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# Entrepreneurship, innovation, and political competition: How the public sector helps the sharing economy create value

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**Research Summary:** With the recent growth of the sharing economy, regulators must frequently strike the right balance between private and public interests to maximize value creation. In this article, we argue that political competition is a critical ingredient that explains whether cities accommodate or ban ridesharing platforms and that this relationship is moderated in more populous cities and in cities with higher unemployment rates. We test our arguments using archival data covering ridesharing bans in various U.S. cities during the 2011–2015 period. We supplement these data with semistructured interviews. We find broad support for our arguments while mitigating potential endogeneity concerns. Our study has important implications for nonmarket strategy, entrepreneurship and innovation, and public-private partnership literatures. In addition, our findings inform policy debates on the sharing economy.

**Managerial Summary:** Entrepreneurs and businesses oftentimes face severe regulatory barriers when commercializing innovative products and services even if the innovations are generally beneficial for consumers and the broader society. This research focuses on the political determinants of regulation to provide a better understanding of why some markets are more receptive to innovative products while other markets are more hostile to them. Using the banning of ridesharing companies (e.g., Uber and Lyft) in various U.S. cities during the 2011–2015 period, we find that elected politicians facing less political competition (i.e., not easily replaceable, serving multiple terms, longer tenure in office) were more likely to ban ridesharing companies and favor, potentially displaceable, local taxicab companies. Our research has implications for navigating the political barriers to entry.

**KEYWORDS**

entrepreneurship, entry response, nonmarket strategy, platform-based markets, political barriers to entry, political competition, sharing economy

**1 | INTRODUCTION**

There are many ways in which public and private organizations work together to create value. For example, government investment in basic R&D has helped firms in the private sector commercialize innovative products based on that R&D (Jaffe & Lerner, 2001; Mowery & Simcoe, 2002). Another prominent way the government can affect value creation (and value appropriation) is through the institutional framework it creates. Institutions embody the “rules of the game” in society and set the stage for businesses that are competing in the marketplace (North, 1990). Therefore, having the “right” institution in place fosters entrepreneurship, innovation, and growth (Acemoglu & Johnson, 2005; Armanios, Eesley, Li, & Eisenhardt, 2017; Dorobantu, 2010; Eesley, 2016; Williamson, 1985). In principle, governments use regulations and other policies to align private and public interests to promote the public welfare.

In practice, however, regulations are sometimes designed as barriers to entry by innovative entrepreneurs, potentially decreasing public welfare (Peltzman, 1976; Stigler, 1971). In this regard, the nonmarket strategy literature argues that incumbent firms actively attempt to shape the regulatory environment through lobbying and/or other nonmarket strategies to ensure that the rules of the game work in their favor when faced with competition (Baron, 1995b; Baron, 2012; De Figueiredo, 2009; Hillman & Keim, 1995). Alternatively, the political science literature stresses that competition from political rivals can shape the actions taken by government regulators (e.g., Ansolabehere, de Figueiredo, & Snyder, 2003; Spiller, 2008; Weingast, 1995). Along these lines, the previous empirical literature—notably the nonmarket strategy literature focusing on regulated energy markets (e.g., Fremeth & Holburn, 2012; Holburn & Vanden Bergh, 2014)—has shown that political competition can indirectly benefit consumers by affecting incumbent firms’ market and nonmarket strategies. Thus, the previous literature has illuminated the effects of political competition on market outcomes resulting from rivalry among existing firms. However, the direct effects of political competition on entrepreneurship and innovation, which can also benefit consumers, have remained largely unexplored.

In this article, we argue that political competition can force government regulators to weight the public welfare more heavily and to undertake corresponding actions that accommodate entrepreneurial entry, thereby benefiting consumers. We study this issue in the context of the sharing economy and empirically ground our hypotheses in this setting. The sharing economy, also referred to as the peer-to-peer or collaborative economy, is a phenomenon based on a class of economic arrangements in which participants use a digital platform (such as Uber, Airbnb, Upwork, etc.) to share access to—rather than having individual ownership of—certain products or services (Sundararajan, 2016).<sup>1</sup> We

<sup>1</sup>There is no set definition of the *sharing economy*, although many scholars have provided their own definitions and have proposed other labels that capture similar aspects. For example, Sundararajan (2013) used the term *peer economy* to describe digital marketplaces

draw from the strategy and political science literatures to develop novel hypotheses that are, following the tenet of *engaged scholarship* proposed by Van de Ven (2007), also supplemented with semi-structured interviews and first-person experiences.<sup>2</sup> We test the hypotheses using archival data on ridesharing bans in various U.S. cities over the 2011–2015 period. We find broad support for our argument while mitigating potential endogeneity concerns through multiple econometric approaches and robustness tests.

Our article makes several contributions. First, our theoretical arguments and empirical findings highlight that political competition provides many benefits in our context. Notably, political competition is a critical ingredient that allows public and private organizations to create value together (Klein, Mahoney, McGahan, & Pitelis, 2010; Mahoney, McGahan, & Pitelis, 2009). Second, we contribute to the nonmarket strategy literature by studying the role that supply-side competition has played in shaping market outcomes. The extant nonmarket strategy literature tends to emphasize competition between incumbent firms for political favors—what Bonardi, Hillman, and Keim (2005) called “demand-side competition”—leaving what the authors call “supply-side competition” relatively underexplored. Third, we provide an in-depth account of ridesharing platforms in the sharing economy.<sup>3</sup> This account considerably improves our understanding of how the sharing economy functions and directly contributes to the current policy debate regarding the sharing economy. The recent rise of the sharing economy has led thought leaders, policymakers, and practitioners to debate the appropriate role for government regulators in accommodating (or preventing) the entry of innovative, yet disruptive, entrepreneurial firms (e.g., Cannon & Summers, 2014; Council of Economic Advisers, 2016; Pathe, 2014; Rogers, 2015; Sundararajan, 2016). We add to this debate by highlighting the critical role played by political competition in such contexts. Finally, the insights from our specific empirical setting—the sharing economy—have broader implications for entry and entrepreneurship. In the concluding section, we discuss in more detail how these insights are particularly valuable both for new market entrants (i.e., entrepreneurial firms) and for the public-private partnership literature.

The remainder of our article is organized as follows. We describe the empirical setting—ridesharing platforms (e.g., Uber, Lyft) in the sharing economy—before developing our hypotheses, describing our data, and discussing our results. We intentionally ground our hypothesis development in our empirical setting to obtain a better understanding of the expansion process of ridesharing platforms while exploiting the rich insights from our interviews. In the discussion section, we explore the ways in which our findings are likely to generalize to other settings.

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that allow for the easy trade of disaggregated assets, such as a few days in an apartment or a ride in a car. Eckhardt and Bardhi (2015) proposed the term *access economy* to describe activities that enable consumers to access or pay to benefit from (currently) unused assets, such as homes, cars, and craft goods, that would otherwise be left idle without being put to productive use. This definition may more accurately reflect the history of how many sharing economy platforms arose: These platforms facilitated transactions for the use of idle goods and services that were not otherwise available.

<sup>2</sup>One of the authors of this article registered as a driver-partner at both Uber and Lyft to understand the driver screening process and to acquire firsthand experience as a driver to provide nuances about and insights into ridesharing platforms (i.e., our context of the sharing economy). We believe the scholarly approach in this article is not only an example of Van de Ven’s (2007) notion, but also goes above and beyond in the area of “engaged scholarship.”

<sup>3</sup>A detailed description of our empirical context is based on publicly available sources, such as the *Factiva* news database, augmented by insights obtained from semistructured interviews with various stakeholders, including city officials; the Taxicab, Limousine & Paratransit Association (TLPA); Uber’s senior managers at various regional offices; the operations manager at Curb (company that provides a software application to order taxis); and a member of the top management team at Lyft.

## 2 | EMPIRICAL SETTING

### 2.1 | Ridesharing platforms

We study the sharing economy with a particular emphasis on ridesharing platforms (e.g., Uber, Lyft). Sharing economy platforms provided by entrepreneurial firms are playing a growing role in creating value and delivering innovation to the marketplace.<sup>4</sup> Sharing economy platforms offer products and services similar to those offered by traditional businesses, but they deliver these services differently—and often more efficiently—using innovative technology-based business models (Lamberton & Rose, 2012; Sundararajan, 2016). Technology reduces transaction costs, making sharing assets cheaper and easier than ever and possible on a much larger scale.

By many accounts, the emergence of sharing economy platforms appears to be welfare-enhancing. There is substantial evidence suggesting that ridesharing platforms, in particular, offer consumers many benefits. For example, there is some evidence that ridesharing platforms are associated with fewer accidents. A recent study found that the entry of UberX in California was strongly associated with a reduction in alcohol-related motor vehicle homicides (Greenwood & Watal, 2017). The authors estimate that complete implementation of UberX across the United States would save taxpayers \$1.3 billion and approximately 500 lives annually. In addition, Cohen, Hahn, Hall, Levitt, and Metcalfe (2016) used surge pricing data from UberX to estimate that the platform creates almost \$7 billion annually in consumer surplus in the United States.<sup>5</sup> Furthermore, Hall and Krueger (2018) documented that Uber's driver-partners enjoyed significant supply-side labor market benefits, including flexible working hours and attractive compensation levels.<sup>6</sup> Hence, the recent surge in popularity of sharing economy platforms is largely attributable to increased benefits that users enjoy relative to their traditional counterparts.<sup>7</sup>

The most prominent of these sharing economy platforms is Uber. Uber enjoyed a private market value of \$62.5 billion dollars as of June 2016 (Konrad, 2016) and was on track to top \$1.5 billion in annual revenue worldwide in the same year (Carson, 2016).<sup>8</sup> Thus, Uber's successful expansion is an important case that merits better elucidation because of its weighty impact on the burgeoning sharing economy and on society as a whole. A better understanding of the political and product market responses to Uber provides a window into more general interactions among politicians, incumbent firms, and new entrants.

### 2.2 | Expansion of ridesharing: The case of Uber

This section provides an overview of Uber's business model, which is similar to that of other ridesharing platforms, and draws on numerous interviews, first-person experience, archival accounts, and studies by other researchers.

Uber develops, markets, and operates the Uber mobile application software ("app"), which allows consumers with smartphones to submit a trip request that is sent automatically by the software to the

<sup>4</sup>In terms of revenue, according to a 2014 study by PricewaterhouseCoopers (PwC), the size of the sharing economy was approximately \$15 billion at that time, but was projected to reach \$335 billion in global revenue by 2025 (PwC, 2014).

<sup>5</sup>This estimate of consumer surplus is two times larger than the revenues received by Uber driver-partners, which was substantial, and six times greater than the revenue captured by Uber (Cohen et al., 2016).

