[8] This compromise was achieved by establishing a sensible operating structure for TNCs, including insurance mandates, while maintaining distinctions between commercial and personal activity for policy requirements. Discussing the bill, R Street's Lehmann wrote:

> The measure enshrines California's Public Utilities Commission as regulator of the TNCs. It also requires TNCs to provide $1 million of liability coverage from when a ride is accepted until a passenger is dropped off.
>
> But as part of a compromise orchestrated by [California Gov. Jerry] Brown's office, the final version of the bill dropped a requirement included in earlier versions that TNCs also provide $750,000 of coverage for any period when the app was turned on, but no ride had yet been accepted. Instead, drivers will be required during such periods to have $50,000 of per-person bodily injury coverage, $100,000 of per-accident bodily injury coverage and $30,000 of coverage for property damage. In addition, TNCs would take out a $200,000 excess policy for their drivers to cover accidents that might pierce those individual policy thresholds.

As TNCs grow in popularity and the aforementioned policies (and others like them) play out, we'll learn a great deal more about how best to foster an insurance environment that protects the public without stifling competition and innovation.

TAXI FRIENDLINESS

To assess taxi regulations, we looked at four key policy areas. We established a base score of 100 and added or deducted points based on the following questions:

1. *Does the city have a medallion or special license requirement?* Many cities, particularly larger ones, have medallion systems or other forms of supplemental licensure that act both to restrict supply and to generate revenue. Proponents justify such systems by claiming entry restrictions encourage competition based on service quality, or that supply limits are necessary to maintain sufficient trip density for drivers. However, economists generally agree that medallions tend to increase rents to owners, not drivers, while also artificially reducing the number of available cabs for passengers.[9] They also suffer from what Mark J.

7. R.J. Lehmann, ""Blurred Lines: Insurance challenges in the ride-sharing market," R Street Institute, October 2014. http://www.rstreet.org/wp-content/uploads/2014/09/RSTREET28.pdf

8. Ibid.

9. Paul Krugman, Robin Wells and Kathryn Graddy, "Essentials of Economics: Second Edition," p. 119, Worth Publishers, 2011. http://books.google.com/books?id=VXpyNs

Perry of the University of Michigan has termed the "perils of financialization." Because they create an ersatz, tradable "property right," medallions generate huge rents for owners at the expense of both consumers, who face higher costs and lower supply, and potential competitors.[10] We deduct 30 points for municipalities with such a structure.

2. *Does the city restrict the number of cabs in operation?* Cities without medallion requirements frequently resort to more direct supply restriction, most often by capping the number of taxis allowed to operate. This artificially restricts supply at levels deemed appropriate (or, perhaps more accurately, politically sustainable) by city officials. Due in part to heavy lobbying by entrenched interests, many cities have held limits below market-clearing levels and thus helped create supply shortages. Where such limits exist, we deduct 20 points.

3. *How burdensome are insurance requirements?* Every city in our analysis establishes some minimum insurance requirements to address questions of liability. To assess how burdensome they are, we determined the mean mandated insurance levels and then calculated to what degree, measured by standard deviations, each city deviated from that average. For cities with unusually high requirements, we used a sliding scale to deduct up to 8.15 points.

4. *Does the city mandate fare structure, vehicle type and dispatch rules?* All 50 cities in our analysis enforced prescriptive fare limitations, dispatch mandates, restrictions on airport pickups and vehicle age limits. These elaborate rules effectively eliminate price competition, suppress supply and degrade service levels. For these complex structures, we deducted 5 points from each city. Note that this analysis does not include airport rules, which tend to be wildly variable from city to city and thus make it difficult to determine appropriate treatment.

Applying the results of these questions to the base score yields a score that translates into a letter grade for taxi regulatory friendliness. The taxi grade accounts for 40 percent of a city's overall score.

Of the three categories evaluated, taxi regulation was the strictest, generating a median score of just 74.7, equivalent to a grade of C. It also generated the lowest standard deviation, indicating cities were more tightly clustered than is the case for limos or TNCs. The highest score achieved was 95, shared by the cities of Indianapolis, Louisville, Mesa, Milwaukee, Raleigh, Tucson and Washington. The lowest score was 62, in Las Vegas.

