More Market-Oriented Than U.S. And More Socialist Than China: A Comparative Public Property Story of Singapore

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MORE MARKET-ORIENTED THAN THE UNITED STATES AND MORE SOCIALIST THAN CHINA: A COMPARATIVE PUBLIC PROPERTY STORY OF SINGAPORE

Jianlin Chen & Jiongzhe Cui†

Abstract. Compared to the more illustrious conceptualization of private property, the conceptualization of public property remains at a surprisingly infantile stage. The very definition of public property is ambiguous. This article utilizes a comparative case study of traffic congestion policies in the United States, China, and Singapore to highlight the conceptual pitfalls posed by the current confusion on public property. This article proposes a refined public property framework that offers greater conceptual clarity on the real issues at stake. In particular, this article argues that “property” in public property should include regulatory permits while “public” in public property should not be distracted by the requirement of public access. The allocation considerations of efficiency and fairness governing conventional public property are equally applicable to economically valuable regulatory permits. Similarly, public access is a mere form of allocation that should be changed upon alterations in use pattern arising from technological advancement and socioeconomic changes.

I. INTRODUCTION

Public property matters, or at least it should. Compared to the more illustrious private property, which enjoys legions of books and journal articles devoted specifically to the discussion and promotion thereof,¹ the conceptualization of public property remains at a surprisingly infantile stage.² The very definition of public property is ambiguous. What does the

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² The term “public property” is often featured in the literature. However, this literature tends to fall into two categories that do not advance a coherent understanding of public property. For a discussion of the first category of public property in public law and the importance of property ownership as a criterion, see Angela C. Carmella, Symbolic Religious Expression on Public Property: Implications for the Integrity of Religious Associations, 38 FLA. ST. U. L. REV. 481 (2011); Kate Shelby, Taking Public Interests in Private Property Seriously: How the Supreme Court Short-Changes Public Property Rights in Regulatory
“public” in public property entail? Is “public access” a necessary or sufficient characteristic of public property? What does the “property” in public property cover? Does “property” include regulatory permits allocated and subjected to the same principles allocating conventional public property, such as land? This inquiry is not simply a matter of intellectual curiosity; it has practical implications for allocating resources and designing regulatory schemes. One manifestation of the quandary caused by the underappreciation of public property is traffic congestion policy.

Public roads—a well-recognized form of public property—are plagued by traffic congestion. Traffic congestion is a major problem in urban areas of the United States and around the world and imposes substantial time and fuel costs on motorists. It also results in many negative externalities not borne by motorists, such as other types of congestion and environmental damage. The open-access nature of roads and the difficulty commuters face navigating roads make traffic congestion a classic example of the “tragedy of the commons.” Two types of market-based regulatory

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Taking Cases, 24 J. LAND USE & ENVTL. L. 45 (2008); Dean Smith, Lawmaking on Federal Lands: Criminal Liability and the Public Property Exception of the Administrative Procedure Act, 23 J. LAND RESOURCES & ENVTL. L. 313 (2003). For a discussion of the second category on public property through the comparison of the pros and cons of private property, while assuming that public property is equivalent to public access (contrary to private property), see William F. Cloran, The Ownership of Water in Oregon: Public Property vs Private Commodity, 47 WILLAMETTE L. REV. 627 (2011); Carol M. Rose, Romans, Roads, and Romantic Creators: Traditions of Public Property in the Information Age, 66 LAW & CONTEMP. PROBS. 89 (2003); Carol M. Rose, The Comedy of the Commons: Custom, Commerce, and the Inherently Public Property, 53 U. CHI. L. REV. 711 (1986). In both categories of literature, the discussion of public property is ancillary to the main discussion, rather than a targeted inquiry (descriptive or normative) on the public property concept.

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3 See infra Part IV.C.3.

4 Regulatory permits are legal instruments issued by the state to authorize the conduct of certain activities by private entities, without which the conduct would be illegal. They are termed “administrative permits” in China, and may also be referred to as licenses, approvals, franchises, and consents. See infra Parts III.B.2 & III.C.1.


8 Iaione, supra note 7, at 891; Nash, supra note 7, at 683-87. For a discussion addressing why anticommons is less of a concern for public roads even in a socialist state such as China, see Michael A. Heller, The Tragedy of the Anticommons: Property in the Transition from Marx to Markets, 111 HARV. L. REV. 621 (1998) (identifying anticommons as another possible form of inefficient property arrangement whereby too many entities have veto power over the resources). The authority to manage road usage is
approaches have been touted as appropriate solutions to these problems. These approaches are price-based instruments (such as congestion pricing) and quantity-based instruments (such as license quotas on vehicle ownership or usage).9

This article’s comparative analysis of congestion management policies in the United States, China, and Singapore reveals an interesting paradox. Market-based mechanisms are more widely adopted in Singapore than in the United States. Singapore is often the pioneering jurisdiction in implementing market-based regulatory solutions such as price-based instruments and quantity-based instruments.10 This is somewhat ironic, given the United States’ perceived cultural and ideological affinity for market and property rights, which theoretically enables greater and faster implementation of market-based regulatory solutions.11 More intriguingly, Singapore’s adoption of market-based mechanisms has a distinctive socialist flair. A key justification that resonates in the Singapore policy-making process is that the government has a responsibility to collect fair value for regulatory permits or public resources allocated to private entities.12 This seeming obsession with preventing the squandering of public resources by transferring them to private entities is common in a socialist regime such as China, where public property has been elevated to near-sacred status.13 That said, the market mechanisms championed in Singapore under the banner of public property protection are conspicuously absent in China’s traffic congestion policies.14
This article utilizes perceptions of public property to explain the above paradox. Regulatory permits are not typically conceived of as property in Chinese jurisprudence. Therefore, the market-based allocation of regulatory permits—such as using vehicle license quotas to control congestion—is subject to strong criticism by Chinese academics and government officials. The criticism remains regardless of the substantial economic value conferred on the recipients of these regulatory permits, which includes the ability of the recipients to “sell” these ostensibly non-transferable permits via creative legal instruments. By contrast, regulatory permits are recognized as property under Reich’s “new property” in the United States. Although U.S. courts have recognized regulatory permits as property, these permits are not sufficiently valued when compared to conventional public property, such as government contracts and the ability to obtain land.

In addition, under the current conceptualization of public property in the United States, a defining characteristic is the right of public access. This right unduly fuses the issue of ownership with the choice of allocation mechanism. Notwithstanding the fact that public roads have been the poster child of accessible public property since Roman times, the high demand for roads and the substantial negative externalities that road usage imposes has been an ill-suited allocation mechanism for public roads. Congestion charges, although widely regarded as a better allocation of scarce road space, remain fraught with opposition. Many feel that the public has an “inherent right” to access roads, and imposing monetary charges harms the use of public roads.

By using a comparative analysis of public property, this article advances a refined framework of public property to offer greater conceptual clarity on the following issues. For one, the definition of “property” in public property must be sufficiently broadened to include regulatory permits and other regulatory actions that bestow substantial economic value on

15 See infra Part II.C.
18 Infra Part IV.C.2.
19 Rose, Romans, Roads, and Romantic Creators, supra note 2, at 96-97.
20 Public access should be distinguished from public free access. The frequent conflating of the two by commentators exacerbates the problems caused by treating public access as a defining characteristic of public property. See infra Parts IV.C.3, V.A.2.
21 Infra Part V.A.2.
recipients. Important considerations, such as efficiency and loss of public revenue, are implicated by allocating both “regulatory property” and conventional public properties, such as land use and government contract.

Further, the concept of “public” in public property should not necessarily require public access. Public access is merely a form of allocating property. It may have been historically the most efficient allocation mechanism, but this tradition should not impede society from adopting other allocation mechanisms, particularly in light of changes in road use patterns due to technological advancement and socio-economic changes.

Part II of this article presents the theoretical literature on traffic congestion management and the policies implemented in the United States, China, and Singapore. Part III identifies Singapore’s greater use of market-based mechanisms, which has a socialist emphasis on public property protection. Thereafter, the article compares the concepts of public property in the three jurisdictions. Part IV proposes a refined framework of public property by drawing on the strengths and weaknesses of the different concepts of public property in the three jurisdictions. Part IV also addresses possible objections related to redistribution considerations and perverse government incentives to generate revenue. Part V advances a framework of public property that involves a broad, economic understanding of property to include regulatory permits and a reorientation of public that focuses on public ownership and not public access.

II. THEORETICAL FRAMEWORK OF TRAFFIC CONGESTION POLICIES

Traffic congestion is a major problem in the urban areas of the United States and around the world. Studies have estimated that the total congestion costs in sixty-eight major urban regions in the United States was USD 78 billion, or 0.84% of the U.S. GDP, in 1999. In addition, the continuous rapid increase in transportation demand has aggravated the aging and deteriorating transportation infrastructure in United States. Traffic congestion imposes substantial time and fuel costs to motorists and also imposes many other costs that are not borne by motorists, such as other

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22 Schuitema, supra note 6, at 85; O’SULLIVAN, supra note 6, at 258; Small, supra note 6, at 409-10.
23 Timilsina & Dulal, supra note 7, at 165.
types of congestion and environmental costs. Together, along with the open-access nature of roads and the virtual impossibility for the vast number of commuters to coordinate their road usage through negotiation, these negative externalities render traffic congestion a classic example of the "tragedy of the commons." With little incentive to take into account the social costs they impose, individual motorists overuse the roads for their own benefit at the expense of society.

It is usually not controversial to have the government recognize that some form of intervention is required to remedy the problem of traffic congestion. However, there is little consensus on the appropriate regulatory response. Regulatory responses can be broadly classified into command-and-control regulations and market-based mechanisms. Command-and-control regulations are relatively rare in the realm of traffic congestion policies and include parking controls; employer-based mandatory trip reduction programs; and "odds and evens" license plate vehicle authorization systems, where only vehicle owners whose numbered plates are odd may use the roads on odd days of the week. Due to the prevailing consensus that command-and-control regulations are inefficient, these practices have not been emphasized in discussions on viable policy alternatives. That said, they are still occasionally relied on in other jurisdictions as a last-ditch measure to curb traffic usage during sudden spikes in road-usage demand.

Market-based mechanisms can be divided into schemes based on price or quantity. Congestion pricing—typically a toll that is levied on vehicle travel during peak hours—is often touted as a market-based policy response

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25 See e.g., Iaione, supra note 7, at 894-96; Nash, supra note 7, at 684-94; Schuitema, supra note 6, at 84-92; see Timilsina & Dulal, supra note 7, at 164-66 (discussing the various external costs of urban transportation).
26 Iaione, supra note 7, at 891; Nash, supra note 7, at 683-90. Tragedy of the commons refers to the overexploitation of communally shared resources by individuals seeking to maximize their own profit in the use of resources while disregarding the social costs of their actions, including the long-term benefit to the community arising from the preservation of resources. See generally Garrett Hardin, The Tragedy of the Commons, 162 SCI. 1243 (1968).
27 Iaione, supra note 7, at 891; O’SULLIVAN, supra note 6, at 260-62; Small, supra note 6, at 410-11.
30 See Iaione, supra note 7, at 905-06; Nash, supra note 7, at 708.
31 See Beijing cheliang jinqi an weihao xianxing [Beijing Vehicle Usage Restricted by Last Number of Vehicle Plate From Today], LIANHE ZAOBAO (Sing.), Oct. 11, 2008 (describing the restrictions of vehicles usage in Beijing).
32 Iaione, supra note 7, at 906-11; Merrill, supra note 28, at 276.
to congestion that relies on price incentives. By assigning a price that theoretically internalizes the externalities of road usage, it is left to prospective road users to decide whether or not to pay the toll and use the roads. Economists widely regard congestion pricing as an effective way to achieve social efficiency because it forces motorists to internalize the external costs. It is also justified philosophically based on the benefit principle of taxation, where “consumers of government services should be taxed in proportion to the benefit they receive.”

Conversely, quantity-based instruments set limits on the usage of roads. Such instruments include issuing limited numbers of vehicle ownership licenses and limited numbers of entry permits in urban centers. Quantity-based instruments incorporate market mechanisms when the permits are allocated to the highest valuers in the market, such as by allowing allocated permits to be subsequently transferred. Professor Christian Iaione argued in favor of quantity control over price mechanisms because under the former method the optimal usage of a given road could be better ascertained, as opposed to the latter method which requires, for example, the determination of marginal congestion cost of one additional vehicle.

III. Traffic Congestion Policies Compared

This part presents the theoretical literature on traffic congestion management and the different policies implemented in the United States, China, and Singapore.