<sup>6</sup>Our period of study predates Uber's recent, well-publicized struggles.

<sup>7</sup>According to one social media sentiment study conducted by NetBase, a market research company, consumers "love" Uber but not taxis: <http://www.web-strategist.com/blog/2013/07/30/people-love-uber-but-not-taxis/>.

<sup>8</sup>By way of comparison, the total revenue of the U.S. taxi and limousine service industry was approximately \$6.6 billion in 2012, according to census data.

Uber driver-partner nearest the customer, alerting the driver to the customer's location. This process contrasts sharply with typical taxi rides, where riders must hail a cab on the street or wait at designated passenger pick-up locations. For customers, the response from Uber is immediate and has a predictable waiting time based on real-time updates of the driver's location; for drivers, the time and fuel spent searching for customers are minimized. An Uber driver with his or her own personal car will come pick up the customer and drive to the requested destination. The app automatically determines the navigational route for the driver and calculates the distance and fare. Unlike taxis, Uber has price flexibility, and rates can thus vary by time of day or by real-time supply and demand conditions, which enables supply and demand to effectively readjust.<sup>9</sup> Uber instantly processes all payments, charging the passenger's credit card that is already saved with the app, taking a cut for itself, and then direct depositing the remaining money into the driver's account, all in the background and completely cashless. On completion of the trip, the app sends a receipt to the rider via email, and the customer and the driver can rate one another as part of Uber's reputation-based self-regulating mechanism. If drivers garner too many unfavorable reviews, they can be barred from working for Uber, and passengers with particularly negative reputations may be banned from using Uber.

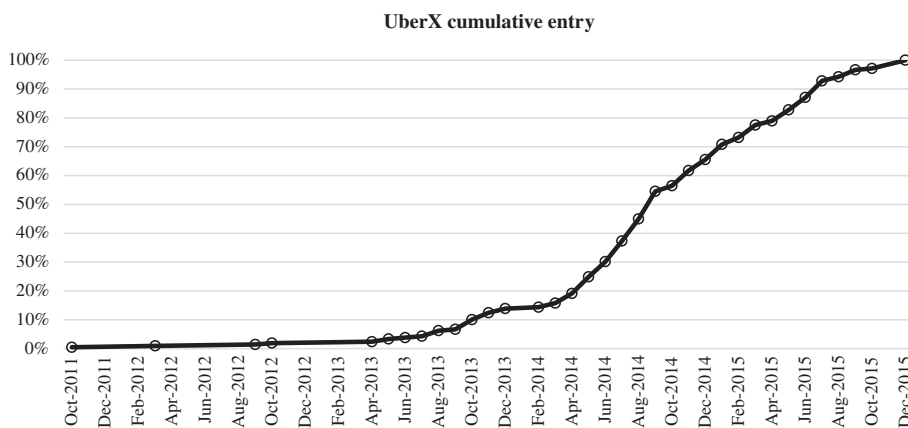
Although Uber first began offering its services in May 2010,<sup>10</sup> it gained popularity and grew rapidly only after it later began offering UberX, its low-cost peer-to-peer ridesharing service (Tsotsis, 2012). UberX requires no professional licenses from its driver-partners, thereby democratizing the marketplace for for-hire transportation (Ranchordás, 2015), and offers substantially lower prices to customers than standard taxi fares, which led to its rapid growth over a very short period of time (Hall & Krueger, 2018). Uber treated UberX as its marquee service and used it to rapidly expand to cities of all sizes. Figure 1 depicts UberX's cumulative entry into various U.S. cities over the 2011–2015 period and shows that the vast majority of market entries occurred between the summer of 2013 and the summer of 2015: 90% of the markets were covered within this two-year period. Lyft, a competing ridesharing platform in the U.S. market, quickly followed suit and expanded rapidly. Apparently, the number of new cities added to Uber's operation slowed somewhat at the end of 2015 as a result of saturation.

The expansion of ridesharing companies such as Uber required a city-by-city approach, but occurred relatively quickly because it required only activating the relevant app in the new city and recruiting local driver-partners. According to our interviews, whenever Uber enters a new city, Uber views each city operation as its own startup, and a "launch team" implements the entry based on a "playbook," which contains all the best practices for entering a new city (e.g., how to search for local managers, initiate effective marketing events, and recruit the initial supply of driver-partners). The launch team typically spends approximately eight weeks in a city to get the business up and running, sometimes less, and sometimes as little as four days (Smith, 2014). The launch team recruits a team of talented managers interested in operating the business in that city over the long term, frequently hiring top managerial talent from the local community. These newly recruited local managers

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<sup>9</sup>This is known as Uber's surge pricing system. Although Uber was much criticized for its surge pricing because far too many people equated it with price gouging (Dholakia, 2015, 2016), Cachon, Daniels, and Lobel (2017) used a formal model and analytically show and conclude that, in contrast to popular criticism, all stakeholders can benefit from the use of surge pricing on a platform with self-scheduling capacity. Uber increases profits relative to a fixed-pricing scheme, and both driver-partners and consumers are better off with surge pricing because drivers are better used, and consumers benefit both from lower prices during normal demand and expanded access to service during peak demand.

<sup>10</sup>Uber's app was originally developed to connect riders to limousine drivers of black "luxury" cars, whose fares were substantially higher than those of regular taxi rides (Graham, 2011). This service, which was later renamed UberBLACK, competed directly with the traditional chauffeured limousine business, which is typically regulated at the state level (e.g., the California Public Utilities Commission).



**FIGURE 1** UberX cumulative entry function. *Note.* The expansion of UberX had a slow start at the beginning but had explosive growth between the summer of 2013 to the summer of 2015 (i.e., 90% of markets covered during this time period); this growth started to slow down, apparently because of saturation. This graph shows market entry into all  $N = 208$  U.S. markets in our data set

regularly work with local regulators to better explain what Uber is and to promote how the city can benefit from Uber's business as regulators are generally not knowledgeable about Uber's business.<sup>11</sup>

Before officially offering its service to customers in the city, Uber typically spends three to four weeks recruiting the initial supply of drivers. These Uber driver-partners are generally younger and more highly educated than taxi drivers or chauffeurs (Hall & Krueger, 2018).<sup>12</sup> Once an initial supply of drivers is secured, Uber launches its service and pursues consumers with various marketing efforts, including word-of-mouth marketing, promotions, discounts, and even various publicity stunts (Brandesky, 2015). Over time, the increasing network of consumers attracts more drivers, and in turn, the increasing size of the driver network attracts more consumers, enabling the successful entry of the two-sided platform (Eisenmann, Parker, & Van Alstyne, 2006; Rochet & Tirole, 2003, 2006; Zhu & Iansiti, 2012).

According to our interviews, Uber's expansion strategy was primarily focused on launching its platform in economically large cities first (e.g., San Francisco, Los Angeles, and New York) and then rapidly expanding to all cities before its competitors, with the goal of quickly becoming the largest network. One of Uber's regional managers told us that they were quite surprised at how much (adverse) politics played a role in rolling out their business, but they were confident over the long run because Uber was tremendously popular and much of its political adversity was based on regulators' misunderstandings of their business.<sup>13</sup>

Because Uber's expansion and entry was unprecedentedly rapid (Figure 1), our setting mitigates some potential endogeneity concerns. For example, these concerns might include (unlikely) stories

<sup>11</sup>Notably, Uber typically does not approach the local government and ask for permission before entering a city. According to our interviews, Uber was focusing on expanding rapidly and typically worked with the local government ex post entry, particularly when regulators were hostile or fundamentally misunderstood Uber's business model.

<sup>12</sup>According to Hall and Krueger (2018), nearly half of Uber's driver-partners (48%) have a college degree or higher, considerably higher than the corresponding percentage for taxi drivers and chauffeurs (18%) and even above that for the workforce as a whole (41%).

<sup>13</sup>We also asked another Uber regional manager whether taxi companies' "political muscle" in a given city was ever a factor in deciding whether or when to enter a city. The answer was "No. We never thought about that. We were only concerned about the market size or income level (referring to UberBLACK). Maybe we should have thought about it when Uber first started, but at this point (December, 2014), it is irrelevant because we expect hostility from taxi companies and regulators everywhere anyway."

such as the local government implementing a tougher tax regulation in anticipation of the emergence of ridesharing companies or the local taxicab industry supporting a mayoral candidate who is particularly hostile to ridesharing companies in getting elected.<sup>14</sup> In addition, because the taxicab industry is heavily regulated, it cannot revert to market strategies such as pricing, capacity expansion, or advertising in fending off the entry of Uber, but instead, must rely almost exclusively on lobbying local government for favorable regulatory outcomes. Thus, our setting helps us understand how the lobbying efforts of local taxicab industries are effectively channeled to achieve the desired regulatory outcome based on the degree of political competition.

The successful entry of ridesharing platforms obviously represented a direct competitive threat to the traditional taxicab industry. Indeed, many taxicab companies experienced significant declines in profitability, and some even went out of business (Corrigan, 2016). The taxicab business has historically been heavily regulated by local government, which makes each city a geographically and legally segregated market (Kitch, Isaacson, & Kasper, 1971; TLPA, 2014). In most cases, city ordinances, which are typically approved and signed by the mayor after the city council deliberates on new proposals, regulate the local taxicab industry. Regulation is enacted with the intention of achieving various social goals including promoting public safety, reducing accident rates, curtailing air pollution, avoiding a painful level of road congestion, preventing consumer exploitation, securing proper level of insurance coverage, and so on, that would not otherwise be achieved by implementing many rules, such as fingerprint background checks for screening taxi drivers, mandatory driver safety training, regular automobile safety and maintenance inspections, having a limited number of taxicabs (e.g., medallion system), fixed-fare pricing using a predictable formula, and adequate commercial-grade insurance (Cairns & Liston-Heyes, 1996; Rawley & Simcoe, 2010, 2013; Shreiber, 1975). Accordingly, taxicab companies have complained that, despite competing for the same customers, ridesharing companies represented unfair competition as the companies and their driver-partners were not abiding by the same regulations, and thus, enjoyed lower costs (Lien, 2015a; Pathe, 2014).<sup>15</sup>

Regulators took various approaches in dealing with ridesharing platforms on their entry. Immediately after ridesharing companies began their operations, some cities became hostile to their entry (going so far as to ban them), initiating some or all the following actions: fining ridesharing companies, fining or arresting their driver-partners, sending cease-and-desist letters, filing lawsuits against them, or implementing new regulations that ridesharing companies claimed were “too onerous”<sup>16</sup> because they resembled existing taxi regulations (Taylor, 2016).<sup>17</sup> In these hostile markets,

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<sup>14</sup>In fact, in our data, there was no mayoral election that took place between the time Uber entered a city and the time when the local government made its initial response to Uber's entry. Mitigating endogeneity concerns can be less accurate in later years, especially after 2015, because Uber's rapid ascent and confrontations with municipal policymakers were well publicized at the national level. This is one reason our analysis only uses data until 2015. We discuss other reasons in our following data and methods section.