Perhaps the most pernicious aspect of taxi regulation is the myriad medallion requirements and fleet caps. Fourteen of the 50 cities in our analysis have medallion systems, while another 21 employ simplistic caps on the number of taxis in operation, leaving just 15 that do not artificially constrain supply. As but one example of the effects of such restrictions, often made at the behest of an organized taxi lobby, Minneapolis saw the number of cabs serving its residents more than double, from 373 to 799, after eliminating its cap in 2006.[11] This shift improved taxi availability and took supply management out of the political realm, where special interests have incentive to preserve market share. Proponents of fleet caps, medallions and other restrictions on drivers-for-hire often seek to justify them as necessary to prevent congestion and pollution caused either by an oversupply of drivers or by cabs displacing rides that otherwise would have been taken using public transit.[12] To the extent such concerns are to be taken at face value, they would be better remedied through more narrowly tailored policies that address externalities, such as congestion pricing (experiments with which have been conducted in major cities like London).[13]

LIMO FRIENDLINESS

To assess limousine and livery service regulations, we evaluated five key policy areas. We established a base score of 100 and added or deducted points based on the following questions:

1. *Does the city mandate a minimum wait time, minimum ride time or minimum fare?* Several cities artificially separate the taxi and limousine markets by establishing such rules as mandated minimum wait times to book a limo ride, or minimum ride times or minimum fares for any limo service. These rules prevent price competition and erect wholly unnecessary barriers between customers and potential drivers. They make it difficult or impossible to order a limo on demand. Where such restrictions exist, we deduct up to 30 points, depending on their severity.

5EaHEC&printsec=frontcover&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false

10. Mark J. Perry, "Taken for a Ride by the NYC Taxi Cartel," AEIdeas, June 12, 2012. http://www.aei-ideas.org/2012/06/taken-for-a-ride-by-the-nyc-taxi-cartel/

11. Eric Roper, "A bumper-to-bumper crop of cabs," *Minneapolis Star-Tribune,* May 9, 2012. http://www.startribune.com/local/minneapolis/150704145.html

12. Charles Komanoff, "More taxis mean more traffic," Reuters, Jan. 20, 2012. http://blogs.reuters.com/great-debate/2012/01/20/more-taxis-mean-more-traffic/

13. Transport for London, "Central London Congestion Charging Impacts Monitoring: Sixth Annual Report," Mayor of London, July 2008. http://www.tfl.gov.uk/cdn/static/cms/documents/central-london-congestion-charging-impacts-monitoring-sixth-annual-report.pdf