33 See Iaione, supra note 7, at 907; Nash, supra note 7, at 704-05; O’SULLIVAN, supra note 6, at 262-66; Small, supra note 6, at 409-10.
34 See Nash, supra note 7, at 706-09; O’SULLIVAN, supra note 6, at 262-64.
35 See Sun, supra note 24, at 283; Timilsina & Dulal, supra note 7, at 168-69; Nash, supra note 7, at 704-715; Schuitema, supra note 6, at 93-96; Sock-Yong Phang & Rex S. Toh, Road Congestion Pricing in Singapore: 1975 to 2003, 43(2) TRANSP. J. 16, 17 (2004). For a comparison of congestion pricing with other price-based mechanisms such as gasoline tax, parking tax, and subsidies for public transit, see O’SULLIVAN, supra note 6, at 262-73 (noting how these measures are insufficiently sensitive to the problem of excessive travel during peak hours). See also Michael E. Levine, Airport Congestion: When Theory Meets Reality, 26 YALE J. ON REG. 37, 41-44 (2009) (discussing the efficiency of congestion charges in the context of airport congestion).
36 Sun, supra note 24, at 283.
37 See Iaione, supra note 7, at 906-07.
38 See id. at 929-37.
39 Id. at 908-10.
A. The United States’ Flirtation with Market-Based Instruments

Despite academic advocacy, the United States has not implemented the above market-based approaches to traffic congestion. There are currently no quantity-based instruments in the United States. In terms of price instruments, only limited routes in New Jersey, California, Texas, and Florida feature congestion pricing through the use of tolls.\footnote{U.S. DEP’T. OF TRANSP. FED. HIGHWAY ADMIN., LIST OF PROJECTS BY TYPE, http://www.fhwa.dot.gov/policy/otps/projectlist.htm (last visited Aug. 8, 2013). Tolls at bridges may sometimes incorporate congestion pricing elements by varying the toll charges in accordance to the time of travel. See, e.g., A Year of Growth: One Year of SR 520 Tolling in the Books, STATES NEWS SERVICE, Dec. 26, 2016 (describing the SR 520 Bridge in Seattle).} Texas’s plan was a subject of the 2008 study by the U.S. Department of Transportation.\footnote{See Nash, supra note 7, at 678 n.44.} Despite the strong commitment and political will of former New York City Mayor Michael Bloomberg, his repeated attempts to introduce congestion pricing to address traffic problems in Manhattan were stalled in the legislative process.\footnote{See Iaione, supra note 7, at 919-21; Nash, supra note 7, at 735.} This is both telling and unfortunate because the liberal-oriented, congestion-plagued, geographically-constrained New York City is arguably “the setting in the United States in which congestion pricing would face the least opposition.”\footnote{Nash, supra note 7, at 734.}

Such limited implementation is not surprising as “public reaction to congestion pricing tends to be strong and negative.”\footnote{Nash, supra note 7, at 726; see Small, supra note 6, at 409.} One main objection to congestion pricing is that it is inherently unfair; the fees impose barriers to travel for those with less income.\footnote{Sun, supra note 24, at 284; Nash, supra note 7, at 726-27; Schuitema, supra note 6, at 107-09.} Of course, there is also the general resistance against paying for an item that was previously free.\footnote{Nash, supra note 7, at 728; Schuitema, supra note 6, at 109-10.} Other objections include privacy concerns, disquiet over the use of market-based approaches, and the potential negative effect on local business.\footnote{Nash, supra note 7, at 728-29; Schuitema, supra note 6, at 110-12. Parking garages within the tolled areas are also affected and are likely to oppose such measures. See, e.g., Iaione, supra note 7, at 919 (parking garages joining as plaintiffs in litigations opposing toll measures in New York City).} Nonetheless, these objections are not insurmountable. For example, the concerns of equity and new taxes can simply be resolved by providing subsidies to the poor or allocating the revenue collected towards public transportation or other like benefits.\footnote{Schuitema, supra note 6, at 107-09; Nash, supra note 7, at 730; see Iaione, supra note 7, at 911.} Concerns about privacy and utilizing a market-based approach can also be tackled through a properly designed pricing scheme.\footnote{See Nash, supra note 7, at 729-30.}

\footnote{\textcopyright 2018 by the University of California.}
In practice, the construction of new roads and new lanes is a common and popular policy response to traffic congestion, even though this response only increases capacity and does not address the issue of efficiency and efficacy in traffic congestion. An increase in road capacity merely ameliorates congestion temporarily without tackling the root problem of driving. Individual drivers will still fail to take into account the congestion externalities imposed by one’s road usage on other road users. In addition, building more roads may simply induce more travel, particularly over time. The popularity of increasing road capacity as a policy response to congestion reflects the strong support of powerful interest groups. These interest groups include the automobile and construction industries, which enjoy the benefits of increased demand for road transportation and road construction, respectively. Further, property developers, property owners, and local businesses along the new roads stand to reap significant benefits from increased road accessibility and are thus strong supporters of such projects. The local economy also benefits from increased employment and public expenditures, particularly if the funds are from a higher level (e.g., federal funding in the United States).

**B. China’s Evolution on Vehicle License Quotas and Congestion Pricing**

The rapidly increasing demand for road transportation caused by China’s rapid economic growth over the past two decades has rendered traffic congestion a persistent problem in major Chinese urban population centers. The headline grabbing stories of traffic congestions in Beijing during 2010 underscored the endemic congestion problem in Chinese...
In addition to ramping up road construction, the Chinese municipal governments in several major cities have introduced quotas on vehicle licenses to curb the growth in vehicle use. This section examines the different allocation mechanisms adopted by different Chinese cities and discusses the resistance to congestion pricing.

I. **Allocations of Vehicle License Quotas**

Aside from the question of how many vehicle licenses should be issued under the quota system, the key issue is how these vehicle licenses should be allocated. This section traces the evolution of the allocation mechanisms from market auctions in Shanghai, to random lotteries in Beijing and Guiyang, and finally to a hybrid compromise in Guangzhou that is part auction and part lottery.

a. **Market auctions in Shanghai**

Shanghai, the largest Chinese urban population center, was the first city in China to set up a vehicle license quota program in response to growing urban congestion. The first competitive auction was held in 1994 to allocate a limited number of vehicle licenses. Prior to 2000, the mechanism was a closed auction with reserve prices, such that the bidders did not know about other bids until the bidding was over and the bids were required to be above the stipulated minimum price. The municipal government converted the closed auction to an open auction without reserve prices as of 2001. Vehicle licenses for imported cars were initially auctioned separately and were usually sold at a price several times higher

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61 Id.


than those for local cars. The auctions for the vehicle licenses for imported and local cars was merged in 2003. To reduce speculation, the auction mechanisms were tweaked slightly in 2008 to allow bid adjustments before the close of bidding. The high demand for cars has pushed the auction price to record highs, hitting RMB 80,000 in 2013 (approximately USD 13,000, which is more than the price of some new cars).

The Shanghai vehicle license quota program is generally effective. While traffic congestion persists in Shanghai on weekends and public holidays, the congestion level is generally regarded by Chinese commentators as significantly better in Shanghai than Beijing, the Chinese capital and second largest urban population center in China. The proceeds from the auction have also helped subsidize important public transportation initiatives, such as rebates for public transportation transfers, free public transportation for the elderly, and subsidies for remote public transportation routes.

The neighboring municipality of Wenzhou implemented a similar vehicle license quota and auction system in 1997, but abolished it in 2007. This was not surprising because the auction allocation mechanism was continuously subject to criticism. In particular, a high level official from the Ministry of Commerce caused a furor in 2004 by publicly criticizing the Shanghai measures for imposing a monetary payment for vehicle registration that exceeded the requirements set forth in the Road Traffic Safety Law. There were also concerns by academics that the substantial revenue

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64 See Yue Haiyin & Fan Junfen, Shanghai shi Siche Paizhao Paimai de Xingzheng Faxue Sikao [Reflection of Shanghai Municipal Vehicle Auction from the Administrative Law Perspective], 7(6) J. NINGXIA COMMUNIST PARTY INST. 95 (2005).


67 Ai Xin, supra note 66.

68 Qiche Xiangou Fengbao Jiangzhi [Storm of Vehicle Purchase Restriction is Imminent], ECON. & NATION WKLY (CHINA), Aug. 20, 2012.

69 Zhang Haipeng, Minge Weiyyuan tian Zhongjie Wenzhou Shiche Haopai Paimai Zhidu [Proposal by Revolutionary Committee Member Led to Termination of Wenzhou Vehicle Auction System], Oct. 6, 2008, available at http://www.minge.gov.cn/txt/2008-10/06/content_2502424.htm (critiquing the ineffectiveness of auction mechanisms given the lack of travel restrictions on non-Wenzhou registered vehicles in addition to the hefty price of the measure).

available under such regulatory schemes would distract the government from genuine public welfare considerations.  

The opposition to the Shanghai vehicle license quota program has cumulated into legal actions. In 2011, litigation challenging the lack of any publicized legal basis for the auction was decided in favor of the government on the basis that the government’s general reference to the Road Traffic Safety Law and Auction Law was a sufficient legal basis for the vehicle license auction.  

Around the same time, Chinese activist lawyers lodged a complaint with the Shanghai Development and Reform Commission, alleging that the auction was an illegal administrative monopoly, but this complaint was dismissed. While the Shanghai municipal government has remained steadfast in the implementation of the auction, it has begun to proclaim—in an attempt to deflect criticisms—that the auction is only a temporary measure that will be phased out upon the improvement of overall traffic conditions.  

b. “Fair” lottery in Beijing and Guiyang

When it was Beijing’s turn to implement a vehicle license quota in 2011, the controversial auction mechanism was shunned. The Temporary Regulations on the Control of the Number of Small Vehicles was enacted to set up a vehicle license quota scheme. Instead of using auctions, these vehicle licenses were allocated in lotteries, where the winner received the license for free. The vehicle license is non-transferable and void if not exercised within six months. To ensure fairness and transparency, the

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76 Art. 3, Temporary Regulations on the Control of the Number of Small Vehicle, supra note 75.
77 Id. at art. 6.
process of the lottery is conducted by high-level government officials and subject to stringent supervision by notaries and the Ministry of Supervision. More than 180,000 individuals who met the residency requirement participated in the first lottery, with a success ratio of 10.6:1. Many of those who won did not register a vehicle, and only 35 vehicles were registered on the first day. This suggests that most participants of the lottery were not in need of a vehicle. The odds were further reduced in subsequent lotteries, reaching a mere ratio of 47:1 in 2012 with participation driven not by a genuine need for vehicles, but simply the hope of winning a prize in a lottery. This mismatch between actual vehicle users and lottery winners of vehicle licenses has led to many under-the-table transactions in the grey market for vehicle licenses, such as the long-term “rental” of a vehicle at a huge fee from a lottery winner.

A similar vehicle license quota scheme was implemented in Guiyang in 2011. The actual measure differs slightly from that of Beijing. Two types of vehicle licenses are issued under the new scheme. The first type of license entitles the vehicle to enter into the inner city area, but the licenses are restricted in number and allocated by lottery without any charge. The second type of license has no restrictions in quantity but is not permitted to enter the inner city area. Another difference under the Guiyang scheme is the more relaxed residency requirement, which does not require the license holder to have continuously paid five years of income tax and social security contributions to the city. The initial lottery of 1,800 vehicle licenses (down

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78 Liu Zeling & Liu Zhenni, supra note 75.
79 Id. The success ratio of the Shanghai auction is only 2.8:1 even during periods of high participation level. See Shanghai Siche Paijie Suoci ‘poba’上海私车牌价 首次 “破八” [Shanghai Private Vehicle License Price Exceed Eighty Thousand for the First Time], LIANHE ZAOBAO 联合早报, Feb. 24, 2013.
81 Liu Zeling, supra note 80.
82 Ai Xin, supra note 66; Zhou An, supra note 64.
83 Ai Xin, supra note 66; see also Storm of Vehicle Purchase Restriction is Imminent, supra note 68; Zhou An, supra note 66. Under this form of circumvention, persons who need to travel with cars but failed to win the lottery can sign a long-term vehicle rental contract with lottery winners. Ai Xin, supra note 66. The latter party will buy and register a car of the “renter’s” choice, and allow the “renter” to use the vehicle exclusively throughout the term of the contract, which can be several years. Id. In return, the “renter” will pay the lottery winner the cost of the vehicle in addition to a premium that is essentially the value of the vehicle license. Id.
85 Id.
86 Id.
from a prior monthly average of 4,000) produced a total of 17,258 applications.87 Car buyers often have family members, relatives, and friends participate in the lottery because each person only has one chance.88

Statistics suggest that the program was successful one year into its implementation, with the annual increase in vehicles reduced by half and average traffic speed in the inner city improved by 28%.89

The free lottery mechanism and purported temporary nature of the restrictions of the Guiyang measure dampened opposition, although concerns were expressed about the vehicle license quota scheme being a de facto restriction on vehicle sales which would violate government policies for the automobile industry and general economic development.90 In particular, the Development and Reform Commission has publicly opined that the Guiyang measures are contrary to the country’s economic development plan for the automobile industry.91

c. Hybrid compromise in Guangzhou

In 2012, Guangzhou, China’s third largest city, became the latest city to implement a vehicle license quota program.92 Framed as a temporary measure with a trial period of one year, vehicle licenses were capped at ten thousand new vehicles every month.93 The quota of vehicle licenses represents a reduction of approximately 47 percent of the average monthly vehicle growth from the previous year.94 Learning from the pitfalls of high priced (and allegedly unfair) auctions in Shanghai and from the inefficiencies of a pure lottery, Guangzhou adopted a hybrid allocation mechanism. Vehicle licenses are primarily allocated in two different ways: half through a free lottery and half through an auction with a reserve price of

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88 Id. One interviewee stated that he had amassed 11 applications through his friends and relatives, all of which failed. Id.
90 Fagai wei Shouci Manqué Biaotie Guiyang Qiche Xiangou ling Weifan Zhengce [Development and Reform Commission for the First Time Explicitly States that Guiyang’s Vehicle Purchase Restriction is Contrary to Policy], ZHONGGUO QICHE GONGYE XINXI, July 20, 2011.
92 Zhou An, supra note 66; Zeng Shi, supra note 92.
93 Zeng Shi, supra note 92.
RMB 10,000. A small number of vehicle licenses are specifically carved out for environmentally friendly green vehicles and are allocated via a free lottery.\(^95\) Proceeds of the auction are dedicated to public transportation.\(^96\)

The initial rounds of allocation produced limited participation that saw fewer bids in the auction than available licenses.\(^97\) The main reason for the apparent lack of interest is that the vehicle license quota program was not matched by travel restrictions for vehicles not registered in Guangzhou, unlike other Chinese municipal vehicle license quota schemes.\(^98\) Vehicle owners could register their vehicles in neighboring counties and avoid the fees and hassles of the Guangzhou scheme.\(^99\)

2. General Resistance to Congestion Fees

Congestion pricing, the other prominent tool for tackling urban congestion, has been proposed in Chinese urban centers such as Guangzhou\(^100\) and Shenzhen.\(^101\) Congestion charges have also been considered in cities such as Beijing, Hangzhou, Ningbo, Chengdu, and Chongqing.\(^102\)

Nonetheless, these measures face strong resistance in implementation. Objections come in many forms. One important reservation is in regard to the legality and administrative implementation of congestion fees, particularly when vehicle ownership and usage is subject to a myriad of


\(^{96}\) Zhou An, supra note 66.