<sup>15</sup>In response, ridesharing companies claimed that they have already instituted, arguably, a more effective set of their own rules (e.g., background check using a third-party company, reputation-based driver/rider rating system, etc.) to ensure adequate level of public safety. In addition, they claimed that they should not be legally subject to for-hire transportation regulations governing the taxi industry because they were registered as technology companies that merely facilitated matching supply and demand without owning any fleet vehicles. To avoid such possible controversy in legality, many cities implemented new regulations specifically for governing ridesharing companies.

<sup>16</sup>According to our interviews, in most cases, Uber cited fingerprint-based background checks using FBI and state databases (which taxi drivers must also pass) as the most onerous rule because it significantly delays the process of recruiting drivers. Drivers must make an appointment with the local police station to get fingerprinted, and it can take another four to eight weeks to receive the results. By contrast, Uber uses a third-party vendor called Checkr that has a seven-year look-back limit on certain records, meaning they cannot include any criminal records from more than seven years ago. Uber's background check can be completed in two to four days.

<sup>17</sup>To a lesser extent, requiring all ridesharing driver-partners to purchase commercial-grade insurance, as some cities did, was a burden according to our interviews.



ridesharing companies such as Uber or Lyft had no choice but to exit.<sup>18</sup> Other cities accommodated ridesharing platforms, and in some cases, instituted new (non-onerous) regulations reflecting many suggestions from the ridesharing companies and officially legalizing their operations.<sup>19</sup>

In summary, despite the growing popularity of ridesharing platforms and the many consumer benefits they offer, regulators have been aggressively banning ridesharing platforms in some—but not all—cities, which is particularly puzzling because the incentives for policymakers and sharing economy firms are often aligned (Cannon & Summers, 2014). Although it was not surprising that local taxicab companies fiercely opposed ridesharing companies because of the disruptive nature of their innovative business model, such opposition was ubiquitous across all U.S. cities. More surprising was the heterogeneous response to ridesharing platforms on the part of local regulators. Why do some markets refuse the entry of ridesharing platforms that users love, whereas other markets embrace them? In the next section, we draw from the nonmarket strategy and political science literature to explain this heterogeneous response.

### 3 | HYPOTHESES

Public sector regulators play an important role in shaping the rules of the game between private sector rivals (Baron, 1995a, 1995b; Baron, 2012; Hillman, Keim, & Schuler, 2004). Knowing this, private sector rivals compete with each other not only for product market outcomes but also for attaining favorable regulatory outcomes in the market for public policy. A firm's capabilities in product market competition may also complement its political capabilities (Jia & Mayer, 2016).

Much of the nonmarket strategy literature focuses on the strategies and outcomes involved in this demand-side competition (e.g., De Figueiredo & Edwards, 2007; Holburn & Vanden Bergh, 2014; Holburn & Zelner, 2010; Macher & Mayo, 2015), while focusing less on supply-side competition in the government-business interface (Bonardi et al., 2005).<sup>20</sup> Hillman and Keim (1995) described the demanders of public policy as those individual voters and economic, social, and political organizations (including businesses) seeking specific public policies, and suppliers of public policy as those government workers, such as elected officials, making public policy decisions. Supply-side competition is political rivalry between an elected official and a potential replacement that is based on being elected and re-elected (Bonardi et al., 2005). Because elected officials are continually threatened with being challenged in the next election, they remain motivated to be responsive to voters' interests even after being elected (Bonardi et al., 2005). For example, an official may be up for election and face a potential replacement if a particularly strong candidate emerges to run against her. Politicians facing less intense political competition may be re-elected with relative ease, and consequently, serve multiple terms in office.

The political science literature has devoted more attention to supply-side competition and the type of public policy supplied (Black, 1972; Musgrave, 1959; Qian & Weingast, 1997; Tiebout, 1956). It generally finds that competition between politicians tends to lead to good outcomes for the public,

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<sup>18</sup>According to our interviews and archival data, although there were some cities in which both Uber and Lyft exited after these instances, in many cases, Lyft was more compliant and exited from these cities as ordered, whereas Uber did not, which was, in part, because Uber had more financial resources to withstand hostile actions from city regulators (e.g., appeal in court and "buy time") while continuing to gain popularity in the city.

<sup>19</sup>Note that subsequent to municipal government's initial regulatory response, many *states* started to adopt a more "accommodative" approach to ridesharing platforms (e.g., Nevada, Colorado, and Virginia), and these state-level rules supersede local municipal ordinances.

<sup>20</sup>A notable exception is Choi, Jia, and Lu (2015), who showed that lobbying is less effective when the structure of political institutions encourages greater political competition.

whereas lack of competition leads to outcomes benefiting only the politician or narrowly focused interest groups (Acemoglu & Robinson, 2006b; Besley, Persson, & Sturm, 2010; Olson, 1982; Stigler, 1972; Weingast, 1995). The basic argument is that elected officials facing (or expecting to face) greater political competition from rivals will be more likely to institute policies that provide public benefits as a way to build reputation and secure votes from the broader public because of re-election concerns (Besley & Case, 1995). According to Tirole (1994) and Besley and Case (1995), reputation and career concerns are particularly important incentive devices in the public sector because monetary reward schemes are less likely to be high powered than those in the private sector. Officials who care to run again for office, either because of the rents that they receive while in office or because of the influence that they wield in determining policy, must act sufficiently often in the voters' interest to merit re-election. Therefore, political competition is a mechanism that helps align public sector behavior with public welfare outcomes (Barro, 1973), and can lead public officials to take actions that benefit consumers.<sup>21</sup> This argument is consistent with a recent study by Coviello and Gagliarducci (2017) showing that an increase in tenure in office by elected politicians causes "worse" procurement outcomes for the public, suggesting that a longer time in office potentially leads to a higher probability of collusion between government officials and local businesses in Italy. In sum, politicians facing less political competition are more likely than politicians facing greater political competition to institute policies that favor narrowly focused interest groups over the broader public.<sup>22</sup>

In our setting, elected politicians, such as mayors, can shape the regulatory environment for local businesses. For example, mayors have formal authority to approve or veto new legislation regulating local businesses. Elected mayors may often matter in a subtler way by appointing or removing department heads, who can affect how existing laws and regulations are interpreted and enforced. Depending on the form of government, mayors can also serve on the city council (frequently as the chair), vote in council meetings, appoint council members to chair or serve on committees, and appoint citizens to serve on advisory boards or commissions.<sup>23</sup> Thus, firms heavily regulated by the municipal government (e.g., taxicab companies) have an incentive to continuously invest in developing relations with the political leader and the local government (Hillman & Hitt, 1999) because of a variety of benefits that may accrue to those firms that successfully create a linkage with them in the form of information, access, influence, reduced uncertainty and transaction costs, and so on. (Hillman, Zardkoohi, & Bierman, 1999).

Mayors may favor local businesses over new entrants when local businesses have formed a strong relationship with the mayor. A relational tie between a mayor and local business is more likely to form and grow stronger as the tenure of the mayor increases, which enables local business to effectively use nonmarket strategies for its preferred regulatory outcome (Bonardi et al., 2005; Hillman et al., 2004; Hillman & Hitt, 1999). For example, a strong relationship may allow representatives of the taxicab industry to be familiar with the mayor's inclinations and enable them to effectively present a case before the mayor, emphasizing the benefit of the local business, such that he or she does not feel it is worth taking a risk in accommodating an unproven business (no matter how innovative it is), particularly if there are concerns about public safety, job destruction, and uncertainty regarding how much the new entrant can contribute to city tax revenue, if at all.

In other words, for a given level of taxicab companies' lobbying efforts or for a given amount of resources taxicab companies invest in general for nonmarket strategy purposes, stronger relationships

<sup>21</sup>More generally, political competition is one of many mechanisms that helps address the "guarding the guardians problem" (Cabral & Lazzarini, 2015).

<sup>22</sup>This statement does not mean that politicians facing less political competition cannot use their entrenched power to deliver good outcomes for the public. It is only a statement about the tendency of politicians facing less political competition compared to politicians facing greater political competition.

<sup>23</sup>National League of Cities (<http://www.nlc.org>).

formed during a longer mayoral tenure may allow taxicab companies to more readily instill their preferences into the mayor's policy orientation. The relationship can be further enhanced when organized coalitions such as the local taxicab commission can secure votes for the mayor more effectively than the dispersed, unorganized public. Thus, compared to mayors facing greater political competition, it is more likely that mayors facing less political competition will favor local businesses unless there is sufficient benefit from taking chances and accommodating the new entrant.

As described in our empirical setting, ridesharing companies such as Uber and Lyft provide many benefits to consumers. Thus, all else being equal, we expect that higher levels of political competition lead public officials to put increasingly more weight on consumer benefit, which reduces incentives for them to ban ridesharing companies. Banning these companies would potentially lead to worse outcomes for consumers, putting public officials at risk of losing popularity and being voted out of office. Conversely, in markets with less political competition, it is more likely that public officials will ban ridesharing platforms, all else being equal. Stated more formally:

**Hypothesis 1 (H1)** *Less political competition leads to a higher probability of banning ridesharing platforms.*

The effect of political competition on regulatory outcomes may differ depending on the market characteristics that relate to either side of the two-sided ridesharing platform (Seamans & Zhu, 2014; Zhu & Iansiti, 2012). We consider two settings that may moderate the effect in Hypothesis 1. On the one hand, we consider the number of potential consumers. On the other hand, we consider the labor market conditions for potential drivers.

Although political competition can lead to better policy outcomes for the public in general, political competition is not a panacea. For example, Coate and Morris (1995) showed that even with political competition, in environments with high uncertainty and uninformed voters, the public can obtain policy outcomes that tend to favor special interest groups. Voters are generally uninformed because the cost of acquiring information about complex issues (e.g., the cost-benefit analysis of accommodating ridesharing platforms in the city) outweighs the benefit of exercising one vote. Thus, the implicit assumption is that the vast majority of average voters lack (or do not pursue) information on policy issues that are particularly relevant to special interest groups. However, Wittman (1989) showed that even if a lack of information or biased information lead some individuals to make incorrect choices, "the law of large numbers is likely to yield the correct majority choice" (p. 1402), on average, arguing that it is difficult to constantly fool voters or keep them uninformed about a complex issue that only special interest groups care about.