TABLE 2: TAXI REGULATION SCORES

City	State	Base Score	Fleet Restriction	Insurance Cost	Hostile Regulation	Final Score	Letter Grade
Albuquerque	NM	100	--	-8.15	-5	86.85	B+
Atlanta	GA	100	-20	--	-5	75	C
Austin	TX	100	-20	--	-5	75	C
Baltimore	MD	100	-20	--	-5	75	C
Boston	MA	100	-30	--	-5	65	D
Charlotte	NC	100	-20	--	-5	75	C
Chicago	IL	100	-30	-1.08	-5	63.92	D
Cleveland	OH	100	-20	-0.53	-5	74.47	C
Colorado Springs	CO	100	-20	-2.71	-5	72.29	C-
Columbus	OH	100	-30	-0.53	-5	64.47	D
Dallas	TX	100	-20	-2.71	-5	72.29	C-
Denver	CO	100	-20	-2.71	-5	72.29	C-
Detroit	MI	100	-30	-0.53	-5	64.47	D
El Paso	TX	100	-30	--	-5	65	D
Fort Worth	TX	100	--	-2.71	-5	92.29	A-
Fresno	CA	100	--	-0.53	-5	94.47	A
Houston	TX	100	-20	-0.53	-5	74.47	C
Indianapolis	IN	100	--	--	-5	95	A
Jacksonville	FL	100	--	-0.53	-5	94.47	A
Kansas City	MO	100	-20	--	-5	75	C
Las Vegas	NV	100	-30	-2.71	-5	62.29	D-
Long Beach	CA	100	-20	-1.08	-5	73.92	C
Los Angeles	CA	100	-20	-0.53	-5	74.47	C
Louisville	KY	100	--	--	-5	95	A
Memphis	TN	100	-20	--	-5	75	C
Mesa	AZ	100	--	--	-5	95	A
Miami	FL	100	-30	--	-5	65	D
Milwaukee	WI	100	--	--	-5	95	A
Minneapolis	MN	100	--	-0.53	-5	94.47	A
Nashville	TN	100	-30	--	-5	65	D
New Orleans	LA	100	-20	--	-5	75	C
New York	NY	100	-30	-0.53	-5	64.47	D
Oakland	CA	100	-20	-8.15	-5	66.85	D+
Oklahoma City	OK	100	-20	--	-5	75	C
Omaha	NE	100	--	-2.71	-5	92.29	A-
Orlando	FL	100	-20	--	-5	75	C
Philadelphia	PA	100	-30	--	-5	65	D
Phoenix	AZ	100	--	-0.53	-5	94.47	A
Portland	OR	100	-20	-2.71	-5	72.29	C-
Raleigh	NC	100	--	--	-5	95	A
Sacramento	CA	100	-20	-2.71	-5	72.29	C-
San Antonio	TX	100	-20	--	-5	75	C
San Diego	CA	100	-30	-0.53	-5	64.47	D
San Francisco	CA	100	-30	-0.53	-5	64.47	D
San Jose	CA	100	-20	-0.53	-5	74.47	C
Seattle	WA	100	-30	-0.53	-5	64.47	D
Tucson	AZ	100	--	--	-5	95	A
Tulsa	OK	100	-30	--	-5	65	D
Virginia Beach	VA	100	--	-0.53	-5	94.47	A
Washington	DC	100	--	--	-5	95	A

2. *How burdensome are insurance requirements?* As with taxis, we evaluated minimum insurance requirements by determining the mean and then calculating standard deviations from that mean. For cities with unusually high requirements, we applied a sliding scale to deduct up to eight points.

3. *Are insurance requirements substantially more burdensome than those in place for taxis?* In addition to evaluating insurance requirements relative to the mean, we wanted to determine if the burdens for limos in a given city were substantially higher than those for taxis. When it comes to public safety, there is little difference between taxi and limo services that would justify any significant variation in insurance requirements. To calculate the gap between taxi and limo insurance requirements, we determined a ratio between the two categories. For cities with much higher limo insurance requirements, we deducted as many as five points, using a sliding scale.

4. *Does the city mandate fare structure, vehicle type and dispatch rules?* All 50 cities in our analysis contained some form of prescriptive regulation in one of six categories: fare limitations (including a ban on metered fares), dispatch mandates, restrictions on airport pickups, vehicle age limits and directives to use only certain types of luxury vehicle. These elaborate rules serve to artificially separate the taxi and limo markets, at the cost of restricting supply and degrading service for consumers. For these complex structures, we deducted 15 points from each city. Note that this analysis does not include airport rules, which tend to be wildly variable from city to city and thus make it difficult to determine appropriate treatment.

Applying the results of these questions to the base score yields a score that translates into a letter grade for limo regulatory friendliness. The limo grade accounts for 20 percent of a city's overall score.

The regulatory structure for limos is something of a mixed bag. The scores were very "top heavy," with fully 26 cities sharing the top score of 85. This reflects that they, like all of their counterparts, suffered a 15 point deduction for banning metered fares or engaging in other similar restrictions. The top-scoring cities did not impose high insurance burdens or additional restrictions, like mandated minimum fares or wait times. As a result, the median score was 84.6 (though the mean was lower, at 76.7).

Thirteen cities impose special rules dictating fare or wait minimums, which serve as a barrier between riders and drivers. For example, Portland forces customers to wait a minimum of one hour before a limo may pick them up. In Austin, there is an extraordinarily high minimum fare requirement of $55, while the city also forces consumers to pay for two hours of fare regardless of time or distance traveled. These burdens tend to limit limo usage to the wealthy or for very long hauls, effectively eliminating any competition they might provide to taxi service in a market without such restrictions.