\(^{98}\) Guangzhou Auction Average Price Nearing Ten Thousand Dollars: Detailed Measures on Travel Restriction Remains Absence, supra note 97; Guangzhou: How is the Next Round of Vehicle License Auction Shaping Up?, supra note 95.

\(^{99}\) Guangzhou Auction Average Price Nearing Ten Thousand Dollars: Detailed Measures on Travel Restriction Remains Absence, supra note 97.


taxes and charges. 103 The lack of complementary public transportation infrastructure and effective traffic management also raise doubts about the efficacy of congestion charges in actually reducing congestion. 104 There is the inevitable public skepticism about the inequitable and regressive nature of the charges (favoring the rich and the public authorities) and general unhappiness about rising costs of living. 105 In addition, there are real concerns about possible negative effects on the Chinese automobile industry. 106 This is not surprising given the important economic role of the Chinese automobile industry as a driver for the manufacturing sector and consumer consumption. Notably, Beijing decided to forego imposing congestion charges in part to negatively affecting the automobile industry, which was still feeling the effects of Beijing’s earlier restrictions on vehicle licenses. 107

D. Singapore’s Epitomization of Market-based Solutions

With five million people packed into a land area of 442 square miles, 108 urban congestion is a persistent concern for the densely populated island state of Singapore. In sharp contrast to the United States and China, both price-based and quantity-based market instruments feature prominently in Singapore’s regulatory responses to traffic congestion. This section

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104 Lin Junhui et al., Daibiao Huiyuan Jibian Yongdu fei Jinglu da Dushi huo Chizao bude Bushuo [Vigorous Debate on Congestion Charges Among Representatives: Perhaps an Inevitable Eventualities in Big Urban Cities like Beijing and Shanghai], GUANGZHOU DAILY, Mar. 12, 2012, available at http://news.xinhuanet.com/politics/2012lb/2012-03/12/c_122820630.htm (last visited July 30, 2012); Ma Lianhua, supra note 103. Otherwise known in economic literature as “inelasticity of demand,” the argument posits that the demand for vehicle travel will remain high even with congestion charges because there are no practical alternatives in the form of public transport. Lin Junhui et al., supra.

105 Lin Junhui et al., supra note 104; Ma Lianhua, supra note 103.

106 Ma Lianhua, supra note 103. Congestion charges arguably decrease the attractiveness of car travel and consequently reduces the domestic demand for automobiles.


examines Singapore’s twin policies of market-based vehicle license quotas and congestion pricing.

I. Certificate of Entitlement: Auctioning of Vehicle Ownership Licenses

The Certificate of Entitlement ("COE") is a vehicle quota system that has been in effect since 1990 as a means to control traffic congestion. It is a competitive tender system in which potential vehicle owners bid for a limited number of car-ownership licenses. Bidding is conducted electronically by sealed tender with licenses sold at the price of the lowest successful tender price. The strong demand for vehicles and the limited numbers of licenses have resulted in high prices that often exceed the cost of new cars. The mechanism was tweaked several times in response to the exploitation of loopholes by car dealers and potential car owners. For example, because the licenses were initially transferable and could be applied to any vehicle, speculation in the licenses and a corresponding rise in prices resulted and eventually led to transfer restrictions. A cheaper vehicle license that was meant for use on the weekends and could only operate on weekdays with the purchase of coupons was revamped after luxury cars owners realized that the savings from the cheaper vehicle license more than made up for the additional costs of daily coupons. Notwithstanding these loopholes, Singapore’s use of a quantity-based market mechanism was considered successful in curbing vehicle growth in Christian Iaione’s comparative case studies. Indeed, the rationale of the Singapore

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110 Certificate of Entitlement, supra note 12, at col. 729 (Mah Bow Tan).
111 Rex S. Toh & Sock-Yong Phang, supra note 109, at 28. As a simple illustration, say there are two COEs to be issued, and there are three bids submitted at the amount of one, two, and three dollars, respectively. Under the Singapore auction rules, the bids of two dollars and three dollars are successful bids, and both successful bidders will each pay two dollars for their COE. This differs from the current Shanghai auction, where the two successful bidders will pay two dollars and three dollars, respectively.
112 Iaione, supra note 7, at 930; Rex S. Toh & Sock-Yong Phang, supra note 109, at 26-27 (providing a detailed breakdown of car prices).
113 Iaione, supra note 7, at 931; Rex S. Toh & Sock-Yong Phang, supra note 109, at 28-29. The transferability restriction mandates the successful bidder of the COE to register a vehicle in one’s own name within six months to avoid forfeiting the COEs. See ONE MOTORING, http://www.onemotoring.com.sg/publish/onemotoring/en/ltainformation_guidelines/buy__sell_a_used/Ownership_Transfer/transfer_fee_computation.html (last visited Nov. 1, 2012). The registration of the vehicle that the COE is applied to cannot be transferred within three months of registration and can only be transferred between the 4th and 6th month upon payment of any increase in COEs’ value between the time of COE bidding and the time of transfer. Id.
115 Iaione, supra note 7, at 929-32.
government for imposing the quota 116 echoed Christian Iaione’s justifications for quantity control over price mechanisms.117

Interestingly, during Singapore’s legislative debate on the implementation of the COEs, queuing and balloting were expressly rejected as methods of allocation because of the windfall profit for those who were merely quick to line up or just lucky.118 The Minister in charge of transportation noted that “[i]t is the Government’s responsibility to collect the market price for the COEs and to use the substantial revenue so collected for public projects which can benefit everyone.”119 The Minister also argued that the revenue collected helped balance the budget and reduced the need to raise taxes.120 Indeed, the Singapore government credited the substantial revenue levied on car ownership as an important reason for the lowering of income tax rates.121 A legislator also noted that while transportation policies relating to car ownership did not affect the majority of the population who were not car owners, the policy could still be potentially detrimental to them. Failure to recoup the windfall to car owners from government regulatory actions would result in less government revenue available for public projects.122

2. Area Licensing Scheme and Electronic Road Pricing: Pioneering Congestion Pricing

In 1975, Singapore became the first country in the world to implement congestion pricing to manage traffic congestion in its business and finance district.123 Under the Area Licensing Scheme, a paper license had to be purchased and displayed on the vehicle for entry into the central business district during morning peak hours.124 Technology advancement in recent times has allowed Singapore to introduce an even more sophisticated Electronic Road Pricing system (“ERP”). The use of electronic card readers allows for reliable automatic fee collection every time the vehicle passes

116 Select Committee Report on Land Transportation Policy, 54 HANSARD (Sing.) Col. 934, Col. 936-937 (1990) (Hong Hai).
117 Iaione, supra note 7, at 908-10.
118 See Certificate of Entitlement, supra note 12, at col. 729 (Mah Bow Tan).
119 Id. at col. 730.
120 Id.
121 Select Committee Report on Land Transportation Policy, supra note 116, at col. 953 (Heng Chiang Meng).
122 Id.
123 See Schuitema, supra note 6, at 100; Sock-Yong Phang & Rex S. Toh, supra note 35, at 17.
124 Sock-Yong Phang & Rex S. Toh, supra note 35, at 17; see also Rex S. Toh & Sock-Yong Phang, supra note 109, at 24-25.
under the gantries. More importantly, the rates are regularly fine-tuned to reflect changes in actual usage (i.e., congestion) of roads. A targeted speed benchmark is set based on the engineering capacities of the roads, and the rates are reviewed quarterly in response to the measured speed on those roads, with rates decreasing upon higher speed and vice-versa. In addition, the rates are adjusted to anticipate changes in traffic flow, such as lower rates during school holidays in which peak-hour traffic is lower. A reduction in taxes related to vehicle ownership (including road taxes and motor vehicle registration fees, but not fuel tax) was also introduced in 2004 to ease possible public objections for the scheme.

The Singapore government justified the congestion charges as being for the “privilege to drive into the restricted area” and as a “better use of our limited road space,” particularly in light of the economic and environmental costs of congestion. The Singapore government in recent years has emphasized that congestion pricing is not a revenue-generating measure, noting the amount of the total vehicle and road tax reduction implemented in conjunction with the congestion pricing is less than the projected increase in revenues from congestion pricing.

The Singapore congestion pricing regime has generally been considered a success by international and American commentators in reducing traffic and relieving congestion in the district. However, some empirical studies indicate that the measures may have gone too far, leading to under-utilized roads to the detriment of overall welfare. Nonetheless, its success “is at least somewhat responsible for the increased attention paid to congestion pricing regimes domestically [in the United States].”

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125 See Iaione, supra note 7, at 918; Sock-Yong Phang & Rex S. Toh, supra note 35, at 21-22; Rex S. Toh & Sock-Yong Phang, supra note 109, at 30-31.
126 Sock-Yong Phang & Rex S. Toh, supra note 35, at 22.
127 Id.
128 Id. at 23.
129 Budget, Ministry of Communications, Hansard (Sing.) (Mar. 19, 1975) vol. 34 at col 583 (Yong Nyuk Lin, Minister for Communications).
130 Electronic Road Pricing, Hansard (Sing.) (12 Oct. 1998) vol. 69 at cols 1297-1298 (Mah Bow Tan, Minister for Communications).
131 Electronic Road Pricing (Shift in Use), Hansard (Sing.) (Feb. 15, 2008) vol. 84 at cols 317-321 (Raymond Lim Siang Keat, Minister for Transport).
132 Id. at col. 322 (Raymond Lim Siang Keat, Minister for Transport).
133 Iaione, supra note 7, at 917-18; see Schuitema, supra note 6, at 99-100; Sock-Yong Phang & Rex S. Toh, supra note 35, at 24.
134 Sock-Yong Phang & Rex S. Toh, supra note 35, at 20 (discussing the various empirical studies); see Rex S. Toh & Sock-Yong Phang, supra note 109, at 25.
135 See Nash, supra note 7, at 723.
IV. MARKET MECHANISMS THROUGH THE LENS OF PUBLIC PROPERTY

The comparison of traffic congestion policies in the United States, China and Singapore reveals a divergence in regulatory approaches. One particular feature that emerges is the stronger commitment to market-based mechanisms in Singapore’s regulatory approach compared to the United States and China. This part explains how the differences in traffic congestion policies reflect the respective underlying conception of public property in the three jurisdictions.

A. Market-based Mechanisms and the Public Property Protection Justification

Market-based mechanisms are predominantly featured in the traffic congestion policies of Singapore. Whether in terms of price-based instruments or quantity-based instruments, Singapore leads the way. In contrast, the utilization of market-based mechanisms remains haphazard in China and the United States. This is somewhat ironic, especially for the United States, because the common perception is that the cultural and ideological affinity for market and property rights in the United States allows for greater and faster implementation of market-based regulatory solutions.136

Of course, the fact that market-based mechanisms enjoy greater actual implementation in a non-U.S. jurisdiction is not in itself particularly unusual. Chile is often noted as an example in which the free market economic thought of the Chicago School enjoys much greater manifestation than in the United States. 137 In particular, the Chilean privatization reform of pensions 138 echoed the United States’ reform proposal of private social security accounts 139 that purportedly reflects the American cultural

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136 See, e.g., Wyman, supra note 11, at 420-21 & n.6 (2002); Sinden, supra note 11, at 534-38 (noting with skepticism the United States’ unquestioning preference for market solutions).

137 See Judith Teichman, Merging the Modern and Traditional: Market Reform in Chile and Argentina, 37 COMPARATIVE POLITICS 23, 26-30 (2004).