In our setting, we expect cities with a larger population to have institutional arrangements that mitigate such asymmetric information and put mayors in check even if they face less political competition, all else being equal. In these markets, there is a large enough population to draw from to find either an outspoken interest group that advocates for consumers and helps rectify information asymmetry or an expert who rebuts the arguments the taxi commission presents (e.g., providing expert opinion about the consumer benefits that ridesharing platforms offer to the city). In larger cities, it may also be easier to form (or find) an organized group with sufficient size and expertise to put additional pressure on elected politicians that may affect their popularity (e.g., obtaining thousands of signatures for an online petition<sup>24</sup> or organizing a sizable protest to get national media attention). In

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<sup>24</sup>For example, when New York was considering whether to permanently ban Uber, thousands of citizens quickly signed online petitions and emailed city council members at Uber's behest, arguably tipping the outcome. (For more detail, see this July 2015 article in TechCrunch: <https://techcrunch.com/2015/07/16/uber-launches-de-blasios-uber-feature-in-nyc-with-25-minute-wait-times/>). This type of effort is easier and quicker in larger cities than in smaller cities.

addition, for larger cities, an ill-advised policy may garner broad media coverage that increases awareness, which can subsequently allow opposing candidates to have the upper hand in future elections (by informing voters of the incumbent politician's ineffectiveness) or prominent independent figures to emerge as alternative candidates. Stated more formally:

**Hypothesis 2 (H2)** *The effect of Hypothesis 1 is attenuated in cities with larger populations.*

Elected officials need to focus on outcomes, not promises (Ferejohn, 1986). Indeed, Ferejohn (1986) referenced a Kansas farmer who asks a politician "But what have you done for me lately?" to emphasize the importance of actions, not promises. Politicians are particularly incentivized to focus on outcomes when macro-economic conditions are poor, and prior research has found that voters care deeply about the unemployment rate (Hibbs, 1977; Nordhaus, 1975).

One of the ways that politicians can help address the unemployment rate is by not banning ride-sharing platforms. Ridesharing benefits not only consumers, but also drivers, who can work for a ridesharing platform either full time or part time to supplement their income. Using data on crowdfunding campaign launches at Kickstarter, Burtch, Carnahan, and Greenwood (2018) found that the entry of ridesharing platforms into a city reduces lower-quality entrepreneurial activity on Kickstarter by offering viable employment for the un- and under-employed and corroborated this finding with U.S. Census data on self-employment and the survey data of the platform's users. Thus, the benefit of having ridesharing platforms looms larger in cities with higher unemployment rates because they may help ease local labor market conditions with more—and potentially even better—employment options. If the local unemployment issue is not properly addressed when the incumbent mayor had the opportunity to do so, then opposing candidates may have the upper hand in future elections. Such a possibility may impose additional pressure on the incumbent mayor, even if he or she faces less political competition. Thus, we expect the effect in Hypothesis 1 to be attenuated in cities with higher unemployment rates, all else being equal, because politicians will be less hostile to ridesharing platforms that provide employment options for citizens. This is in line with the traditional view in the political economy literature that local politicians care more about local issues (Bardhan & Mookherjee, 2000; Bordignon, Colombo, & Galmarini, 2008). Stated more formally:

**Hypothesis 3 (H3)** *The effect of Hypothesis 1 is attenuated in cities with higher unemployment rate.*

## 4 | DATA AND METHODS

To understand the relationship between political competition and the probability of banning ride-sharing platforms, our empirical analysis focuses on the 2011–2015 period. This is the time period when Uber, Lyft, and other ridesharing platforms were especially active with their entry into various U.S. cities. We focus on a relatively short time period because arguably the reasons for banning (or not) a ridesharing service are more or less constant over the time period. Our observation period ends in 2015 because, by the end of that year, Uber had become a dominant ridesharing platform in the United States such that it is possible that local taxicab companies were adjusting their businesses and preparing for Uber in anticipation of its entry. More importantly, many states (e.g., Nevada, Colorado, and Virginia) began to approve legislation that legalized and regulated ridesharing

companies at the state level, overturning many conflicting city ordinances across various cities within the state (Lazo, 2015; Lien, 2015b).

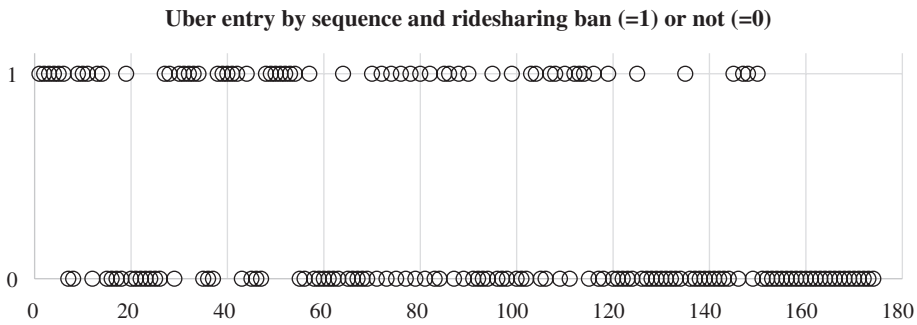
We focus on the U.S. market for several reasons. First, although the entry of Uber and other ride-sharing platforms into various international cities was equally—if not more—contentious and displayed heterogeneous responses across the world, there are too many country-specific factors (e.g., different taxi regulation and private information protection laws) to consider outside the United States, particularly when these ridesharing companies operate typically in only one city per country. Second, by focusing exclusively on the U.S. market, we can eliminate any concerns arising from banning Uber based on nationalism or other patriotic principles. For example, given that platform-based markets are prone to a winner-take-all proposition (Armstrong, 2006; Rochet & Tirole, 2003; Zhu & Iansiti, 2012), a country may ban a foreign company to give home-grown entrepreneurial firms an opportunity to develop their own ridesharing platforms. Third, data sources and data quality are not consistent across countries for the variables we use in our regression models. Finally, in the United States, the political ideology of an elected politician matters less at the municipal government level (in contrast to the state or federal levels) in explaining the variation of regulatory outcomes (Ferreira & Gyourko, 2009). Ferreira and Gyourko (2009) found that this is because it is much easier for citizens to relocate to another city within the region without changing jobs if the mayor is politically biased. They further document that approximately 60% of U.S. cities are institutionally nonpartisan in that they prohibit party labels from being used during mayoral elections in the first place.

As described in the following, our analysis relies on a measure of whether ridesharing was banned or not in a given city. To construct this measure, we need to start with the set of cities in which ridesharing is present. Thus, we collect the entire population of U.S. cities that Uber entered during the 2011–2015 period. From our data collection, we observed  $N = 208$  U.S. local markets that Uber<sup>25</sup> entered by the end of December 2015. The list of markets in which Uber operated as of December 2015 was drawn directly from the company's website. We augment this list with a slate of cities Uber had previously entered but exited by the end of December 2015. These cities that Uber exited were identified by searching all the company's official announcements on its website regarding an exit, complemented by extensive searching of all media coverage related to Uber for all U.S. cities over the 2011–2015 period in the *Factiva*, *NewsBank*, and *LexisNexis* databases. From this list, we dropped any markets that Uber categorized as “regions” rather than cities (e.g., Piedmont Triad, Quad Cities [IA/IL] Central Atlantic Coast (FL), Eastern Idaho, Martha's Vineyard, and Greater Maine<sup>26</sup>) because the market was vaguely defined, the regulatory body that made decisions was not accurately identified, data for other variables used in our regressions were not available, or data inconsistencies with other cities were problematic. These regions could not be well defined as a unit of observation in our regressions. Consequently, we were left with  $N = 174$  cities, and approximately 36% of these cities ( $N = 62$ ) immediately banned Uber shortly after it entered each city. Figure 2 shows the local government's initial regulatory response in terms of banning or accommodating Uber, according to Uber's entry sequence from the first city to the last over the 2011–2015 period.

To test our hypotheses, an ideal experiment would take two cities that are similar in all dimensions except political competition, have Uber enter each simultaneously, and then see how variation in political competition affects the regulatory outcome (ban or accommodate ridesharing platforms).

<sup>25</sup>We only focus on the launch of UberX, which directly competes with local taxicab companies. Considering UberBLACK's entry into the livery industry is outside the scope of this study. Our study also excludes the controversy surrounding whether UberX should be banned at city airports because that decision is usually independent from whether UberX is banned in the city.

<sup>26</sup>This excludes Portland, ME. Therefore, Portland, ME, is included in our data set.



**FIGURE 2** Graphical representation of the sequence in banning ridesharing. *Note.* This graph shows whether a city government officially banned ridesharing services immediately after Uber entered the city, according to Uber’s entry sequence from the first city to the last during 2011–2015. The horizontal axis shows the order of entry. This graph presents  $N = 174$  cities included in our regressions

Empirically, we can approach this ideal setting by using a logit model while controlling for many observables or by using a propensity score matching method while matching observables (e.g., city-specific or mayor-specific characteristics). As previously discussed, each city constitutes a legally and geographically segregated market that independently decides how to regulate the taxicab industry and ridesharing platforms. Consequently, the unit of analysis is the city. We cluster our standard errors at the state level in our regressions (i.e., standard errors are adjusted for 43 clusters) to account for potential correlation between cities in the same state arising from state-specific legal or institutional features that may vary across states.

## 5 | MEASURES

### 5.1 | Dependent variable

#### 5.1.1 | Ridesharing banned

This is a dummy variable equal to 1 if the city officially or unofficially (but de facto) banned ridesharing platforms, and 0 otherwise. When a city that is hostile to ridesharing platforms officially bans them, it typically issues cease-and-desist letters to Uber, Lyft, and other ridesharing companies, and then either arrests or fines ridesharing drivers. In some cases, the city government filed a lawsuit against ridesharing platforms, which was identified using public litigation records by searching the *Westlaw*, *Bloomberg Law*, and *LexisNexis Advance* databases. In addition to officially banning ridesharing platforms, some cities effectively banned them by announcing new regulations that ostensibly “accommodate” the entry of ridesharing platforms but that closely resemble existing taxi regulations. In these cases, ridesharing companies such as Uber and Lyft exited the market after claiming that the new regulation was too onerous.<sup>27</sup> If one or more ridesharing platforms exits the city after the announcement of a new regulation, we code those cities as effectively banning ridesharing platforms (even if, say, Lyft exits but Uber continues to operate illegally in such cities without complying with the onerous new regulation while continuing to challenge the legality of the new rules in higher courts). These bans were also identified using media search (e.g., *Factiva*, *NewsBank*, and *LexisNexis*) or via archives of Uber’s official Twitter and Newsroom blog announcements.<sup>28</sup> Every news

<sup>27</sup>“Onerous” is the actual language used by Uber and Lyft in their official announcements whenever they exit.