In 21 of the 50 cities, regulators impose insurance requirements that are more burdensome than those in place for taxis. While the trappings of the two services are different, the essential safety question is close to the same. Thus, differing insurance requirements simply serve as an additional burden to make limo service more expensive and less available.

When all three scores are combined, it yields an overall "ride score" for each city that we believe represents the overall friendliness of its transportation regulatory environment. Forty percent of this score is derived from a city's treatment of TNCs, 40 percent from its approach to taxi regulation and 20 percent from its limo rules. Limos represent a smaller share of the overall ride score because they operate in a relatively limited market niche.

The city with the highest ride score in the nation is Washington, with a score of 95 and an A grade. It achieved this by combining one of the better TNC regulatory frameworks in the nation (which still awaits the signature of Mayor Vincent Gray) with a relatively open and recently reformed taxi system and modest limo regulation.

The District of Columbia makes for an interesting case study in responding to the challenges posed by TNCs. Though the DC Taxicab Commission has responded negatively to TNCs and sparked bitter debates before the City Council, the actual legislative response has actually been quite positive toward the services. While some cities used the opportunity to ban these new business models, DC created a sensible regulatory structure around them, while also enacting important reforms to taxi rules to make them less onerous.

The DC structure is relatively simple. It explicitly allows TNCs by creating a new class of for-hire transportation summoned by digital dispatch. It also creates a single operating license for taxis, sedans and limos, and sets some ground rules for price transparency. However, it does *not* include some common restrictions in place elsewhere, such as a fleet cap. Finally, it establishes that any new regulations must address legitimate issues of consumer safety. This is a much more comprehensive model than other cities.

On the opposite end of the spectrum, Las Vegas had the worst ride score in the nation. Its overall score was just 55, for an F grade. It achieved this distinction by combining an extremely harsh approach to TNCs, which are completely frozen out of the market, with perhaps the country's most burdensome

TABLE 3: LIMO REGULATION SCORES

City	State	Base Score	Minimum Ride/Wait/ Fare	Insurance Cost	Insurance Compared to Taxis	Hostile Regulation	Final Score	Letter Grade
Albuquerque	NM	100	--	-8	-1.25	-15	75.75	C
Atlanta	GA	100	-20	--	-5	-15	60	D-
Austin	TX	100	-30	--	--	-15	55	F
Baltimore	MD	100	--	--	-1.67	-15	83.33	B
Boston	MA	100	--	--	--	-15	85	B
Charlotte	NC	100	-20	--	--	-15	65	D
Chicago	IL	100	--	--	--	-15	85	B
Cleveland	OH	100	--	--	--	-15	85	B
Colorado Springs	CO	100	--	-4.98	-2.5	-15	77.52	C+
Columbus	OH	100	--	-0.95	-1.67	-15	82.38	B-
Dallas	TX	100	--	-0.95	--	-15	84.05	B
Denver	CO	100	--	-4.98	-2.5	-15	77.52	C+
Detroit	MI	100	--	--	--	-15	85	B
El Paso	TX	100	--	--	-5	-15	80	B-
Fort Worth	TX	100	-20	-0.95	--	-15	64.05	D
Fresno	CA	100	--	--	-0.42	-15	84.58	B
Houston	TX	100	-30	-0.95	-1.67	-15	52.38	F
Indianapolis	IN	100	--	--	--	-15	85	B
Jacksonville	FL	100	--	--	--	-15	85	B
Kansas City	MO	100	--	--	--	-15	85	B
Las Vegas	NV	100	-20	-8	-5	-15	52	F
Long Beach	CA	100	--	--	--	-15	85	B
Los Angeles	CA	100	--	--	-0.42	-15	84.58	B
Louisville	KY	100	--	--	--	-15	85	B
Memphis	TN	100	--	--	--	-15	85	B
Mesa	AZ	100	--	--	-5	-15	80	B-
Miami	FL	100	-30	--	-5	-15	50	F
Milwaukee	WI	100	--	--	--	-15	85	B
Minneapolis	MN	100	--	--	--	-15	85	B
Nashville	TN	100	-5	--	--	-15	80	B-
New Orleans	LA	100	-15	--	-5	-15	65	D
New York	NY	100	--	--	--	-15	85	B
Oakland	CA	100	--	--	--	-15	85	B
Oklahoma City	OK	100	--	--	--	-15	85	B
Omaha	NE	100	--	-0.95	--	-15	84.05	B
Orlando	FL	100	-30	--	--	-15	55	F
Philadelphia	PA	100	--	-8	-5	-15	72	C-
Phoenix	AZ	100	--	--	--	-15	85	B
Portland	OR	100	-30	-4.98	-2.5	-15	47.52	F
Raleigh	NC	100	--	--	--	-15	85	B
Sacramento	CA	100	--	--	--	-15	85	B
San Antonio	TX	100	-30	-0.95	-5	-15	49.05	F
San Diego	CA	100	--	--	-0.42	-15	84.58	B
San Francisco	CA	100	--	--	-0.42	-15	84.58	B
San Jose	CA	100	--	--	-0.42	-15	84.58	B
Seattle	WA	100	--	--	--	-15	85	B
Tucson	AZ	100	--	--	-5	-15	80	B-
Tulsa	OK	100	-30	--	--	-15	55	F
Virginia Beach	VA	100	---	--	--	-15	85	B
Washington	DC	100	--	--	--	-15	85	B