138 Joseph J. Norton, Privatization of Public Pension Systems in Developing Nations: A Call for International Standards, 64 BROOK. L. REV. 817, 841-51 (1998). Chile’s reform involved switching the pension from a defined contribution scheme to a defined benefit scheme with individual account. Id. In essence, the amount an individual would receive during retirement is now directly tied to the individual’s contributed amount and the performance of the individual’s investment choice for the contributed amount. Id. For comparative analysis of Chilean pension schemes with that of other countries, see Elizabeth D. Tedrow, Social Security Privatization in Other Countries: What Lessons Can be Learned for the United States?, 14 ELDER L.J. 35 (2006).

imperative of a free market economy.\textsuperscript{140} The situation of Singapore could be similar to the Chilean experience, which resulted from an unorthodox alliance of Chile’s authoritarian regime with a close-knit group of technocrats.\textsuperscript{141}

What is interesting is the rationale for adopting a market-based mechanism in Singapore over other allocation mechanisms, such as lottery or queuing. Aside from the typical economic efficiency arguments of allocating resources to the highest value users and lowering regulatory costs,\textsuperscript{142} an important justification was to collect adequate charges for the benefits accruing to private entities.\textsuperscript{143} A critical justification alluded to in the Singapore legislative debate is the concept of vehicle licenses as a public resource for which the government has a responsibility to recoup fair value.\textsuperscript{144} The congestion charges were also justified as a charge for the “privilege to drive into the restricted area”\textsuperscript{145} and the “use of our limited road space.”\textsuperscript{146}

In essence, adopting market-based mechanisms appears to be based on a key pillar of socialist ideologies: the protection of public property.\textsuperscript{147} In the eyes of the Singapore government, regulatory permits and roads are publicly owned property that should only be allocated upon collection of appropriate charges from recipients. Because market-based mechanisms—whether competitive auctions or prices based on market transactions—are the most effective means to ensure that the government collects maximum value for these resources, such mechanisms are the preferred allocation devices for the Singapore government.

This insight into the justifications for the market-based mechanisms in Singapore raises two interesting points. First, Singapore’s government is adopting market-based mechanisms pursuant to its ideology of public property protection rather than an affinity towards free-market or private property. Second, the Singapore approach differs greatly from the policies

\textsuperscript{140} Patricia E. Dilley, Taking Public Rights Private: The Rhetoric and Reality of Social Security Privatization, 41 B.C. L. REV. 975, 980-81 & 1012 (2000); Templin, supra note 139, at 402 (describing a free market economy as “a system of personal ownership and personal responsibility”).
\textsuperscript{141} Teichman, supra note 137.
\textsuperscript{142} See Certificate of Entitlement, supra note 12, at col. 729 (Mah Bow Tan) (“COEs will go to the persons who value them most and who are able and willing to pay.”).
\textsuperscript{143} See supra Part III.D.1; Budget, Ministry of Communications, supra note 129.
\textsuperscript{144} See supra Part III.D.1.
\textsuperscript{145} See Budget, Ministry of Communications, supra note 127.
\textsuperscript{146} Electronic Road Pricing, supra note 130, at Col. 1297-1298.
\textsuperscript{147} See infra Part IV.B.1.
adopted in China, even though protection of public property is otherwise featured prominently in the legal and public discourses in China. The remainder of this part addresses these two matters by critically examining the concept of public property in Singapore, China, and the United States.

B. China: Too Little “Property” in “Public Property”

One notable difference between the traffic congestion policies in China and Singapore is that while quotas for vehicle licenses are utilized in both jurisdictions, market auction as an allocation mechanism is rarer in China. This section explains that while public property is heavily emphasized under the ostensibly Chinese Socialist regime, regulatory permits are not typically regarded as property that should be allocated to private entities only upon receipt of valuable consideration.

1. Emphasis in Public Property Protection Under Chinese Socialist Ideology

Protection of public property is of the utmost importance in China. China has been under the tight reigns of the Chinese Communist Party since 1949.\(^{148}\) Notwithstanding a series of social and economic reforms since the 1980s,\(^{149}\) China’s communist and socialist ideological tradition remains a dominant influence in law and policies, particularly in terms of rhetoric.\(^{150}\) One distinct manifestation of this ideology is its emphasis on protecting public property.\(^{151}\) The Chinese Constitution gave public property

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\(^{148}\) See Mo Zhang, supra note 13, at 324-25.


\(^{150}\) Wuquan fa (五泉山发) [Property Law] (promulgated by Nat’l People’s Cong., Mar. 16, 2007, effective Oct. 1, 2007), art. 3 (China) (“In the primary stage of socialism, the state upholds the basic economic system under which the public ownership shall play a dominant role and diversified forms of ownership may develop side by side.”). See also Xianfa [Constitution] Preamble (2004) (China). For a discussion of the ideological evolution of China’s socio-economic model since 1949, see Mo Zhang, supra note 13, at 325-37.

\(^{151}\) Public ownership is essential in socialist economy, though progressive socialist thinkers argue that it encompasses more than state ownership. See, e.g., Ge Yang, Jingji zhuaxing qi gongyou chanquan zhidu de yanjiu yu jieshi [Evolution and Explanation of Public-Owned Property System During Economic Transition] 40-61 (2009); Jing Weiming et al., supra note 149, at 38-42. After wiping out private economic entities during the period of 1960s and 1970s, private entities were gradually allowed since the 1978 market reform. See 30 Years of Economic Reform in China:
“inviolable” status\textsuperscript{152} long before it recognized private property in 2004.\textsuperscript{153} This is not surprising because a major platform of the Chinese Communist party is instituting a socialist state whereby public ownership is the dominant form of ownership in the country.\textsuperscript{154} Public ownership of property is deemed crucial for the survival and prosperity of the infant socialist state.\textsuperscript{155} Notwithstanding the transition into a “socialist market economy” and the increased recognition of the economic contributions from privately owned entities, publicly owned property continues to be viewed as a fundamental pillar of the Chinese state.\textsuperscript{156}

This emphasis on public property protection manifests in Chinese law and public discourse. In addition to Article 12 of the Constitution stipulating the “inviolable” nature of public property, Article 53 expressly includes the protection of public property as the duty of the Chinese citizen.\textsuperscript{157} The “sacred and inviolable” nature of state property and its collective ownership by “the whole people” is reiterated in Article 73 of the Principles of Civil Law.\textsuperscript{158} The infringement of state property is also a specific ground for criminal penalties under the Criminal Law.\textsuperscript{159} A Chinese government hospital even utilized the argument that charging for hot water that was previously free was necessary to prevent loss of state property.\textsuperscript{160}
2. “Regulatory Property”: Regulatory Permit as Public Property?

The divergence in regulatory approaches between Singapore and China in the allocation mechanism for vehicle license quotas lies in the differing conceptualizations of public property. The Singapore government recognizes the economic value of these vehicle licenses and treats them as valuable public property that should not be allocated without collection of appropriate charges. Conversely, Chinese jurisprudence adopts a narrower conception of property that precludes recognizing regulatory permits as public property.

a. Ambiguous status of intangible property

One obstacle towards the recognition of regulatory permits as public property is the hesitation under Chinese jurisprudence towards recognition of property rights in intangible property. While the enactment of the Property Law in 2007 is viewed as a monumental milestone in the recognition and protection of property rights, including private property rights,161 the prevailing view in China is that intangible property is not covered by the Property Law. Prominent Chinese property rights scholar Limin Wang emphasized that the Property Law is primarily meant for tangible property and argued for a distinction in the legal treatment of intangible property.162 Professors Yihua Zhang and Xiaojing Luo similarly opined that intangible property is, as a matter of principle, not covered by the general law of the Property Law163 even as they recognized that the international trend is an increased emphasis on the economic value of property as the defining characteristic of property rights.164 Indeed, while Articles 45 to 58 of the Property Law set forth different types of property owned by the state or collectives, the only intangible property explicitly referred to is the telecommunication spectrum.165

Part of the confusion arises because of terminology. The English translations of both caichan quan and wuquan is “property rights” even

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163 WUQUAN FAXUE [PROPERTY RIGHTS JURISPRUDENCE] 31-32 (Zhang Yihua & Luo Xiaojing eds., 2010).
164 Id.
165 Id.
though the two phrases have different meanings. Wuquan has a narrower meaning, and generally refers to tangible property, as discussed in the previous paragraph. Caichan quan, conversely, is given an essentially economic definition as rights to certain economic interests. The interchangeable use of the concepts is unfortunately common. For example, Liang Huixing and Chen Huabin, in their textbook on the Property Law, seem to regard them as equal in their discussion on the relationship between the constitutional protection of property ("caichan") and the Property Law provisions against property infringement ("wuquan"). The Property Law ("law on wuquan") itself only serves to confuse matters because while the bulk of the statute addresses conventional tangible property, there is a special chapter on ownership that addresses various state-owned property extensively in the broader economic sense ("stated-owned caichan"). Indeed, Article 45 provides a catchall provision that property ("caichan") that is deemed to be owned by the state under the law shall be owned by the state.

The exclusion of intangible property from the Property Law does not mean that intangible property is not recognized and protected under the law. Chinese academics do recognize that state-owned property ("caichan") does include intangible property. There is also legal recognition in the courts that the business transactions of state-owned enterprises are part of their assets. Limin Wang’s exclusion of intangible property from the Property Law is premised on his argument that specific legislation that regulates matters relating to different classes of intangible property. This approach is indeed reflected in a recent interpretative book by the official law publisher for the State Council legal office. Thus, while intangible property is not precluded from legal recognition as a form of property, the content and extent of legal protection (or the lack thereof) is contingent on specific legislation dealing with the particular form of intangible property. In the particular context of regulatory permits, the analysis of whether

166 See supra notes 160-165.
167 PROPERTY RIGHTS JURISPRUDENCE, supra note 163, at 31; Mo Zhang, supra note 13, at 322.
168 LIANG HUIXING & CHEN HUABIN, supra note 161, at 39-41.
170 LIANG HUIXING & CHEN HUABIN, supra note 161, at 39-41.
172 WANG LIMIN, supra note 162.
regulatory permits are part of public property ("caichan") is dependent on the law governing regulatory permits—the Administrative Permit Law.\(^{174}\)

\textit{b. Administrative permits under the administrative permit law}

The Administrative Permit Law was enacted in 2003 to enhance administrative accountability and governance in China.\(^{175}\) The “legislative purpose clause” of the Administrative Permit Law framed the law as regulating administrative permits to protect the legal rights and interests of private entities and to promote the public interest and social order.\(^{176}\) The official legislative explanation of this clause also emphasizes the goal of effective implementation of the system of administrative permits and protecting the citizens and other private entities.\(^{177}\) This emphasis is echoed in the judicial interpretation of the Administrative Permit Law as well.\(^{178}\) The recognition of administrative permits as a form of public property requiring valuable considerations before transfer to private entities is prima facie incompatible with the ostensible legislative focus on protecting private entities.

The Administrative Permit Law does envision the use of market auctions as the allocation mechanism for regulatory permits under certain circumstances. Article 53 read together with Article 12(2) of the Administrative Permit Law provides for the use of “tender, auction and other fair competitive measures” as the default means of allocating regulatory permits concerning the “exploitation of limited natural resources, allocation of public resources and market entry into industries that involve direct public interest.”\(^ {179}\) These two provisions were used by Chinese academics to justify the legality of the Shanghai auction of vehicle licenses.\(^{180}\) The official legislative explanation of the Administrative Permit Law also conceived of the allocation of administrative permits relating to the use of


\(^{175}\) ZHONGHUA RENMIN GONGE GUO XINGZHENG XUKE FA SHIYI [EXPLANATION OF THE ADMINISTRATIVE PERMIT LAW] 2-7 (Zhang Chunsheng & Li Fei eds., 2003).

\(^{176}\) Administrative Permit Law (P.R.C.), supra note 174, at art. 1.

\(^{177}\) EXPLANATION OF THE ADMINISTRATIVE PERMIT LAW, supra note 175, at 1-8.


\(^{180}\) Yang Xiaojun & Huang Quan, supra note 63, at 109.
public or natural resources as analogous to a transfer of property rights and interests (“caichan quanli”) by the country to the permit holders.  

3. **Comparison with Singapore**

While Article 53 and Article 12(2) of the Administrative Permits Law seem to support the conceptualization of those regulatory permits as a form of property, there is a subtle but important distinction between this and the Singapore approach. China’s recognition of the economic value of the administrative permit is tied to the economic value of the underlying resources. This perspective works well for regulatory permits that allow direct exploitation or use of certain economically valuable resources, such as land, minerals, forestry, and telecommunication spectrums. For example, the requirement to pay a substantial monetary sum for an administrative permit to extract a certain amount of minerals or timber is legitimate and desirable because the permit holder is getting valuable resources in return.

However, this perspective does not work well for regulatory permits whose economic value to the holder derives primarily from their mere scarcity instead of the conventionally perceived value of the activity permitted by the regulatory permits. This accounts for the strong and persistent resistance to the use of a market auction to allocate vehicle licenses under a vehicle license quota scheme. Notwithstanding the occasional academic support for the legality of Shanghai’s auction, the common refrain against the Shanghai auction stems from the payment of perceived “exorbitant” prices for the mere “basic” right to own a vehicle. This is particularly important because the vehicle license quota system itself is also said to sacrifice an individual’s right to car usage. In a 2011 article in a prominent Chinese legal journal, Hu Lvyin made a concerted effort to defend the legality of the Shanghai auction. However, his approach of advocating a non-conventional interpretation of the Property Law that views Shanghai’s auction as essentially auctioning the economically valuable right of road usage reflects the need to justify the high price of regulatory permits through the value of the activities.