<sup>28</sup>For example, <https://twitter.com/Uber> or <https://newsroom.uber.com/>.

article was collected using a combination of keywords such as *Uber*, *Uber technology*, *Uber tech*, and *Uber cabs*, which resulted in 8,183 news articles for the 2009–2015 period.<sup>29</sup> The authors and three research assistants carefully combed through each article to identify all incidents relevant to coding our dependent variable. The dependent variable was independently coded three times by two authors and one research assistant. Cohen's kappa coefficient for inter-rater reliability was 0.84, which is comfortably above the cut-off point (0.75) suggested in the literature for an "excellent" level of agreement (Fleiss, Levin, & Paik, 2013; Hallgren, 2012; Landis & Koch, 1977).

## 5.2 | Independent variables

### 5.2.1 | Mayor\_number\_of\_terms

To test Hypothesis 1, we capture the degree of political competition in a given city by measuring how many terms an incumbent mayor had been elected to at the time of Uber's entry. Less political competition implies that there is a dominant candidate winning multiple elections, allowing the incumbent mayor to stay in office longer. One well-established empirical finding in the political science literature is that incumbent politicians have an advantage in an election relative to newcomers; this advantage is known as the "incumbency advantage" (Erikson, 1971; Gelman & King, 1990; Levitt & Wolfram, 1997). Incumbent mayors have an advantage over newcomers because they are the face of the city (i.e., they are publicly familiar), have a support team with extensive prior experience in successful campaigns, and have instituted policies while in office that satisfy enough interest groups or constituents to secure electoral victory. Accordingly, as the number of terms in which a candidate is elected increases, we assume that the incumbent mayor possesses a "winning formula" and becomes progressively less sensitive to local constituents' broader preferences (i.e., politically entrenched). Winning multiple terms may even unconsciously serve as a "vote of confidence" in the incumbent mayor. This rationale is consistent with the basic tenet in the political science literature that a lack of political competition (e.g., dictatorship) results in politicians staying in power longer, which typically contravenes the public welfare (Acemoglu & Robinson, 2006a; Moore, 1993; Wittman, 1989).<sup>30</sup> The variable was coded primarily using the municipal governments' official website, complemented with Ballotpedia.org and our media search results from the *Factiva*, *NewsBank*, and *Lexis Nexis* databases previously described. Based on Hypothesis 1, we expect this variable to positively affect our dependent variable.<sup>31</sup>

### 5.2.2 | Population

To test Hypothesis 2, using data from the *American Community Survey* (ACS) provided by the U.S. Census Bureau, we collect the population size of each city in the year prior to Uber's entry. To facilitate the interpretation of this variable in our regression models, we divide the raw data by 1,000.

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<sup>29</sup>Although UberX, which is the focus of our empirical analysis, undertook its operations in 2011, we were conservative about the media search period because we wanted to cover all news articles beginning with Uber's founding year to be sure to gather all relevant information preceding the launch of UberX (e.g., whether regulators or the taxicab industry anticipated the emergence of UberX—which they did not).

<sup>30</sup>Wittman (1989) argued that this situation in political markets is akin to having a monopoly in economic markets.

<sup>31</sup>Many prior studies in the political science literature (Besley et al., 2010; Holbrook & Van Dunk, 1993; Solé-Ollé & Viladecans-Marsal, 2012; Tavits, 2007) have used election results (the number of seats a political party secures, political party turnover frequency, vote shares, winning margins, etc.) as a *proxy* for political competition because most settings are located at the state or federal level in which the number of terms an elected leader can serve in office is institutionally limited (typically two terms). In our setting, we are able to directly measure how long a mayor stays in power because most U.S. cities do not have term limits (63% of cities in our data have no term limits). Among those cities that do have a term limit, most cities limit only the number of successive terms, not the total terms that may be served.

Hypothesis 2 predicts that this variable moderates the effect of Hypothesis 1. Therefore, we expect the interaction term *Mayor\_number\_of\_terms* \* *Population* to be negative and statistically significant. In other words, we expect the *slope* representing the positive effect of Hypothesis 1 to be smaller in large cities than in small cities.

### 5.2.3 | Unemployment Rate

To test Hypothesis 3, using the *Current Population Survey (CPS)*, we collect the unemployment rate of each city in the year prior to Uber's entry. Hypothesis 3 predicts that this variable also moderates the effect of Hypothesis 1. Therefore, we expect the interaction term *Mayor\_number\_of\_terms* \* *Unemployment rate* to be negative and statistically significant. In other words, we expect the *slope* representing the positive effect of Hypothesis 1 to be smaller in cities with high unemployment than in cities with low unemployment.

## 5.3 | Control variables

In our regression models, we control for important predetermined factors pertaining to the city or the mayor at the time of Uber's entry that may affect our dependent variable (i.e., the city's decision to ban or accommodate ridesharing platforms).

Several measures are used to control for city-specific characteristics. First, we include *Total taxicab industry revenue* to control for the size and significance of the local taxicab industry. This variable is measured by the total annual revenue of the local taxicab industry in a given city using Dun & Bradstreet's *Hoover's Online* database. Second, in addition to *Total taxicab industry revenue*, we include *Revenue per taxicab co* to account for the relative bargaining power of taxicab companies either because the amount of resources taxicab companies can mobilize may affect the effectiveness of their lobbying efforts, or because local governments may have more or less of an incentive to ban the entry of an uncertain new business in favor of protecting their own local businesses that directly contribute to city tax revenues. This variable, constructed using Dun & Bradstreet's *Hoover's Online* database, is measured by dividing the total annual revenue of the city's taxicab industry by the total number of taxicab companies operating in the city. In both cases, we use data from the year prior to Uber's entry. Third, if the city is one of the cities that Uber entered earlier in its expansion, there may be more resistance from city officials because of uncertainty and misunderstanding surrounding Uber's business model. To control for such an effect, we include *Order\_of\_entry* in our regressions to reflect the order from the first to the last cities that Uber entered. Fourth, regardless of the actual order of entry, cities that are the first city Uber enters in each state may face more resistance because of conflicts with existing state-level regulations in addition to city-level regulations. To account for such possibilities, we include *First entry into state*, which is a dummy variable equal to 1 if the focal city was the first city in the state that Uber entered, and 0 otherwise. Fifth, we include *Crime rate* to measure the crime rate in each city because it may be directly relevant to the trust between riders and drivers, which is an important element of the ridesharing platform. This variable is taken from the census data from the year prior to Uber's entry. Finally, cities that are top tourist destinations may suffer more from asymmetric information between riders and drivers because riders are typically unfamiliar with the local geography and driver backgrounds. Therefore, to account for the possibility that some cities may have inherently heightened public safety issues and greater need for consumer protection with respect to this industry, we include a dummy variable *Top tourist city* equal to 1 if the city was listed as a top tourist city (or the most visited city) in any of the rankings listed in *Forbes* (Top 10), *U.S. News* (Top 20), or *TripAdvisor* (Top 25) in the year prior to Uber's entry, and 0 otherwise.



TABLE 1 Summary statistics for variables in the regression analyses

| Variable                       | Obs | Mean   | Median | Std. dev. | Min   | Max      |
|--------------------------------|-----|--------|--------|-----------|-------|----------|
| Ridesharing banned             | 174 | 0.36   | 0.00   | 0.48      | 0.00  | 1.00     |
| Mayor_number_of_terms          | 174 | 2.02   | 2.00   | 1.45      | 1.00  | 10.00    |
| Population (000s)              | 174 | 356.15 | 144.99 | 775.95    | 6.67  | 8,336.70 |
| Unemployment rate (%)          | 174 | 10.15  | 9.65   | 3.49      | 2.80  | 27.5     |
| Total taxicab industry revenue | 157 | 17.66  | 2.55   | 47.37     | 0.07  | 297.95   |
| Revenue per taxicab co         | 157 | 1.14   | 0.64   | 1.47      | 0.07  | 11.20    |
| Order_of_entry                 | 174 | 94.41  | 94.00  | 58.85     | 1.00  | 203      |
| First entry into state         | 174 | 0.30   | 0.00   | 0.46      | 0.00  | 1.00     |
| Crime rate                     | 166 | 652.30 | 575.10 | 899.50    | 41.16 | 2,729.46 |
| Top tourist city               | 174 | 0.05   | 0.00   | 0.22      | 0.00  | 1.00     |
| Mayor race (nonwhite)          | 174 | 0.17   | 0.00   | 0.38      | 0.00  | 1.00     |
| Mayor age                      | 174 | 57.56  | 58.00  | 10.97     | 31.00 | 77.00    |

Two measures are used to control for individual-level mayor characteristics. *Mayor race* is a dummy variable equal to 1 if the mayor at the time of Uber's entry was identified as black or Hispanic, and 0 otherwise. Nonwhite mayors may be more sympathetic to local taxi drivers who are, in many cases, nonwhite immigrants. We aim to disentangle this factor because it may affect our dependent variable. We also include *Mayor age* to control for the mayor's age, which may affect either the mayor's understanding of the sharing economy in general or the mayor's career prospects (e.g., younger mayors may be more concerned about running for a higher office than about seeking re-election in the same local market).<sup>32</sup> We use the log of age to account for skewness in our regression, which improves our model fit. These variables are constructed from the mayor's official website and Ballotpedia.org.

In our regression models, year dummies are also included to control for common macro trends over time, such as subtle improvements in ridesharing platforms' business models or a better understanding of ridesharing platforms by consumers and politicians. Because our dependent variable is dichotomous, we use a logit model with maximum likelihood estimation for our analyses. Tables 1 and 2 present the summary statistics and pairwise correlations of our variables.

Notably, we must proceed with caution in adding explanatory variables to our regressions because the number of observations is limited and relatively small because of the total number of cities Uber entered. Therefore, to conserve degrees of freedom and to reduce the possibility of adding measurement errors or noise, if there is no compelling reason to include a control variable, we do not include it in our main regression models. However, in a separate section that follows, we run various models with other possible control variables to explore whether they add any meaningful explanatory power, and we test the robustness of our main results.

<sup>32</sup>Although a mayor's background may affect his or her understanding of a sharing economy platform in a similar fashion, we opted instead to use the mayor's age as a proxy measure for two reasons. First, almost all mayors had substantial experience in public service before becoming mayor, and thus, there was no meaningful variation in mayoral backgrounds. Mayors such as Kevin Johnson, a former professional basketball player and Mayor of Sacramento at the time of Uber's entry, were rare exceptions. Second, there is no systematic means of quantifying the minor differences that mayoral backgrounds exhibited. Therefore, to reduce any measurement error introduced during an arbitrary coding process, we opted to use the mayor's age as a control variable to proxy for the understanding of and general predisposition toward sharing economy platforms.