TABLE 4: COMBINED GRADES

Weighted Vehicle Transportation Regulation Final Scores						
City	State	TNC Grade (40% of final)	Taxi Grade (40% of final)	Limo Grade (20% of final)	Combined Final Score	Final Letter Grade
Albuquerque	NM	65	86.85	75.75	75.89	C
Atlanta	GA	85	75	60	76	C
Austin	TX	95	75	55	79	C+
Baltimore	MD	80	75	83.33	78.67	C+
Boston	MA	80	65	85	75	C
Charlotte	NC	80	75	65	75	C
Chicago	IL	86	63.92	85	76.97	C+
Cleveland	OH	80	74.47	85	78.79	C+
Colorado Springs	CO	100	72.29	77.52	84.42	B
Columbus	OH	76	64.47	82.38	72.66	C
Dallas	TX	75	72.29	84.05	75.73	C
Denver	CO	100	72.29	77.52	84.42	B
Detroit	MI	85	64.47	85	76.79	C+
El Paso	TX	80	65	80	74	C
Fort Worth	TX	80	92.29	64.05	81.73	B-
Fresno	CA	97.5	94.47	84.58	93.7	A
Houston	TX	76	74.47	52.38	70.66	C-
Indianapolis	IN	85	95	85	89	B+
Jacksonville	FL	55	94.47	85	76.79	C+
Kansas City	MO	35	75	85	61	D-
Las Vegas	NV	50	62.29	52	55.32	F
Long Beach	CA	97.5	73.92	85	85.57	B
Los Angeles	CA	92.5	74.47	84.58	83.7	B
Louisville	KY	80	95	85	87	B+
Memphis	TN	65	75	85	73	C
Mesa	AZ	75	95	80	84	B
Miami	FL	75	65	50	66	D
Milwaukee	WI	76	95	85	85.4	B
Minneapolis	MN	100	94.47	85	94.79	A
Nashville	TN	80	65	80	74	C
New Orleans	LA	66	75	65	69.4	D+
New York	NY	62.5	64.47	85	67.79	D+
Oakland	CA	97.5	66.85	85	82.74	B
Oklahoma City	OK	80	75	85	79	C+
Omaha	NE	35	92.29	84.05	67.73	D+
Orlando	FL	75	75	55	71	C-
Philadelphia	PA	55	65	72	62.4	D-
Phoenix	AZ	55	94.47	85	76.79	C+
Portland	OR	50	72.29	47.52	58.42	F
Raleigh	NC	80	95	85	87	B+
Sacramento	CA	97.5	72.29	85	84.92	B
San Antonio	TX	55	75	49.05	62	D-
San Diego	CA	97.5	64.47	84.58	81.7	B-
San Francisco	CA	97.5	64.47	84.58	81.7	B-
San Jose	CA	97.5	74.47	84.58	85.7	B
Seattle	WA	100	64.47	85	82.79	B
Tucson	AZ	75	95	80	84	B
Tulsa	OK	80	65	55	69	D+
Virginia Beach	VA	85	94.47	85	88.79	B+
Washington	DC	100	95	85	95	A