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181 EXPLANATION OF THE ADMINISTRATIVE PERMIT LAW, supra note 175, at 191.
182 Id. at 173-74.
183 Yang Xiaojun & Huang Quan, supra note 63.
184 See, e.g., “Vehicle Licenses” Auction: Trump Card of Shanghai’s Management of Traffic Congestion, supra note 65 (quipping about Shanghai vehicle plates as the world’s most expensive license plate).
185 Storm of Vehicle Purchase Restriction is Imminent, supra note 68.
186 Hu Lvyin, supra note 72, at 7.
The Singaporean government, in contrast, relies on the economic value of the regulatory permits without emphasizing the economic value of the activities permitted. In the legislative debates on allocation mechanisms for the COEs, the justifications centered on the “windfall profit” that recipients might receive from queuing or balloting and how these recipients can simply cash in on the profit by selling the vehicle licenses to those who actually need the vehicles. Legislators did not rely on the economic value of car ownership to COE holders nor the costs to the government in providing the transportation infrastructure to accommodate the road usage as justifications for the high and rising prices of the COEs.

This approach is relevant for the other common forms of regulatory permits that provide substantial economic value to the holder, but are not conventionally associated with exploitation or use of valuable public resources. The approval for change of land use or change in land use density under a development permit can dramatically increase the value of land for the permit holder. However, there is only a tangential relationship with the use of valuable resources (natural or public). The Singapore planning authority grants development permits for alterations of land use (including increasing land use intensity) only after the payment of development charges. The Ministry of National Development sets the rate in consultation with the Chief Valuer, who takes into account current market values, which are currently set at 70% of the appreciation in land value.

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187 Certificate of Entitlement, supra note 12, at col. 729 (Mah Bow Tan); Select Committee Report on Land Transportation Policy, supra note 116, at col. 953 (Heng Chiang Meng).
188 Certificate of Entitlement, supra note 12, at col. 729 (Mah Bow Tan). Indeed, the COEs quota system was initially conceived as a price mechanism to “restrain” road usage without explicit mention of revenue generation. See Select Committee Report on Land Transportation Policy, supra note 116, at col. 953 (Heng Chiang Meng).
189 Tom Allen, Controls over the Use and Abuse of Eminent Domain in England: A Comparative View, in PRIVATE PROPERTY, COMMUNITY DEVELOPMENT, AND EMINENT DOMAIN 75, 95 (Robin Paul Malloy ed., 2008) (comparing the valuation of GBP 7000 per hectare of mixed use agricultural land versus GBP 2.6 million per hectare of residential “bulk” land).
190 It may be theoretically possible to conceive of development permits as essentially allocating the scarce public resources of land use, where space among built-up areas at any given location is limited. However, it is very uncommon for discourses about granting development permits to revolve around resource allocation.
The crucial aspect of Singapore’s development permit regime is that the
development charges are premised on the “windfall”\(^{194}\) or “increases in
value of land”\(^{195}\) to the permit holders. There was no discussion of
development permits involving allocation of scarce natural or public
resources, as would be required to levy substantial monetary considerations
under the Chinese Administrative Permit Law.\(^{196}\)

C. United States: Too Much “Public” in “Public Property”

The difficulty Chinese jurisprudence has in conceiving of regulatory
permits as a form of property can be contrasted with the conception of
property in the United States that recognizes regulatory permits and other
forms of government regulatory actions as forms of property. However, the
lack of market-based mechanisms in the United States permeates not just its
traffic congestion policies, but in other policy realms as well. This section
traces the evolution of regulatory property and explains how the resistance
toward market auction of regulatory permits in the United States is due to
the one-sided “propertization” of regulatory property that predominantly
emphasizes protection of personal constitutional liberty while overlooking
the initial allocation aspect of property. In addition, this section highlights
how the association of public access with public property in the United
States impedes the implementation of congestion pricing on public roads.

1. Reich’s New Property, Regulatory Property and Statutory Property

Despite its relatively recent development, the conceptualization of
regulatory permits and other forms of government regulatory action as forms
of property has become increasingly well established in common law
jurisdictions. The starting point of the “new property” is inevitably the
seminal 1963 article by Charles A. Reich aptly titled “The New Property.”\(^{197}\)
In this article, Reich highlighted various forms of government-created
wealth, including regulatory actions such as occupational licenses and
franchises.\(^{198}\) He proposed the creation of private property rights, or rights

\(^{194}\) Planning (Amendment) Bill, 41 HANSARD (Sing.) col. 449 (statement of The Cheang Wan,

\(^{195}\) Id. (Lim Kim San).

\(^{196}\) See supra Part IV B.2.b.

\(^{197}\) Reich, supra note 16.

\(^{198}\) Id. at 734-37.
of a similar nature, in this government-created wealth, with the aim of limiting governmental discretion in its allocation and recall.\footnote{199}{id. at 778-85.}

Reich’s pioneering work led to the development of the “regulatory property” concept. Bruce Yandle and Andrew P. Morriss identified “regulatory property” (“a property right created and allocated by a government entity”) as a distinct category from the commons, common property, public property and private property.\footnote{200}{Bruce Yandle & Andrew P. Morriss, The Technologies of Property Rights: Choice Among Alternative Solutions to Tragedies of Commons, 28 Ecology L.Q. 123, 129 (2001).} Steven J. Eagle referred to the term “regulatory property” in describing the valuable regulatory permits that are essentially government-created monopoly privileges.\footnote{201}{Steven J. Eagle, The Really New Property: A Skeptical Appraisal, 43 Ind. L. Rev. 1229, 1239 (2010).} Shi-Ling Hsu defines regulatory property as “property which is governmentally created by unbundling an asset from a regulated right and simultaneously imposing some restrictions on the regulated right and assigning some sovereignty over that right, such as the right to alienate.”\footnote{202}{Shi-Ling Hsu, A Two-Dimensional Framework for Analyzing Property Rights Regimes, 36 U.C. Davis L. Rev. 813, 879 (2003).} Michael L. Wells and Alice E. Snedeker discussed the similar concept of “state-created property” that originates from laws and government actions and typically includes “jobs, building plans, business licenses, and other benefits that can only be taken away for cause.”\footnote{203}{Wells & Snedeker, supra note 17, at 207.} Indeed, there has been increased judicial recognition of property in various regulatory licenses and benefits that has in turn allowed the imposition of due process under the Fifth and Fourteenth Amendments.\footnote{204}{Id. at 172-77 (providing a good summary discussion on the various U.S. court cases on these issues); Lehavi, supra note 17, at 156-57.}

The concept of regulatory permits as property rights has been picked up in other common law jurisdictions as well. Australian courts recognized “statutory property”—property rights arising from bureaucratic-administrative regulations.\footnote{205}{Kevin Gray, Regulatory Property and the Jurisprudence of Quasi-Public Trust, 32 Sydney L. Rev. 221, 224-25 (2010) (discussing the Australian High Court case of Telstra Corporation Ltd v Commonwealth that confirmed the existence of this autonomous form of property).} The context typically involves the issue of constitutional takings; for example, whether a privatized former state-owned telecommunications enterprise can be compelled to allow competitors’ access to its network hardware under statutorily determined compensation rates that are allegedly lower than market value\footnote{206}{Id. at 222-24 (Telstra Corporation Ltd v Commonwealth).} or whether replacing bore licenses (for water) granted under previous legislation with bore licenses that
contain fewer entitlements under new legislation is a taking.\textsuperscript{207} The courts in both cases recognized the property nature of the regulatory permits/licenses, but ultimately dismissed the takings challenge on the basis that these statutory property rights are defined by the ambit of the underlying statutes and are thus inherently fragile.\textsuperscript{208} In New Zealand, Thomas Gibbons has argued for the recognition of property rights in regulatory permits such as resource consents.\textsuperscript{209}

2. \textit{Differing Purposes: Creation of Personal Property Rights vs. Appreciation of Public Property Allocation}

An important feature of these developments is that the recognition of new forms of property in various government regulatory actions is premised primarily on protecting the rights and interests of individuals and not those of the state. Academics frequently emphasize the individual-safeguarding aspect of the new property.\textsuperscript{210} Individual liberty is also in the forefront of Reich’s work.\textsuperscript{211} Indeed, he later wrote of the need to “create more ownership rights” in these forms of government-created wealth to safeguard liberty.\textsuperscript{212}

There are others who recognize “new property” for reasons other than to protect individual liberty. Eleanor Marie Lawrence Brown proposed recognizing a work visa as a form of Reich’s new property,\textsuperscript{213} with the goal that such conception would facilitate her proposal that financial intermediaries (e.g., banks) serve as guarantors for visa applicants.\textsuperscript{214} However, this is entirely unnecessary because the proposal neither touches on the spirit of Reich’s new property (protecting private individuals) nor involves any property at all (her plan is about incentives for enforcement). Indeed, she differentiates her proposal from other “hard” utilizations of market mechanisms that involve allocating visas based on a hefty entry price or even an auction, noting that her plan merely serves to mitigate the

\textsuperscript{208} \textit{Id. at} 66; Gray, \textit{supra} note 205, at 224.
\textsuperscript{209} See generally Gibbons, \textit{supra} note 207.
\textsuperscript{210} \textit{E.g.}, Eleanor Marie Lawrence Brown, \textit{Visa as Property, Visa as Collateral}, 64 VAND. L REV. 1047, 1085 (2011); Eagle, \textit{supra} note 201, at 1255; Gray, \textit{supra} note 205, at 222; Wells & Snedeker, \textit{supra} note 17, at 188-89.
\textsuperscript{211} Reich, \textit{supra} note 16, at 778-85.
\textsuperscript{213} Brown, \textit{supra} note 210, at 1084-87.
\textsuperscript{214} \textit{Id. at} 1071-74.
information asymmetry in visa matters (by co-opting private financial intermediaries for screening and enforcement purposes). Kevin Gray analogizes this “statutory property” and the correlative “regulatory property” with the quasi-public trust to justify the “coupling of commercial privilege with social obligations” (i.e., facilitating limitations for the public interest on otherwise private property). This renders his reference to Reich’s “new property” a little ironic and arguably misconceived.

In any event, the protection of individual liberty and safeguarding individual rights remains the predominant theme in the recognition of such “new property” as regulatory permits and other government actions. Of course, there is nothing wrong per se in such a justification for “new property.” Indeed, the expansion of government in both expenditures and scope renders such government-created wealth even more important and has the dangerous side-effect of magnifying governmental power and dominion over private individuals through the inherent accessory powers arising from discretion and choice in wealth allocation. This increases dependence of individuals on the government and risks making compromising one’s individual rights a condition of accepting this government-created wealth. This state of affairs also aggravates social inequality because powerful, wealthy, and well-organized interest groups can be expected to co-opt the government in furtherance of their interests, to the detriment of the broader society.

The current emphasis on the liberty-safeguarding functions of new property is problematic because it often ends up focusing only on situations that involve the deprivation of these rights. Wells and Snedeker argue that recognizing new property in “jobs, building plans, business licenses, and other benefits” is necessary because it “addresses the constitutional problem created by the tension between persons in a free society entitled to rely on keeping rights they have acquired, and the government seeking (for good or bad reasons) to take those interests away.” While Reich’s original work

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215 Id. at 1099-1101.
216 Gray, supra note 205, at 231-38.
217 Id. at 227-30.
218 Id. at 239.
219 One key justification for the creation of “new property” is the harm to civil liberties and personal independence arising from conditioning the allocation of government largess on broadly construed notions of “public interests.” Reich, supra note 16, at 774-77.
220 Id. at 737-38.
221 Id. at 746-51. See also Reich, supra note 212, at 299 (“With new property, government is always tempted to use its power over a particular form of wealth to control some unrelated kind of behavior.”).
222 Reich, supra note 16, at 756-64; Reich, supra note 212, at 303.
223 Reich, supra note 16, at 764-68.
224 Wells & Snedeker, supra note 17, at 188-89.
discusses in some detail the proposed limits on governmental discretion in allocating this property, his primary concern is the imposition of “unconstitutional conditions” on the granting of such rights and the inclusion of considerations that are irrelevant to the regulatory power. He also opined on the need for procedural safeguards, including the requirement of a fair hearing following the denial of any privilege or benefit, adding that higher standards should be applied to governmental actions that have the effect of a penal sanction.

The other important aspect of property—the initial allocation mechanisms—is often overlooked to the extent that it does not implicate personal liberty or rights. Thus, granting regulatory permits without receiving valuable consideration in exchange posed no problems for Reich and like-minded academics. Indeed, such free allocations are even encouraged. This is in contrast with traditional forms of government property, such as real property (e.g., land) or government contracts, where any allocation or distribution to private entities without adequate consideration will almost inevitably raise a red flag. For example, “newspapers and magazines have been filled with articles about awarding of noncompetitive contracts to politically connected companies.” The small costs borne by private developers in the acquisition of land via eminent domain adds to controversies relating to eminent domain. Such considerations are conspicuously absent in the discourse about new property.