TABLE 2 Pairwise correlations for variables in the regression analyses

|                                    | (1)   | (2)   | (3)   | (4)   | (5)   | (6)   | (7)   | (8)  | (9)   | (10) | (11)  |
|------------------------------------|-------|-------|-------|-------|-------|-------|-------|------|-------|------|-------|
| (1) Ridesharing banned             | 1     |       |       |       |       |       |       |      |       |      |       |
| (2) Mayor_number_of_terms          | 0.20  | 1     |       |       |       |       |       |      |       |      |       |
| (3) Population (000 s)             | 0.26  | -0.05 | 1     |       |       |       |       |      |       |      |       |
| (4) Unemployment rate (%)          | -0.08 | -0.08 | 0.06  | 1     |       |       |       |      |       |      |       |
| (5) Total taxicab industry revenue | 0.31  | -0.08 | 0.63  | 0.07  | 1     |       |       |      |       |      |       |
| (6) Revenue per taxicab co         | 0.32  | -0.01 | 0.17  | 0.03  | 0.69  | 1     |       |      |       |      |       |
| (7) Order_of_entry                 | -0.33 | 0.01  | -0.37 | -0.04 | -0.30 | -0.16 | 1     |      |       |      |       |
| (8) First entry into state         | 0.38  | 0.10  | 0.24  | -0.04 | 0.29  | 0.19  | -0.29 | 1    |       |      |       |
| (9) Crime rate                     | 0.04  | -0.04 | 0.09  | 0.64  | 0.14  | 0.06  | -0.21 | 0.14 | 1     |      |       |
| (10) Top tourist city              | 0.26  | -0.04 | 0.49  | 0.10  | 0.58  | 0.20  | -0.19 | 0.13 | 0.16  | 1    |       |
| (11) Mayor race (nonwhite)         | 0.17  | -0.13 | 0.15  | 0.27  | 0.04  | 0.01  | -0.17 | 0.13 | 0.25  | 0.03 | 1     |
| (12) Mayor age                     | 0.05  | 0.26  | 0.06  | -0.15 | 0.12  | 0.07  | 0.04  | 0.11 | -0.08 | 0.08 | -0.09 |

TABLE 3 Main results

| DV = Ridesharing banned                   | (1)<br>Logit        | (2)<br>Logit        | (3)<br>Logit        | (4)<br>Logit        | (5)<br>Logit        |
|---|---------------------|---------------------|---------------------|---------------------|---------------------|
| Mayor_number_of_terms                     |                     | 0.3968<br>(0.1569)  | 0.6712<br>(0.2117)  | 1.2117<br>(0.4838)  | 1.3274<br>(0.4889)  |
| Mayor_number_of_terms * population        |                     |                     | -0.0014<br>(0.0007) |                     | -0.0012<br>(0.0006) |
| Mayor_number_of_terms * Unemployment rate |                     |                     |                     | -0.0840<br>(0.0430) | -0.0709<br>(0.0408) |
| Population (000s)                         | 0.0001<br>(0.0008)  | 0.0004<br>(0.0009)  | 0.0026<br>(0.0016)  | 0.0006<br>(0.0009)  | 0.0025<br>(0.0016)  |
| Unemployment rate                         | -0.1816<br>(0.0986) | -0.2082<br>(0.1050) | -0.2143<br>(0.0985) | -0.0221<br>(0.1283) | -0.0575<br>(0.1276) |
| Total taxicab industry revenue            | -0.0266<br>(0.0104) | -0.0231<br>(0.0096) | -0.0242<br>(0.0095) | -0.0240<br>(0.0103) | -0.0250<br>(0.0100) |
| Revenue per taxicab co                    | 0.9854<br>(0.2940)  | 0.9410<br>(0.2707)  | 0.9475<br>(0.2797)  | 0.9736<br>(0.2873)  | 0.9776<br>(0.2960)  |
| Order_of_entry                            | -0.0148<br>(0.0089) | -0.0130<br>(0.0096) | -0.0131<br>(0.0096) | -0.0123<br>(0.0098) | -0.0124<br>(0.0098) |
| First entry into state                    | 1.6598<br>(0.6481)  | 1.4694<br>(0.6283)  | 1.5290<br>(0.6188)  | 1.5469<br>(0.6434)  | 1.5900<br>(0.6428)  |
| Crime rate                                | 0.0004<br>(0.0007)  | 0.0003<br>(0.0007)  | 0.0006<br>(0.0007)  | 0.0004<br>(0.0007)  | 0.0006<br>(0.0007)  |
| Top tourist city                          | 3.8004<br>(1.4280)  | 3.6409<br>(1.3043)  | 3.4356<br>(1.2813)  | 3.6360<br>(1.2452)  | 3.4575<br>(1.2200)  |
| MayorRace (nonwhite)                      | 0.9931<br>(0.5576)  | 1.2147<br>(0.5668)  | 1.2486<br>(0.5997)  | 1.0675<br>(0.5378)  | 1.1142<br>(0.5614)  |
| MayorAge                                  | -0.2861<br>(1.3580) | -1.0342<br>(1.3651) | -1.3826<br>(1.4776) | -1.0396<br>(1.3187) | -1.3284<br>(1.4072) |
| Year dummies                              | Included            | Included            | Included            | Included            | Included            |
| McFadden's pseudo-R <sup>2</sup>          | 0.3434              | 0.3695              | 0.3873              | 0.3848              | 0.3976              |
| Observations                              | 149                 | 149                 | 149                 | 149                 | 149                 |

Note. Heteroskedasticity-robust standard errors clustered at the state level (43 clusters) are presented in parentheses.

## 6 | RESULTS

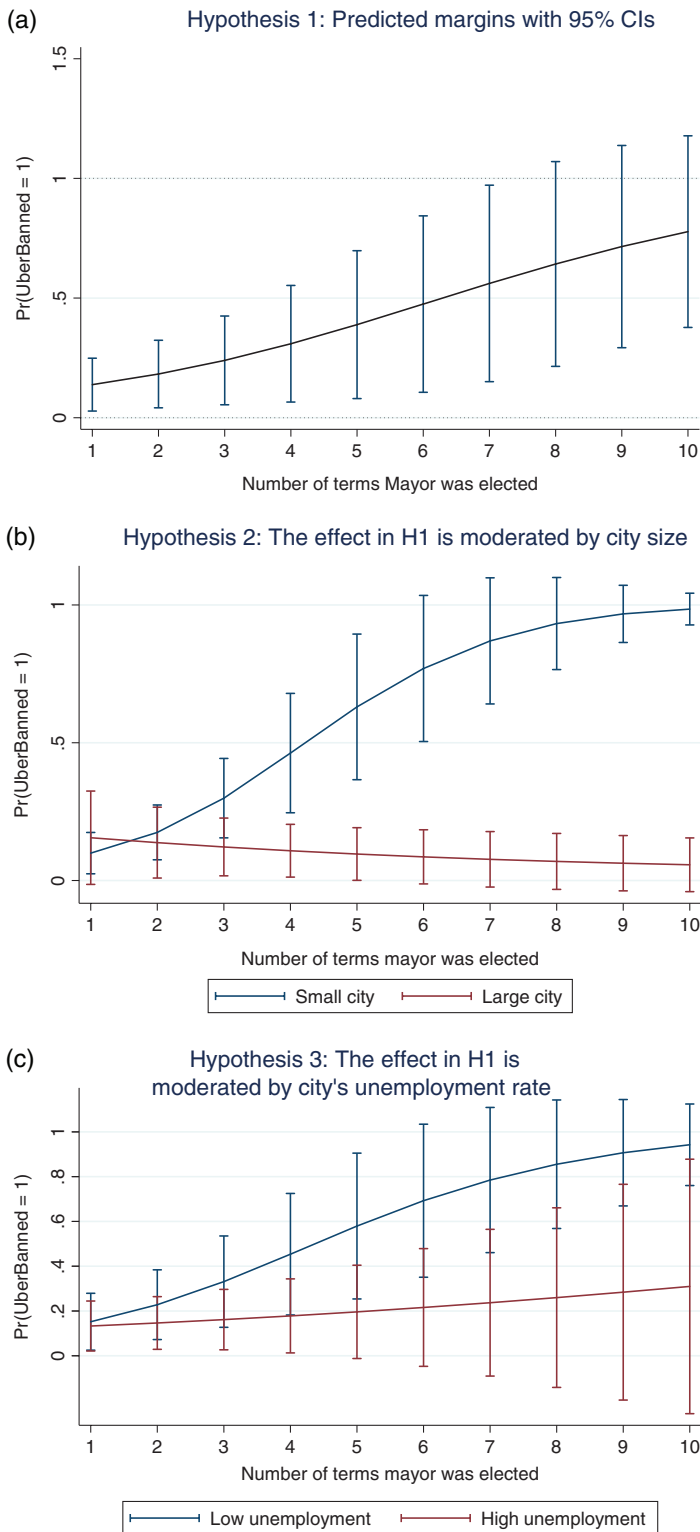
### 6.1 | Main results

Table 3 presents our main results with heteroskedasticity-robust standard errors clustered at the state level (43 clusters) in parentheses. Model (1) includes only control variables as our baseline regression, and Model (2) adds our main variable of interest, *Mayor\_number\_of\_terms* to Model (1). The signs on our control variables are largely consistent with our reasoning and do not change in meaningful ways when adding in our main variable of interest (which is not surprising given the limited correlation between the control variables and *Mayor\_number\_of\_terms* as shown in Table 2). *Mayor\_number\_of\_terms* is positive and significant with  $p$ -value = 0.011 (CI<sub>95</sub> = [0.0893, 0.7043]) in Model (2), suggesting that the operation of ridesharing platforms becomes more likely to be banned as the number of terms the incumbent mayor has served is greater, which is consistent with Hypothesis 1.

Although this result is encouraging for our story, it is important to check the statistical significance of this variable for the full range because the interpretation of coefficients in nonlinear models, such as our logit model, is not straightforward and requires caution (Hoetker, 2007; Zelner, 2009). Therefore, instead of reporting the odds ratio of our coefficients in the estimated logit models that are less intuitive, we present the predicted margins of Hypothesis 1 graphically in Figure 3 using 95% confidence intervals. We set the value of all other variables at their means, which is realistic and empirically relevant in our context. As shown in Figure 3, the slope is positive and statistically different from zero over the entire range, which supports our main hypothesis, Hypothesis 1. As the curve indicates, the precise marginal effect of Hypothesis 1 depends on the value of *Mayor\_number\_of\_terms*. For example, our estimation shows that the marginal effect of *Mayor\_number\_of\_terms* at its mean, while setting the value of all other variables at their means, is approximately 0.044 with  $p$ -value = .000 ( $CI_{95} = [0.0296, 0.0591]$ ). This figure is not only statistically significant, but also economically relevant and realistic in our setting. In Figure 3, the confidence interval is increasing to a certain extent as *Mayor\_number\_of\_terms* becomes greater because we have progressively fewer observations for the right tail of the distribution.