taxi regulations, and among the worst structures for limos as well. The result is a regulatory morass that makes for poor transportation in the city.

The economic threat posed by such oppressive regulation is substantial. Officials already have begun to worry that Las Vegas may lose out on conventions and other major events because of its inadequate transportation services, particularly carrying passengers to and from its major airport.[14] If the city doesn't move to liberalize its transportation controls, including a legal structure for TNCs, it may lose out on millions of dollars in economic activity as more inter-connected cities draw away large gatherings.

A similar story has emerged from Austin, where the *South by Southwest* festival brings some 30,000 visitors and the attendant transportation difficulties. The city's early hostility toward TNCs threatened to eliminate one potential transportation option for attendees, which led companies like Uber to respond by doing some promotional rides for free in an attempt to highlight the need for the service.[15] In October 2014, Austin passed a sensible framework for TNCs that bumped their TNC grade fully 40 points, from 55 (an F) to 95 (an A).[16]

While Las Vegas has the worst overall ride score, it is by no means alone in its harsh treatment of companies like Uber, Lyft and Sidecar or in its poor overall transportation climate. New Orleans is itself something of a poster child for onerous regulation. It is somewhat unique in that it sent cease-and-desist orders to major TNCs *before they ever began operations in the city*. This pre-emptive strike against new transportation services combines with the city's already-harsh taxi and limo climate to yield an overall ride score of just 69.4, a D+ grade.

Another interesting wrinkle comes from New York City, where the city took a novel approach to TNCs that forces even casual ride-sharing drivers to submit to commercial licensure and insurance. Lyft doesn't even operate in the city due to this requirement. The Big Apple also prohibits price experimentation, cracking down on Uber's use of "surge pricing" that raises fares during periods of high demand. While controversial in some circles, with opponents charging that it is "price gouging," demand-based pricing helps supply meet demand more efficiently by encouraging additional drivers to seek out fares when the premium is in effect. When combined with New York's famous medallion requirement and strict limo controls, the city's overall ride score was just 68, or a D+ grade.

The anti-competitive regulations faced by taxis and limos in New York dates back decades. In fact, the modern debate is substantially similar to many that took place in the first half of the 20th century. As the personal vehicle grew in popularity, the first cabs began appearing in cities in the early 1900s. Within a few decades, they had expanded their reach to the point where they began siphoning significant ridership from transit systems, increasing congestion and threatening municipal revenue and union employment. In response, transit unions and other interests began aligning against them in an attempt to regulate them out of existence.

After a flood of new cabbies hit New York streets during the Great Depression, the city introduced the medallion system in 1937, strictly limiting the supply of cabs to 13,566 – about what the city has today.[17] As the only legal means to take part in the lucrative transportation market, medallions have since become a hugely valuable commodity. At their inception, they cost about $10. By 1950, they were trading for an average of $5,000 (roughly $50,000 in today's dollars).[18] In recent years, they have gone for as much as $1 million, a staggering price that suggests many more drivers would like to enter the market.

This artificial restriction of supply feeds directly into the modern fight over TNCs. A license trading in seven figures is a pretty clear indication that more drivers would like to enter the market. As a result, only those with significant resources can do so, which tends to consolidate power in large fleet owners. This generates huge rents for special interests, while freezing out smaller operators and harming consumers by restricting their options.

CONCLUSION

The debate over fundamental regulatory reform today is not too dissimilar from previous iterations, including the "jitney wars" of the mid-20th century and taxi fights in the 1970s and 1980s. Seattle embarked on a reform of its taxi regulation in 1979 that has been the subject of much discussion. The city adopted an open entry system and eliminated most fare controls, a significant move in the direction of a free-market transportation climate. The results provide an instructive case for modern efforts.