One possible justification for this distinction is that “new” property typically emanates from regulatory actions of the government in which allocations are already premised on public interests considerations. For

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225 Reich, supra note 16, at 778-84.
226 Id. at 783.
227 Id. at 784-85.
228 The premise of Reich’s article is that government is dispensing wealth and distributing largess. Id. at 733.
229 For example, these theories approved of educational aid without conditions on behavior and speech attached. Reich, supra note 216, at 303-04.
231 Daniel B. Kelly, The “Public Use” Requirement in Eminent Domain Law: A Rationale Based on Secret Purchases and Private Influence, 92 CORNELL L. REV. 1, 37-38 (2006). This article examines several eminent domain controversies, including a ninety-nine year lease for just one dollar per year, upheld in Kelo v. City of New London, 545 U.S. 469 (2005). Id. at 37. In another controversial case, the City of Detroit condemned land and then transferred this land to General Motors for a new factory. Id. Detroit transferred the land for USD 8 million even though project would cost the public USD 200 million. Id. The Michigan Supreme Court upheld this use of eminent domain in Neighborhood Council v. City of Detroit, 304 N.W.2d 455 (Mich. 1981). Id. In a third example, Blanchard v. Department of Transportation, 798 A.2d 1119 (Me. 2002), the state of Maine seized a lot and gave it to a developer for one dollar. Id.
example, the allocation of telecommunication spectrum licenses without collection of any monetary considerations was justified on the basis that the allocations were and should be made based on considerations of public interest rather than profit-making potential. Thus, it is unnecessary to consider whether market value has been charged for these regulatory permits and new property. This argument mitigates, but does not resolve the criticism. Allocation of traditional property frequently comes with public interest conditions. For example, public land may be sold or leased with conditions attached, such as maintaining public access or achieving conservation goals. Government contracts may also be set aside specifically for small businesses or for minority-owned or female-owned businesses to support these socially and economically disadvantaged groups. The attachment of conditions premised on public interest considerations is a factor that can reduce or even negate the monetary considerations that the government might otherwise recoup. Nonetheless, it is only a factor. The starting point in deciding the appropriate allocation of property, whether traditional property or new property, should include consideration of whether monetary charges based on the market values of this property should be imposed.

This deficiency can be observed in the context of the allocation of regulatory permits for the use of the telecommunication spectrum. Prior to 1981, the U.S. Federal Communications Commission (“FCC”) adopted the command-and-control approach, allocating spectrum use through “comparative hearings.” Given the great value of the licenses allocated and substantial discretion afforded to the FCC, political peddling was an

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235 For example, cost-free grants to private telephone companies for the use of public property were justified by the benefits received by the community from the provision of the telephone services. See Frederick E. Ellrod III & Nicholas P. Miller, Property Rights, Federalism, and the Public Rights-of-Way, 28 SEATTLE U. L. REV. 475, 485 n.30 (2003).

unsurprising feature of such hearings. Protests about the arbitrariness of regulatory allocation prompted the allocation to be replaced in 1981 by a lottery in which most of the licenses awarded by the lottery were resold. However, there remained room for political influence because entry into the lottery was subject to certain qualifications that were determined by the authorities. Indeed, the legislative history of the federal licensing regime is characterized by legislators maximizing “political support by arbitrating a rent-seeking competition for valuable licenses.” It was only in 1993 that Congress finally authorized the FCC to auction spectrum licenses through competitive bidding. In 1997, bidding was made mandatory for future licensing proceedings with limited exemptions.

The substantial economic value of these regulatory permits relating to the use of the telecommunication spectrum has never been questioned. However, it is significant that the issue has never really been framed the perspective of public property allocation. The primary rationale for the adoption of a market auction remains awarding licenses to the highest valuers. There have been attempts to justify market auction through analogizing spectrum use to conventional property (such as the use of pasture or logging rights). Nonetheless, such arguments failed to stick. Indeed, the “modern consensus” of the United States’ spectrum policy is that market mechanisms (including auction and secondary markets) are the preferred methods for assigning spectrum rights because the primary goal is to allocate the spectrum to its highest value use. While the “[r]ecovery for the public of a portion of the value of the public spectrum resource made available for commercial use” was also stated as an objective underlying the new auction mechanism in the 1990s, this was primarily in response to the substantial budgetary pressure facing the government at that time instead of a genuine appreciation of the public property nature of the regulatory

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237 Eisenach, supra note 236, at 90-91; Crawford, supra note 236, at 966.
238 Ellig, supra note 236, at 77; Rogovin & Citron, supra note 232, at 693 (speculation for spectrum licenses) (2005); Crawford, supra note 236, at 966.
239 Crawford, supra note 236, at 966.
241 Eisenach, supra note 236, at 92-93; Rogovin & Citron, supra note 232, at 693; Ellig, supra note 236, at 966.
242 Eisenach, supra note 236, at 93-96; Rogovin & Citron, supra note 232, at 693-94.
244 Coase, supra note 232, at 17, 24 (noting arguments brought forth by two members of congress supporting the use of auction).
245 Eisenach, supra note 236, at 92-97.
246 Goodman, supra note 243, at 351-52; Rogovin & Citron, supra note 232, at 693.
247 Goodman, supra note 243, at 354 (2009); Crawford, supra note 236, at 967, 973-74.
permits. Even the increasing emphasis on the revenue-generating aspect of spectrum auction in recent times is premised on the efficiency of this form of revenue generation compared to distorting incentives from conventional taxes.\textsuperscript{248} It is difficult to imagine a similar tortuous evolution in the allocation of traditional property, such as land or government contracts.

This contrasts markedly with Singapore’s approach. When selecting the mechanism of allocating its 3G telecommunication licenses in 2001, the Singapore government decided on a competitive auction instead of a “beauty contest” mechanism in which the regulatory authority was forced to decide on the merits of the applications of telecommunication service providers.\textsuperscript{249} As with the justifications advanced in support of the use of the auction mechanism in allocating COEs,\textsuperscript{250} an important rationale driving the Singapore government’s decision is the prevention of “immediate windfall profit” under the “beauty contest” system.\textsuperscript{251} The Minister expressly stated that “the Government has a responsibility to obtain fair value for a scarce resource.”\textsuperscript{252}

Thus, while regulatory permits are recognized as “property” in both the United States and Singapore, the premise for their recognition is different. The United States’ recognition is driven by the desire to introduce safeguards to the recipients and beneficiaries of government regulatory actions. Conversely, the recognition in Singapore is to facilitate the claim of public ownership on the economic values of these regulatory actions.

3. \textit{Two Types of Public Property}

The other feature of United States discourse surrounding public property is that the “public” in public property can indicate two things. First, it can indicate “public” as opposed to “private” ownership. This is salient in the context of inter-government takings as the U.S. Supreme Court clarified that eminent domain of publicly owned property is subject to just compensation even though the Fifth Amendment refers only to “private


\textsuperscript{249} Andrew Wee, \textit{All 4 3G Licence Applicants Qualify}, BUSINESS TIMES (Sing.), Mar. 31, 2001, at 8.

\textsuperscript{250} \textit{Supra} Part III.D.1.

\textsuperscript{251} 3G Telecommunication Licences, 72 HANSARD (Sing.) Col. 1295, at Col. 1296 (Minister for Communications and Information Technology, Yeo Cheow Tong) (2001). Other reasons include allocating “the spectrum to the operators who value it most,” and ensuring a “transparent and fair allocation mechanism.” \textit{Id}.

\textsuperscript{252} \textit{Id}. (noting the potential large sum obtained in similar auction in Europe).
“Public” ownership is also relevant in the application of the Establishment Clause, where display of religious symbols on publicly owned property (but not privately owned property) risks violating the prohibition on the state’s establishment of religion. The loss and squandering of publicly owned property is also an important theme in the discourse of corruption.

There is, however, another common, but different understanding of public property. Public property is also often associated with public access. For example, David Fagundes’s critique about the lack of public outrage over the loss of public property when the Supreme Court upheld the Copyright Term Extension Act in *Eldred v. Ashcroft* (extending copyright protection by twenty years returns what should otherwise be public property back to private hands) assumes that public property signifies property with public access. Legal scholar Amnon Lehavi recognized that it is easy to conflate property with “private property” when there are different types of property regimes such as common property, public property, and open-access property. Public property is again conceptualized as property that is utilized by the public. Bruce Yandle and Andrew P. Morriss’s classification of property into common property, public property, private property, and regulatory property focused on the entity controlling the property, with public property being “property controlled by government.” They observed that the appropriate level of management for the resources may depend on the circumstances. Inherent in their analysis, however, is that public control of “public property” assumes a certain degree of public access by contrast with the more exclusive “private property.” Carol M. Rose’s conceptualization of public property in her critical examinations on

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258 Id. at 677-88.


260 Lehavi, *supra* note 17, at 141-42.

261 Yandle & Morriss, *supra* note 200, at 129

262 Id. at 138.

263 Id. at 136, 138.
the problems arising from the exclusive nature of private property similarly assumes public ownership and public access.\textsuperscript{264}

The association of public property with public use and public access can be traced to ancient Roman law, which recognized that certain property cannot be privately owned or was exclusive to the public.\textsuperscript{265} The first category is \textit{res communes} – property that cannot be legally owned, but which the right to enjoy by all is recognized by the law.\textsuperscript{266} Typical examples include air, running water, and the sea.\textsuperscript{267} Another similar concept, \textit{res publicae}, involves property such as public roads, rivers, and harbors that are typically owned by the state, but which private property interest can exist therein. However, regardless of ownership, the public cannot be excluded from access and enjoyment.\textsuperscript{268} This Roman tradition of treating roads and other key avenues of transportation as classic public property to which public access should be ensured is carried on in the American public trust doctrine.\textsuperscript{269}

This conceptualization of at least some forms of public property as property where the public is entitled the right to access helps to account for the prevailing opposition towards congestion pricing and other tolls. As Carlos Sun observed, “[s]ome believe that travelling is a right and that roads

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\textsuperscript{264} Rose, Romans, Roads, and Romantic Creators, supra note 2, at 96-97; Rose, The Comedy of the Commons, supra note 2, at 711-23.
\textsuperscript{266} Rose, Romans, Roads, and Romantic Creators, supra note 2, at 93-94 (2003); ANDREW BORKOWSKI, TEXTBOOK ON ROMAN LAW 143 (1994).
\textsuperscript{267} An emerging example would be outer space. See Benjamin David Landry, A Tragedy of the Anticommons: the Economic Inefficiencies of Space Law, 38 BROOK. J. INT’L L. 523, 531-34 (2013) (discussing the international law treaties that established outer space as \textit{res communis}).
\textsuperscript{268} Rose, Romans, Roads, and Romantic Creators, supra note 2, at 96-97; BORKOWSKI, supra note 266, at 96-97.
\textsuperscript{269} Rose, Romans, Roads, and Romantic Creators, supra note 2, at 96-97. For a critical comparative discussion about the distinction in the conceptualization of public property under common law and civil law, see Giacinto della Cananea, From (Public) Ownership to Use: A Comparative Analysis, in THE PUBLIC-PRIVATE LAW DIVIDE: POTENTIAL FOR TRANSFORMATION? 297 (Matthias Ruffert ed., 2009).
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are public goods, and as such they should be ‘free.’”270 In the context of the New York City congestion-pricing proposal, opponents argued about the “fundamental fairness problems of charging access to public streets.”271 Opponents also allude to the ideal of roads being accessed by all, rich and poor.272 Indeed, Joseph D. Kearney and Thomas W. Merrill observed “[w]e tend to think of public property as something open to all members of the public on equal terms.”273 Elsewhere, in India, “the creation of toll roads remains anathema to many Indians, who see roads as public property for trucks, rickshaws and ox-carts alike.”274

Part of the problem is the conflation of public access with free public access. Carol M. Rose correctly pointed out that public access does not necessarily imply absence of government intervention.275 Nonetheless, her categorization of the primary goal of government intervention as ensuring orderly access of public property by private entities276 still renders ambiguous whether the imposition of fees or license quotas is an affront towards public access. Rose acknowledged that toll roads are permissible “if the public is otherwise adequately served.”277 However, this simply leaves open the question of whether the amount of toll levied is a factor in determining whether the public is adequately served. In particular, it is arguable that high toll charges on key transport routes—despite their necessity due to severe congestion—would have violated even Rose’s more nuanced understanding of public access.

The Singapore government, conversely, justified the congestion charges as a charge for the “privilege to drive into the restricted area.”278 In a similar vein, the government has no hesitation to speak about using congestion prices to “control,” 279 “regulate,” 280 and “restrain” 281 traffic.

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270 Sun, supra note 24, at 284 (noting that “people confuse the right to free transportation with the constitutional rights that guarantee citizens to move freely between states, to visit another state, or to enjoy state benefits after relocation.”).
275 Rose, Romans, Roads, and Romantic Creators, supra note 2, at 99.
276 Id.
277 Id.
278 Budget, Ministry of Communications, supra note 129, at Col. 582-583 (Yong Nyuk Lin).
279 Full-Day Area Licensing Scheme (Reasons for Introduction), 61 HANSARD (Sing) col. 502, at col. 504 (Minister for Communications, Mah Bow Tan) (1993).
280 Certificate of Entitlement, supra note 12, at col. 731 (Mah Bow Tan).
Indeed, when a more draconian vehicle restriction mechanism that was similar to the “odds and evens” license plate vehicle authorization was rejected, the rationale was that “[t]his is much too high a level of restriction on the movement of private cars for the time being.” The concept of public access to roads does not feature prominently in Singapore discourse about roads management. The next Part will argue that this decoupling of public access from public property is a preferable approach.