Before we discuss our moderating effects, we provide an alternative test of Hypothesis 1 using a propensity score matching method to obtain greater confidence in our main hypothesis. The challenge in our setting is that treatment (*Mayor\_number\_of\_terms*) is not binary. We therefore need to assign a cut-off value for *Mayor\_number\_of\_terms* to assign cities to the “treated” and “untreated” categories. Because the median (and also the mean) value of *Mayor\_number\_of\_terms* is 2, we consider those cities with an incumbent mayor serving three or more terms at the time of Uber’s entry as the treated group (i.e., treated with “suppressed” political competition) and other cities as the “normal” untreated control group. We code *Treatment* equal to 1 if a city belongs to the treatment group (*Mayor\_number\_of\_terms*  $\geq 3$ ), and 0 otherwise. Because we have a relatively small observation size, we opted to use kernel-based matching with replacement within the common support with bootstrapped errors (500 replications) to estimate the average treatment effect of the treated (ATT). In other words, each observation  $i$  in the treatment group is matched with a kernel-weighted average of all observations in the control group in which the weight given to each observation  $j$  in the control group is inversely proportional to the “distance” between the treated  $i$  and control observation  $j$ , which is similar in nature to the synthetic control method (Abadie, Diamond, & Hainmueller, 2010, 2015; Abadie & Gardeazabal, 2003; Fremeth, Holburn, & Richter, 2016). Our matching approach effectively takes two cities that are nearly identical in all dimensions (using our control variables as the matching dimensions), except political competition, and then examines how differences in political competition affect the probability of banning ridesharing platforms between cities. All our city characteristics are taken from the year prior to the year Uber enters the city. Table A1 in File S1 (online appendix) reports our propensity score matching results. As expected, the ATT is positive and significant with  $t$ -stat = 2.017 ( $CI_{95} = [0.009, 0.401]$ ), consistent with Hypothesis 1. The average treatment effect in Table A1 (0.190) is greater than the marginal effect estimated from Figure 3 because the ATT lumps together all positive effects from higher orders of *Mayor\_number\_of\_terms* (and possibly in a nonlinear manner) rather than isolating a particular marginal effect. In sum, the result from our propensity score matching method is consistent with our main results in Table 3. Overall, our results provide evidence consistent with Hypothesis 1.

We now turn to the moderating effects hypothesized in Hypotheses 2 and 3. Models (3) and (4) in Table 3 show that the interaction terms *Mayor\_number\_of\_terms* \* *Population* and *Mayor\_number\_of\_terms* \* *Unemployment rate* are both negative, as expected, with  $p$ -value = 0.053 ( $CI_{95} = [-0.003, 0.000]$ ) and  $p$ -value = 0.051 ( $CI_{95} = [-0.168, 0.003]$ ), respectively. Furthermore,



**FIGURE 3** (a) Graphical presentation of Hypothesis 1. (b) Graphical presentation of Hypothesis 2 (moderating effect of a city's population). (c) Graphical presentation of Hypothesis 3 (moderating effect of a city's unemployment rate)

Model (5) shows the results when both interaction terms are jointly tested in the model ( $p$ -value = 0.060 (CI<sub>95</sub> = [-0.002, 0.000]);  $p$ -value = 0.082 (CI<sub>95</sub> = [-0.151, 0.009])), revealing robust results in Models (3) and (4). These results are consistent with our argument that the size of the city (in terms of population) and the city's unemployment rate attenuate the effect hypothesized in Hypothesis 1.

As previously noted, however, we must be cautious in interpreting and computing the marginal effects of our interaction terms in our logit model before drawing conclusions (Ai & Norton, 2003; Hoetker, 2007; Norton, Wang, & Ai, 2004; Zelner, 2009). Because we are interested in the heterogeneous effect of Hypothesis 1 in cities with different sizes (H2) and with different unemployment rates (H3), we focus on how the curves representing predictive margins differ across cities with different characteristics. To facilitate interpretation, we provide a graphical presentation of Hypotheses 2 and 3 in Figures 3b and 3c, respectively, by coding cities with a population size above (below) the median as large (small) cities and cities with unemployment rates above (below) the median as high (low) unemployment cities. As shown in Figure 3b, the curve for large cities stays below the curve for small cities when *Mayor\_number\_of\_terms*  $\geq 2$  and the two curves are significantly different ( $p$ -value = 0.0000). Similarly, in Figure 3c, the curve for high unemployment cities stays below the curve for low unemployment cities and the two curves are significantly different when *Mayor\_number\_of\_terms*  $\geq 2$  ( $p$ -value = 0.0000).

The implications of these figures are straightforward. For example, according to Hypothesis 2, when *Mayor\_number\_of\_terms* = 4 (i.e., a city with low political competition), the predictive margin for small cities is 0.463 (marginal effect = 0.164); and for large cities, is 0.108 (marginal effect = -0.014) in Figure 3b, suggesting that the probability of banning ridesharing platforms is subdued in larger cities despite the same low level of political competition. Similarly, according to Hypothesis 3, for example, when *Mayor\_number\_of\_terms* = 4, the predictive margin for low unemployment cities is 0.454 (marginal effect = 0.122); and for high unemployment cities, is 0.178 (marginal effect = 0.017) in Figure 3b, suggesting that the probability of banning ridesharing platforms is subdued in high unemployment cities despite the same low level of political competition. Thus, our results provide evidence consistent with Hypotheses 2 and 3, and we believe that these moderating effects provide additional support for the underlying mechanisms highlighted in Hypothesis 1.

## 6.2 | Robustness checks

We provide several tests to check the robustness of our main results. First, as shown in Table A2 in File S1, we replicate the results in Table 3 using a linear probability model (OLS) and find consistent results that continue to support all our hypotheses (H1–H3). Thus, our main results are not sensitive to model assumptions or choice of estimation methods. Second, instead of measuring how many *terms* an incumbent mayor had been elected to office at the time of Uber's entry, perhaps measuring how many *years* an incumbent mayor had served in office at the time of Uber's entry is an alternative means of capturing the degree of political competition (*Mayor\_years\_in\_office*). Unsurprisingly, the two variables are closely related (correlation = 0.84). We replicate Models (2)–(5) of Table 3 after replacing *Mayor\_number\_of\_terms* with *Mayor\_years\_in\_office*. Table A3 in File S1 shows results that are qualitatively similar to those shown in Table 3 with  $p$ -values between .010 and .041 for *Mayor\_years\_in\_office* across all models. Graphical presentations of the statistical significance of the main and interaction terms are shown in Figures A1–A3 in File S1, which show support for all our hypotheses (H1–H3). The graphs show patterns that are qualitatively similar to those represented in Figure 3a–3c. Thus, our main results are robust to an alternative measure.

Third, we drop outliers to check whether cities with an incumbent mayor that had been serving more than seven terms are driving our results. There were two notable outlier cities—Madison (WI)<sup>33</sup> and Charleston (SC)<sup>34</sup>—and both banned ridesharing platforms. Panel A of Table A4 in File S1 shows that our results are similar to Table 3 and virtually unchanged even after dropping these two outliers.

Fourth, we drop cities that did not issue an outright ban (i.e., cities that ostensibly accommodated the entry of ridesharing platforms, but either Uber or Lyft had shut down operations because of onerous regulation). Panel B of Table A4 in File S1 shows that our results are similar to Table 3 and virtually unchanged even after dropping these cities.

Fifth, we add additional demographic and institutional control variables into our empirical models. Recall that we were initially cautious about which variables were required to be included in our main regression models because of restricted degrees of freedom, and therefore, excluded any variable that did not have strong theoretical merit. We now test the robustness of our empirical model by including *% College degree*, *% Black*, *Median household income*, *Voting turnout*, *Alternative public transport*, *Automobiles per capita*, *Population density*, *Strong mayor form*, and *Mayor gender* one at a time. *% College degree* measures the percentage of the city population that has a college degree, *% Black* measures the percentage of the city population that is African American, and *Median household income* measures the city's median income level. These variables are taken from the census data. *Voting turnout* is constructed using the *CPS* to measure the degree of citizens' political engagement in each city. *Alternative public transport* is a dummy variable equal to 1 if the city has a well-developed public transportation system, and 0 otherwise. We code a city as having a well-developed public transportation system if, according to the 2011 *Public Transportation Factbook* published by the American Public Transportation Association (APTA), the city's public transportation system was operated by one of the 50 largest transit agencies or one of the 50 largest bus agencies. *Automobile per capita* is estimated for each city using the *ACS* provided by the U.S. Census Bureau to capture the potential substitute of driving in the year prior to Uber's entry. We construct *Population density* to account for the possibility that driving could be more common in places with lower population density, whereas the taxi utilization rate (e.g., easier to hail taxis) may be higher in cities with sufficiently high population density. To build this measure, we collect the total area of the city from the 2010 U.S. Census data and use population data that were collected for testing Hypothesis 2. *Strong mayor form* is a dummy variable equal to 1 if the city had a mayor-council form of government, and 0 otherwise (i.e., council-manager form of government). Although the mayor is clearly the most powerful person in the city government and city staff ultimately reports to the mayor, there are institutional differences across cities that embody variations in mayoral authority. Mayors may be more relevant in some cities and less so in others depending on how power is allocated among different institutional actors. Although there is no sharp category distinguishing between "weak" and "strong" mayors in practice, most "strong" mayors who generally have more power are in the mayor-council form of government and are directly elected by citizens to that office. In contrast, most "weak" mayors with relatively less power are mayors in a council-manager form and are elected from within the city council. This variable is collected from official city websites, Ballotpedia.org, and *National League of Cities* that categorize strong and weak mayor forms of government. *Mayor gender* is a dummy variable equal to 1 if the mayor was a woman, and 0 otherwise.

<sup>33</sup>Paul Soglin, mayor of Madison (WI), was elected to serve as mayor for three terms from 1973–1979, another three terms from 1989–1997, and then another two terms from 2011–2017 (as of this writing) for a total of eight terms. He either sought higher office or worked as a lawyer while not serving as the mayor of Madison.

<sup>34</sup>Joseph P. Riley, Jr., mayor of Charleston, SC, served ten consecutive terms as the mayor of Charleston during 1975–2016, making him the longest-serving living mayor in the United States.