14. Richard N. Velotta, "Panelists agree: Las Vegas needs multiple transportation modes," *Las Vegas Review-Journal*, Sept. 18, 2014. http://www.reviewjournal.com/news/traffic-transportation/panelists-agree-las-vegas-needs-multiple-transportation-modes

15. Andrew Weber, "Why Austin's Restricting Uber Over SXSW," KUT News 90.5, March 12, 2014. http://kut.org/post/why-austins-restricting-uber-over-sxsw

16. Calily Bien, "Uber and Lyft gets green light from Austin council," KXAN, Oct. 16, 2014. http://kxan.com/2014/10/16/uber-and-lyft-gets-green-light-from-austin-council/

17. Megan McArdle, "Why You Can't Get a Taxi," *The Atlantic*, April 2, 2012. http://www.theatlantic.com/magazine/archive/2012/05/why-you-cant-get-a-taxi/308942/

18. City of New York, "Taxi of Tomorrow," accessed Nov. 3, 2014. http://www.nyc.gov/html/media/totweb/taxioftomorrow_history_regulationandprosperity.html

Most of the impacts of Seattle's reform were quite positive. According to one analysis, the number of city-licensed cabs rose 21 percent in the two years following its passage and the number of taxi companies rose by nearly 50 percent.[19] Vehicles licensed to pick up at the airport rose even more dramatically, from roughly 35 to more than 200. While fare impacts were harder to assess due to the reform period, which coincided with steep inflation, prices seem to have dropped modestly in real terms, settling some 11 percent below the level expected had the city's fare controls continued. Finally, license values dropped from as high as $12,000 to near-zero, reducing substantially an entry barrier for new providers.

The reform wasn't all sunshine and roses, however. Significant disruption occurred at the airport, where captive audiences and a glut of cabs made pricing difficult for both consumers and providers. Much of this is attributable to the challenge of creating an appropriate queueing system for cabs and a lack of price transparency, which was later addressed when the city required clear posting of rates. Some experimentation with cooperative supply management models seems to have addressed the most pressing issues. This should provide an impetus for modern lawmakers to acknowledge the differential effects in hail, stand, analog dispatch and now digital dispatch markets.

Many cities also have debates surrounding the extent to which TNCs should be required to operate wheelchair accessible vehicles or cater to other special needs customers. While it isn't yet clear what the net impact of TNCs, and ride-sharing in particular, will be for those with disabilities, many of the individual companies are already offering such services of their own volition. Uber operates wheelchair-accessible vehicles in some select markets through their UberWAV service and also has moved to provide family-friendly vehicles with child seats, aimed at remedying the problem facing parents who need safe urban transportation with their kids.

Cities should avoid the impulse to erect unnecessary barriers when crafting TNC rules. While safety and insurance requirements are perfectly reasonable, some municipalities have layered on requirements to obtain extraneous permits or licenses, which can serve as a de facto fleet cap in cities with unfriendly regulatory bodies. These requirements are often pitched as necessary to reduce traffic or pollution, but those goals may be better served by other, more targeted policies like congestion pricing. By avoiding some of these pitfalls, cities can ensure that all operators benefit from even-handed rules that serve the public interest and promote vigorous competition.

This comprehensive review shows that policymakers have much work to do to create a comprehensible regulatory structure that fosters competition both *within* each category of provider and *between* each of the provider categories. The goal of elected officials shouldn't be some artificial "balance" between competing business models, but rather a simple set of rules that appropriately protects the legitimate public interests of safety and health, while allowing providers of all sorts to innovate. Our hope is that this analysis can provide cities a road map to a system of simple, fair and modest regulation that will allow transportation services to flourish.

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19. Richard O. Zerbe Jr., "Seattle Taxis: Deregulation Hits a Pothole," *Regulation: AEI Journal on Government and Society*, November/December 1983. http://object.cato.org/sites/cato.org/files/serials/files/regulation/1983/12/v7n6-6.pdf