V. PUBLIC PROPERTY REEXAMINED

The comparative analysis in the previous Part highlights the divergence in the conceptualization of public property in the United States, China, and Singapore. Drawing from the approach in Singapore, this Part advances a framework of public property that involves a broad economic understanding of “property” to include regulatory permits and a reorientation of “public” that focuses on public ownership and not public access.

A. What Should “Public Property” Mean?

How should public property be properly conceived? To answer that question, this Part analyzes the definition of “property,” the definition of “public,” and the relationship between public property and other forms of property.

I. “Property”

It is useful to start with the “property” part of “public property.” A narrow definition of property that excludes valuable resources is undesirable. In particular, the concept of property should include regulatory permits and other regulatory actions that confer economic benefits to recipients. Conceptually, this article considers all regulatory permits to be public property. Some regulatory permits are by default of only negligible economic value to the holders. In particular, regulatory permits that are not limited in number and that do not require satisfaction of certain qualifying conditions (e.g., incorporation license under modern corporation law regime) do not by themselves confer any noteworthy economic benefits to the holder. This article considers these “worthless” regulatory permits as public property because the fact that a property is of negligible economic value (e.g., a pebble in one’s backyard) neither negates the status of property nor the right of entitlement. The lack of economic value means that considerations of efficiency and redistribution discussed in this sub-section are less pertinent for this type

281 Select Committee Report on Land Transportation Policy, supra note 116, at Col. 935 (Hong Hai).
282 See supra note 27 and accompanying text.
283 Budget, Ministry of Communications, supra note 129, at col. 582 (Yong Nyuk Lin).
284 Conceptually, this article considers all regulatory permits to be public property. Some regulatory permits are by default of only negligible economic value to the holders. In particular, regulatory permits that are not limited in number and that do not require satisfaction of certain qualifying conditions (e.g., incorporation license under modern corporation law regime) do not by themselves confer any noteworthy economic benefits to the holder. This article considers these “worthless” regulatory permits as public property because the fact that a property is of negligible economic value (e.g., a pebble in one’s backyard) neither negates the status of property nor the right of entitlement. The lack of economic value means that considerations of efficiency and redistribution discussed in this sub-section are less pertinent for this type
distinction between “property” and “regulation” because both can be equally valuable.\(^{285}\) This is particularly true for regulatory permits whose numbers are limited under a regulatory scheme.\(^{286}\) The holder of these limited regulatory permits, such as the taxi medallions in New York City, enjoys economically valuable de facto monopolistic rent that accounts for its high price.\(^{287}\) The fact that some of these regulatory permits are tradable further enhances their value. The right of alienation of an asset accounts for a large portion of its value by allowing a higher value (or more efficient) user to obtain the asset.\(^{288}\)

A conceptualization of property that does not include these regulatory permits is incomplete for two reasons. First, the important issue about the efficient allocation of these public resources is sidestepped. Efficiency considerations of resource allocation typically involves an analysis of the following three factors: whether the property is allocated to the highest value user, whether there are any externalities (positive or negative) associated with its use, and the cost of the allocation process.\(^{289}\) Regulatory permits and other regulatory licenses, particularly those that are limited in number, typically represent rights to resource utilization. The nature of regulatory permits and other regulatory actions usually indicates that the externalities consideration dominates the allocation decision and typically manifests in various forms of public interest considerations upon which allocation decisions are based.\(^{290}\) Thus, telecommunications spectrum licenses might be allocated to television stations engaging in public broadcasting that is deemed to be beneficial to the public,\(^{291}\) or development permits (such as zoning decisions) may be granted to projects that benefit the surrounding neighborhood.\(^{292}\)

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286  Shi-Ling Hsu, supra note 202, at 882; Yandle & Morriss, supra note 200, at 144, 161.
287  Eagle, supra note 201, at 1239.
288  Shi-Ling Hsu, supra note 202, at 868, 882.
290  MOORE McDOwELL ET AL., supra note 289, at 405-19.
292  E.g., Dianne Draper, Toward Sustainable Mountain Communities: Balancing Tourism Development and Environmental Protection in Banff and Banff National Park, Canada, 29 AMBIO 408, 414 (2000) (discussing the granting of commercial development permits in a small Canadian mountain town on the basis that the development meet the natural historic heritage standard).
However, there are many other instances where the highest value user consideration should have taken a more prominent role. For example, in the case of limited vehicle license regimes in selected Chinese cities, ensuring that the vehicle licenses go to users who value vehicle usage the most is particularly important in terms of the overall efficiency of the regulatory scheme (beyond the narrow category of non-profit vehicle usage, such as ambulances, police vehicles, and other public service vehicles that are typically exempted from the quota in any event).293 Similarly, there are few reasons why allocation to the highest value users should not be the primary allocation factor for commercial users in the context of the telecommunications spectrum.294 In both instances, the limitation in the number of permits and licenses under the respective regulatory schemes is necessary to tackle the negative externalities arising from the use of resources. However, inefficiency in the form of underutilization of resources can still occur during the allocation of the permits and licenses if the recipients of such permits and licenses are not in a position to make full use of the permits and licenses.295

Second, failure to frame the allocation of regulatory permits as an allocation of public property obscures the potential wealth transfers that take place in these regulatory decisions. Regulatory permits represent substantial economic value for the select few to whom they are allocated. Recipients of the vehicles licenses in Beijing lottery allocation are essentially winners of a state-sponsored lottery. There might, of course, be scenarios in which such wealth transfers are intended and desirable. The role of such wealth redistribution in the proposed definition of “public property” will be explored further in the next section. The main considerations for now are scenarios in which redistribution is not the primary consideration of the particular regulatory regime. Vehicle license permits and the management of traffic congestion in general are not set up to help vulnerable or socio-economically disadvantaged communities. In these scenarios, ignoring the substantial wealth transfer in regulatory allocation decisions invites corruption and rent-seeking296 into the allocation process.297 The

293 One example is a special set-aside of ten percent of the total vehicles license quota for public interest organizations in Beijing. See Zhou An, supra note 66.
295 This is especially so where there are restrictions on transfers (which are common for regulatory permits) or there are significant transaction costs that impede secondary trading.
296 Rent-seeking is the process by which private entities seek to increase their share of existing wealth via exploiting the political process for redistributing wealth. For a recent general restatement on rent-seeking, see GORDON TULLOCK, THE RENT-SEEKING SOCIETY (2005).
government’s regulatory powers are a fertile source of rent.\textsuperscript{298} Indeed, rent seeking involves power-holders utilizing their power to create “new” property rights that generate a flow of income to themselves.\textsuperscript{299} It is possible to conceptualize the government power to redistribute entitlements as a form of property, with public corruption as a form of theft.\textsuperscript{300}

In the same vein, this wealth transfer also represents a huge loss to the public coffers. In the absence of ostensible redistributive considerations, there is little justification for private entities deriving huge benefits from government regulatory actions. Even if transfers are ostensibly prohibited under the regulatory scheme, creative corporate structuring and other contractual arrangements can still allow regulatory permit holders to enjoy huge benefits by effectively “selling” the permits to others. In the case of the telecommunication spectrum allocation during the pre-auction days in the United States, the telecommunication spectrum licenses were essentially sold at high prices via transfers of ownership by the radio and television stations.\textsuperscript{301} Indeed, “virtually all current spectrum licenses paid for their spectrum” as a result of the fact that almost all broadcast stations have experienced at least one ownership change since receiving their broadcast licenses.\textsuperscript{302} Similarly, a lucky winner of the otherwise non-transferable Beijing vehicle licenses can obtain huge monetary payments through a “long-term lease” of their vehicles.\textsuperscript{303} Conversely, huge public revenues are derived from the auctioning of such vehicle licenses in Shanghai and Singapore. This allows the government to capture economic benefits that are otherwise randomly allocated to private entities without any coherent redistributive considerations. This loss of public revenue not only implicates fairness issues in which some individuals enjoy particular benefits at the expense of the public,\textsuperscript{304} but also affects efficiency because revenue

\textsuperscript{298} See EAGLE, supra note 285, at 25; ANDERSON & HUGGINS, supra note 1, at 76.
\textsuperscript{301} Coase, supra note 232, at 22-23.
\textsuperscript{302} See Eisenach, supra note 236, at 117.
\textsuperscript{303} Ai, supra note 66; Storm of Vehicle Purchase Restriction is Imminent, supra note 68; Zhou An, supra note 66.
\textsuperscript{304} See Abraham Bell & Gideon Parchomovsky, Givings, 111 YALE L.J. 547, 554 (2001).
generated through the sale of public resources/assets do not share the identical distorting incentives from conventional taxes.  

2. “Public”

The “public” in “public property” should be reoriented to focus on public ownership rather than public access or public utilization. The current conceptualization of public property tends to include public utilization or access as one of its defining characteristics. The danger of this conceptualization is that it fuses the two separate issues of ownership and allocation, which involve different and distinct analytical considerations. This preempts the otherwise important question of the appropriate mode of its allocation. Stipulating that resources should be available for public utilization is merely a form of an allocation decision—it can be changed and should be changed depending on the prevailing socio-economic conditions and the available technologies.

Public access as a means of allocating resources enjoys the critical advantages of low enforcement costs and can be efficient under circumstances in which the risk of resource over-exploitation is low and the utilization of resources imposes minimal negative externalities on other users. However, these circumstances are not constant, and resources that are efficiently allocated via public access in an earlier age may require other modes of allocation in later times. Technology advancement may reduce the costs of other allocation mechanisms while increased density of utilization (e.g., through population growth) may give rise to over-exploitation and/or negative externalities. For example, national parks are typical public property. Nonetheless, as overcrowding arising from increased demand leads to the degradation of the enjoyment of the visitors and of the natural environment, implementing a limited quota of park permits or increasing user fees for the park may be necessary to conserve its natural value. Indeed, the institution of private property is largely irrelevant where

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306 See Yandle & Morriss, supra note 200, at 167-68.
307 Id. at 129. See also Jeffery, supra note 236 at 97-103 (discussing the establishment of National Parks in the United States and noting the rationale of ensuring access and enjoyment of all citizens).
308 Jeffery, supra note 236, at 100-01; Catherine M. Pickering & Ralf C. Buckley, Swarming the Summit: Managing Tourists at Mt Kosciuszko, Australia, 23 MOUNTAIN RES. & DEV. 230, 231-32 (2003).
309 Pickering & Buckley, supra note 308, at 232-33.
310 Jeffery, supra note 236, at 132-33 (noting the disparity in revenue generated by the low user fees and the high costs of operating expenses in the United States and the practice in Kenya of charging high fees for foreign nationals but low fees for locals).
there is an abundance of resources, but may be necessary to avoid the
tragedies of the commons in the light of intense competing use.

This danger is demonstrated in the strong public resistance towards
congestion pricing in the United States. There is opposition to congestion
pricing and other restrictions on vehicle usage in part because these
allocation schemes infringe on the perceived right of public access.
Indeed, public roads have been the quintessential public property with
inherent rights of public access since Roman times. While the allocation
mechanisms of public access were arguably efficient at that time, the modern
reality of the high density of users challenges the continued efficiency of
such an allocation. Similarly, technological advancement has substantially
reduced the cost of alternative allocation mechanisms. Singapore congestion
pricing was facilitated by the emergence of affordable electronic transponder
technology. However, the assumption of public access—or worse, public
free access—as the defining characteristic of a certain class of public
property unnecessarily impedes the adoption of otherwise effective
mechanisms to alleviate the real social costs imposed by congestion.

Hence, the defining characteristics of “public” in “public property”
should be “public ownership.” The fact that a property owned by the public
is subject to public access merely represents that public access is the
allocation mechanism that the public (via its governing institution) has
chosen for that particular property. As an allocation mechanism, public
access may be normatively desirable after taking into account public interest
considerations such as redistribution. Public access may also be at times the
most economically efficient allocation mechanism for those resources.
However, the public, through the appropriate governing institution, should
be allowed to freely change its chosen allocation mechanisms in response to
changes in public interest considerations or changes in technology and
utilization patterns.

311 Chiappetta, supra note 1, at 304; Rose, The Comedy of the Commons, supra note 2, at 717-18.
312 Merrill, supra note 1, 2085-86 (2012); Rose, Romans, Roads, and Romantic Creators, supra note 2, at 90.
313 See supra Part III.C.3.
314 Rose, Romans, Roads, and Romantic Creators, supra note 2, at 96-97.
315 See supra Part II.D.2.
316 See supra notes 266-68 and accompanying text.
3. The Relationship Between Public Property and Other Forms of Property

The decoupling of public access from “public property” clarifies the relationship between public property and the other forms of property arrangements. Public property tends to be regarded either as a form of property arrangement, parallel to private property, common property and others,317 or as the starting point of an evolutionary process that ends with private property.318 The proper relationship should be neither. Just like how public access is merely an allocation mechanism, the other property arrangements are allocation mechanisms as well, be it the emphasis of identifiable ownership under private property,319 the heavy government intervention in regulatory property,320 or the hybrid property arrangements that can involve varying combinations of private, common, and public elements.321 Thus, under the proposed public property framework, private property is simply public property that is allocated through discrete (and often alienable) private rights to resources. Similarly, the collective property in China where villagers’ committees enjoyed some form of autonomous control and ownership over rural land322 is another form of allocating publicly-owned property in a legal regime that was hostile towards private property.