Panels C–K of Table A4 in File S1 show the results of these additional tests. None of these added variables have any significant explanatory power (all of these variables have  $p$ -value  $\geq .344$ ) and our main variables of interest, *Mayor\_number\_of\_terms*, *Mayor\_number\_of\_terms \* Population*, and *Mayor\_number\_of\_terms \* Unemployment rate* remain statistically significant, and the magnitudes of the coefficients remain virtually unchanged compared to Table 3. Thus, the main results from our empirical model are robust to the inclusion of these additional control variables.<sup>35</sup>

Finally, we test the robustness of our main results by including a measure capturing another city-specific characteristic that reflects the degree of consumer benefit ridesharing brings to the city (*Taxi-Uber fare ratio*). This variable uses estimated fare data from Uber's official website and TaxiFareFinder.com for a set distance using the same route. Using the website's map, we compute a five-mile trip beginning from city hall to another city landmark to estimate the fares for a typical taxi ride and for Uber. We then take the ratio of the two estimated fares such that a higher ratio implies a lower Uber fare, and thus, reflects greater benefit to consumers in that city. We note that this is a conservative measure capturing only the economic benefit that Uber introduces to the city because pundits have frequently argued that Uber confers other social benefits to the city, including reduced drunk driving, reduced congestion and air pollution, increased flexibility in the local labor market, added transportation options, and increased entrepreneurial activity, among others (Burtch et al., 2018; Greenwood & Wattal, 2017; Ranchordás, 2015; Rogers, 2015; Sundararajan, 2016). Just as taxi fares vary widely across cities, Uber fares vary widely across cities as well. Therefore, it was clear that Uber was strategically choosing (or at least its algorithm was strategically determining) the fare for each city, possibly considering supply and demand conditions. This variable is clearly endogenous, which prevented us from using it in our main regressions. Although the inclusion of this variable in our regressions does not result in a causal interpretation of our main variables, we can still test whether greater consumer benefit reduces the likelihood of banning ridesharing platforms and whether this variable primarily drives our results. As shown in Panel L of Table A4 in File S1, this variable is negative (as expected). For example, in Model (4), *Taxi-Uber fare ratio* is  $-0.6597$  with  $p$ -value = 0.187 and  $CI_{95} = [-1.639, 0.319]$ . Hence, although the confidence interval is somewhat wide, the amount of consumer benefit ridesharing brings to the city appears to be negatively correlated with the likelihood of banning ridesharing platforms. More important, our main variables of interest remain qualitatively similar to our main results shown in Table 3. In sum, our main results are robust to a host of alternative specifications and continue to support all our hypotheses (H1–H3).

## 7 | DISCUSSION AND CONCLUSION

The growth of the sharing economy in recent years is a prime example of how public and private organizations can come together to create value. Consumers can benefit when entrepreneurial firms successfully roll out innovations in the marketplace. However, innovation can often face fierce opposition because it disrupts incumbent businesses and may require a new regulatory framework to realize its full potential. Regulators, therefore, find themselves in positions in which they must strike the right balance between accommodating the entry of entrepreneurial firms (while understanding the full ramifications of their innovation and technology) and protecting incumbent firms' interests when implementing new institutional arrangements. In this study, we argue that an increase in political

<sup>35</sup>Graphical presentations of the marginal effects corresponding to the results shown in Panels A–L in Table A4 all look similar to the patterns shown in Figure 3c, supporting all our hypotheses (H1–H3). For the sake of brevity, we do not repeat the graphs here, but all graphical presentations are available on request.



competition can tip the balance in favor of consumers. We hypothesize that less political competition leads to higher probability of banning ridesharing platforms and that such an effect is attenuated in cities with larger population and higher unemployment rate. We find broad support for our argument using archival data on ridesharing bans in U.S. cities during the 2011–2015 period. We undertake a number of robustness tests to mitigate potential endogeneity concerns and supplement our econometric analysis with semistructured interviews.

Our article emphasizes that political competition is an important ingredient that allows public and private organizations to create value together. We consider this notion against a backdrop in which value creation (and value appropriation) occurs in a three-way interaction among the city government, the incumbent industry, and the new entrant, and in which the public organization is a critical actor (or gatekeeper) in balancing multidimensional interests. Hence, our study extends the traditional dyadic relationship considered in the public-private partnership literature (e.g., Klein, Mahoney, McGahan, & Pitelis, 2013; Mahoney et al., 2009). We hope our study helps future scholars in this domain to extend other bodies of the literature in considering multiparty interests in public-private partnerships.

This study also contributes to the nonmarket strategy literature by focusing on the role of supply-side competition. Extant studies in this domain have traditionally focused on the demand-side competition among existing firms to influence regulators. We depart from this approach in two important ways. First, to the best of our knowledge, our study is the first to examine the effect of supply-side competition (i.e., political competition) on new entrants and more broadly on the consumer benefits stemming from entrepreneurship and innovation. Second, this article assumes the new entrant's perspective more so than the incumbent's perspective, which is clearly an understudied topic both in the nonmarket strategy literature (Baron, 2012; De Figueiredo, 2009; Hillman et al., 2004; Hillman & Hitt, 1999) and in the innovation literature (Yu & Hang, 2010). By assuming the new entrant's perspective, we believe our study also illuminates a potentially undesirable effect of the (cozy) relationship between politicians and incumbent businesses, thereby adding a more balanced view to the public-private partnership literature (e.g., Klein et al., 2013; Mahoney et al., 2009).

The insights from this study are particularly valuable for new market entrants (i.e., entrepreneurial firms) and the entrepreneurship and innovation literature. One of the prevailing themes in the literature is that radical innovation is frequently developed by new market entrants (e.g., Ács & Audretsch, 2006; Dosi, 1988; Klepper, 1996) and implicitly assumes that commercializing innovation is an option executed with ease once committed to (e.g., Gans, Hsu, & Stern, 2002; Gans & Stern, 2003; Marx, Gans, & Hsu, 2014).<sup>36</sup> In reality, many seemingly promising innovations fail the test of market acceptance and disappear. Accordingly, we believe that the literature is far less informative about the challenges new entrants must overcome to successfully *commercialize* innovation and gain market acceptance. This gap in the literature is surprising given that typically there is severe opposition from potentially displaceable incumbent firms using various entry deterrence strategies (e.g., Seamans, 2012, 2013; Smiley, 1988) and that the post-entry survival rate of new entrants in innovative industries has repeatedly been found to be low (e.g., Audretsch, 1995; Paik, 2014). Furthermore, the scant literature thus far primarily focuses on the supply- and demand-side factors of commercializing innovation (Gans et al., 2002; Gans & Stern, 2003; Marx et al., 2014) without considering contextual factors (Yu & Hang, 2010), such as regulation, that shape the “rules of the game” of market competition (North, 1991). In this study, we maintain that new entrants lack political

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<sup>36</sup>In this respect, the recent study by Ansari, Garud, and Kumaraswamy (2016) is a notable exception. These authors provided an in-depth case study of the entry of TiVo—a provider of digital video recorders—and examined how new entrants address one type of entrant's dilemma: gaining the support of the incumbents they disrupt.

power, in general, relative to incumbent firms. In other words, the relative abundance of “political muscle” exercised by incumbent firms in regulated markets may function as an entry barrier, which we call a *political barrier to entry*. Accordingly, our study has important implications for firms navigating political barriers to *commercializing* innovation across heterogeneous markets, which is an important—although underexplored—topic in the literature.

Another contribution of our article is that it helps build deeper understanding of ridesharing platforms and conditions under which they are banned or not, which should be useful to ongoing policy debates (e.g., Cannon & Summers, 2014; Cohen & Sundararajan, 2015; Council of Economic Advisers, 2016; Cramer & Krueger, 2016; Hall & Krueger, 2018; Rogers, 2015). However, one potential limitation of our article is that, by necessity, we focus on the early stage effects of the sharing economy on society. At present, it appears that sharing economy platforms provides welfare benefits to consumers and other social benefits to the broader society. Therefore, in this sense, political competition leads to better market outcomes.

The benefits of sharing economy firms in general and ridesharing platforms in particular may not be as clear over the longer run, however. For example, one of the ways that ridesharing platforms currently deliver value is through driver bonuses and rider coupons, which boost the platform’s business and provide consumer welfare. However, once the platform has attained enough coverage, a virtuous cycle created by a strong network effect may allow it to become a dominant platform functioning as a near monopoly (Armstrong, 2006; Eisenmann et al., 2006; Parker & Alstyne, 2005; Rochet & Tirole, 2003, 2006; Zhu & Iansiti, 2012). The platform then has less incentive to subsidize the acquisition of customers and may raise prices on either the rider side, in the form of higher fares, or on the driver side, in the form of lower cuts of the fare. There is then less welfare left for consumers. Hence, such dynamic welfare considerations should be considered in policy debates. In addition, the bans on ridesharing were temporary in some cases, as ridesharing companies and municipal governments ultimately worked together to reach a common solution. Again, a fuller understanding of the dynamic effects of the interaction between private companies and public regulators is beyond the scope of this study, but would be a fruitful avenue for future research.

Another potential limitation of our study is its generalizability to other industries. Our setting highlights the entry of a two-sided platform (ridesharing platforms) into a heavily regulated market (taxi and ride-hailing) that matches excess supply of rides (i.e., a combination of labor and capital) with latent demand for rides, thereby creating value for consumers. Some sharing economy platforms (e.g., Airbnb) primarily match excess supply of capital (empty rooms) with demand for the use of capital with minimum labor involved, but there may be negative externalities to non-users of the platform (e.g., wild house parties affecting the community or higher rents for nonhomeowners). These nuances across industries and business models should be considered when public agencies devise new regulatory frameworks. Our setting is also limited by the number of cities in which ridesharing platforms operate. Therefore, our limited number of observations restricts our degrees of freedom and does not allow for more sophisticated econometrics analyses. We therefore supplement our empirical analysis with additional insights from our interviews with practitioners.

We nonetheless believe that many aspects of our study can help us to better elucidate challenges faced by other sharing economy platforms and that our study meaningfully adds to the emerging literature on the sharing economy (e.g., Burtch et al., 2018; Cachon et al., 2017; Cramer & Krueger, 2016; Cui, Li, & Zhang, 2016; Edelman, Luca, & Svirsky, 2017; Ge, Knittel, MacKenzie, & Zoepf, 2016; Greenwood & Wattal, 2017; Hong & Lee, 2018; Matzler, Veider, & Kathan, 2015). In closing, we hope that our study inspires additional theoretical, managerial, and policy debates in meaningful ways.

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## SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.

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