The proposed public property framework does not make any normative claim about the appropriate allocation mechanism, which would involve a context-specific inquiry into the various considerations such as transaction costs, resources scarcity, redistribution, and equality.323 Rather, the normative thrust of the proposed framework is simply that where allocation of publicly owned resources is involved (including the continued utilization of public access as means of allocation), it will be up to the

317 E.g., Yandle & Morriss, supra note 200, at 129; Lehavi supra note 259, at 2004.
318 E.g., Harold Demsetz, Toward a Theory of Property Rights, 57 AM. ECON. REV. 347-59 (1967); Wyman, supra note 1, 124-25.
319 See Merrill, supra note 1, at 2065.
320 See Yandle & Morriss, supra note 200, at 133.
321 See Lehavi, supra note 17.
322 See Frank Xianfeng Huang, The Path to Clarity: Development of Property Rights in China, 17 COLUM. J. ASIAN L. 191, 211-16 (2004); Shitong Qiao, Governing the Post-Socialist Transitional Commons: A Case from Rural China, 24 COLO. J. INT’L ENVTL. L. & POL’Y 117, 127-31 (2013) (discussing how market and political reform since 1980s have weakened the institutional capacity of villagers’ committees to assert effective control over the property that are theoretically and legally under their charge).
323 See Lehavi, supra note 17, at 202-09; Yandle & Morriss, supra note 200, at 133-148; Merrill, supra note 1, at 2081-94 (discussing the advantages and disadvantages of private property as an allocation mechanism); Chiappetta, supra note 1, at 335-55 (arguing for a functional definition of property that focuses on the practical consequences on resources utilization).
appropriate entity or entities empowered and entrusted with collective
decision-making on behalf of the public to select the appropriate allocation
mechanism.

There is inevitably debate on the identity of the decision-maker and
the manner of the decision-making process. 324 There may be internal
conflicts between the different public bodies, such as tension between local
and central government325 or between different government agencies.326 The
jurisdictional lacuna for resources that lies beyond national boundary (e.g.,
fisheries)327 or that span across jurisdiction (e.g., greenhouse emission)328
can also impede meaningful decision-making on the allocation mechanism.
Such issues of governance and institutional design are beyond the scope of
this article. Nonetheless, the proposed public property framework will
emphasize that insofar as there is an operational governance structure in
place to represent the otherwise amorphous notion of public, there will
usually be an entity (or entities) that can and should consciously make these
allocation decisions.

B. Redistribution, Government Incentive and Regulatory Burden

Conceiving of public property to include regulatory permits while
downplaying the right of public access is not without controversy. The
objections can be sorted into two categories. First, there are concerns about
the adverse redistribution effects whereby the low-income segment of the
population would be excluded in the market allocation of regulatory permits
and public resources that were previously allocated without charge. Second,
the potential for raising revenue through the market allocation of these
“new” public property rights risks distracting government from the exclusive
pursuit of genuine public interest goals. These objections will be addressed

324 E.g., Lehavi, supra note 259 (arguing that major decisions on arranging property rights should be
made by government entities entrusted with the power and duty of collective decision-making, i.e.
legislative and administrative bodies).
325 E.g., Schill, supra note 253, at 880-88 (arguing that just compensation for takings of publicly-
owned property is justified to protect local and state government from the nation’s political process).
326 E.g., Scott R. Christensen & Akin Rabihhadana, Exit, Voice, and the Depletion of Open Access
(discussing the bureaucratic conflict among the different government agencies that plagued and inhibited
land use in Thailand).
327 See Robert J. McManus, America’s Saltwater Fisheries: So Few Fish, So Many Fishermen, 9(4)
NAT. RESOURCES & ENV’T 13, 13 (1995) (noting the “creeping jurisdiction” initiated by the United States
in the 1960s to enforce regulatory control on water surface previously excluded from national regulation).
328 See John G. Sprankling, The Emergence of International Property Law, 90 N.C. L. REV. 461, 475-
77 (2012) (discussing the development of international law towards the establishment of tradable emission
allowance).
below, together with the affirmative case for how the proposed definition of public property promotes efficiency and reduces rent seeking.

I. Redistribuition and “Fairness”

A common objection to the use of market mechanisms to allocate regulatory permits and public property with public access is that imposing monetary charges disadvantages those who are poor. As discussed above, the main objection to congestion pricing in the United States\textsuperscript{329} and China\textsuperscript{330} is that such fees pose barriers to travel for those with less income. Public resistance to large monetary charges attached to vehicle licenses under the Shanghai auction also accounted for the switch to the free lottery allocation in subsequent vehicle license quotas.\textsuperscript{331} The practice of charging steep entry fees to Chinese natural, cultural, and historic tourist attractions has prompted Chinese commentators to express skepticism about the market allocation of the “public property” of these national monuments because of the resulting social inequality.\textsuperscript{332}

These criticisms of inequality are misconceived. First, conceiving of public property as not including public access does not preclude the government from implementing redistributive activities to aid the poor. Just as governments can institute social welfare programs that directly allocate cash and other property to certain target communities such as the poor, disabled, or aged, governments may allocate valuable regulatory permits to those targeted communities on the basis of express redistributive goals. The restraint resulting from the proposed framework is merely a requirement to expressly declare the redistributive purposes whenever beneficial regulatory actions are undertaken, i.e., when regulatory permits are allocated without imposing the appropriate charges or fees based on the value received by the beneficiaries. It is true that vague redistributive justifications may simply be offered and political checks may not be sufficiently robust to ensure the requirement serves any meaningful constraints, which is evidenced by the sometimes blatant wealth transfers undertaken by the government to influential interests groups.\textsuperscript{333} Nonetheless, this is an improvement because the prima facie expectation that appropriate charges are based on the benefits received should raise the bar for government justification of beneficial

\textsuperscript{329}See Sun, supra note 24, at 284; Nash, supra note 7, at 726-27; Schuitema, supra note 1, at 107-09.

\textsuperscript{330}See Lin Junhui et al., supra note 104; Ma Lianhua, supra note 103.

\textsuperscript{331}Zhou An, supra note 66.

\textsuperscript{332}Xiao Zecheng, supra note 265, at 38.

\textsuperscript{333}See Kelly, supra note 231, at 37-38.
regulatory decisions. The government must not merely articulate some form of public interest consideration to justify the regulatory decision (as they do now); instead, the government should have to explain why these public interests considerations trump the need to collect the charges. The increase in public and media scrutiny that is associated with the outrage over the losses of public property to the benefit of private entities also helps to rein in potentially massive wealth transfers in the realm of regulatory actions.

Second, even if a market allocation mechanism is adopted for the allocation of the public property, redistributive goals to the poor are not necessarily advanced under a non-market-based allocation mechanism. The alternative to a market-based allocation is often not targeted redistributive efforts, but merely “free access” or allocation without charges. The absence of charges does not necessarily benefit the poor. In the case study of the allocation of Chinese vehicle licenses, the lucky winners under the lottery system in Beijing received their licenses for free, but there is little to suggest that they deserved the substantial economic value deriving from the licenses. Allocation based on standing in line or lottery merely grants the windfall profit to those who are quick to line up in the queue or who are lucky, as noted in the Singapore legislative debate. Similarly, allowing public property to be allocated through “public access” favors segments of the population that are poised to exploit the resources. In the case of fisheries, that may simply include large corporations with the capital and expertise to out fish local and native fishermen. In the case of roads, time becomes the price charged for road utilization. This does not benefit the poor, particularly when the rich can “save” time by purchasing property in a better location.

If redistribution were a priority, collecting the market fees and redistributing the collected funds would provide a more effective means to redistribute wealth. Shanghai’s practice of using the proceeds from the auction to subsidize important public transportation initiatives, such as rebates for public transportation transfers, free public transportation for the

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334 See supra Part II.C.1.
335 Certificate of Entitlement, supra note 12, at col. 729 (Mah Bow Tan).
337 See Nash, supra note 7, at 688-89; Small, supra note 6, at 410-11.
338 Cf. Small, supra note 6, at 413-14 (“Although the complexity of shifts in labor, housing, and land markets makes these [redistribution] effects [of congestion pricing] hard to predict, the direct effects would hit relatively hardest at low-income people. Not only does road use rise less than proportionally with income, but also time savings are less valuable to low-income than to high-income drivers.”).
elderly and subsidies for remote public transportation routes\textsuperscript{339} does much more to help the socioeconomic disadvantaged communities than the random lottery allocation mechanisms in Beijing and Guiyang. Similarly, the reduction of broad-based taxes under Singapore’s practice of charging substantial fees for beneficial regulatory actions helps to keep general taxes low. Singapore has managed to consistently maintain a healthy budget surplus while enjoying some of the lowest income and corporate tax rates in the world, particularly compared with the United States and European countries.\textsuperscript{340} More tellingly, unlike in the United States,\textsuperscript{341} the amount of government fees and charges collected are significant in comparison with the revenue from general taxes and is one of the key components to these budget surpluses.\textsuperscript{342} This budget surplus has allowed the Singapore government to undertake massive redistribution projects, including providing affordable public housing for 80% of its densely populated urban population and a substantial government subsidy on education.\textsuperscript{343}

This healthy fiscal position is important for effective redistribution because revenue generated through the sale of public resources and assets does not share the same distorting incentives of conventional taxes.\textsuperscript{344} Indeed, taxation is often viewed simply as a revenue-producing device but is in fact one of the far-reaching powers of the government that can impose real costs on private property rights.\textsuperscript{345} Some scholars consider taxation as a form of eminent domain, even arguing that some tax laws are actually unconstitutional takings.\textsuperscript{346} Broadly based taxes such as income taxes and corporate taxes do not treat all taxpayers fairly but benefit certain groups of

\textsuperscript{339} Storm of Vehicle Purchase Restriction is Imminent, supra note 68.

\textsuperscript{340} Budget surplus averages around 2-3% of GDP, with top marginal income tax rate at 21% and corporate tax rate at 18%. See Jianlin Chen, supra note 193, at 49-53; Hugh J. Ault & Brian J. Arnold, Comparative Income Taxation 162-64 (2d ed. 2004).

\textsuperscript{341} William A. Klein et al., Federal Income Taxation 2 (14th ed. 2006) (“Other” constitutes about 4% of the total federal revenue. The rest are “income taxes” (55%), “social insurance” (38%), and “excise taxes” (3%)); Ault & Arnold, supra note 340, at 140-41.

\textsuperscript{342} “Fees & Charges” typically constitute about 10% to 15% of the total government operating revenue. See Singapore Department of Statistics, Yearbook of Statistics Singapore, 2012, 222 (2012); Singapore Department of Statistics, Yearbook of Statistics Singapore, 1997, 192 (1998). When compared to revenue from corporate and personal income tax, the ratio is about 1:4 (i.e., income tax revenue is 4 times more than fees and charges).


\textsuperscript{344} See Hazlett, Muñoz & Avanzini, supra note 248, at ¶26-27; Hazlett, Porter & Smith, supra note 248, at 140.

\textsuperscript{345} See Abraham Bell & Gideon Parchomovsky, The Uselessness of Public Use, 106 Colum. L. Rev. 1412, 1416 (2006).

\textsuperscript{346} Id. at 1432-33.
citizens at the expense of others. Tax laws are subject to intense lobbying pressures, often resulting in provisions catering to interest groups at the expense of general taxpayers.

In summary, while redistribution is ultimately dependent on political will rather than how public property is conceived, the proposed public property framework and the corresponding use of market mechanisms are more effective and efficient in generating resources that can be utilized for redistribution.

2. Revenue Generation vs. Public Interest

Another critique points to the perverse incentives created by the potential for revenue generation when regulatory permits and public-access property are conceived as “property” that could be “sold” to private entities. This is socially harmful because it may lead to an increase in unnecessary regulation as a result of the government’s financial incentives in imposing regulatory regimes that charge recipients for regulatory permits or licenses. The government may also skew the design and exercise of regulatory regimes towards revenue generation instead of genuine public interest. In the context of spectrum auctions, commentators have highlighted the danger of revenue generation distracting government regulatory authorities from enhancing the overall efficiency of society, such as ensuring that resources are fully utilized and maintaining a competitive market. 

This is particularly relevant because the regulatory design underlying the permit auctions heavily influences the bids made, unlike the sale of a government-owned physical commodity (such as oil or timber). Revenue-generating tactics that are not consistent with general social welfare include delaying the auctions (to wait for higher bids), high reserve pricing, and reducing the number of permits offered for auction (possibly granting monopoly power through licensing). Administrative auction can also impose artificial scarcity to drive up prices, leading to insufficient supply of the regulatory permits. Chinese commentators have also criticized the Shanghai vehicle license auction on the grounds that such maximizing of government funds

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348 See KING, supra note 347, at 34.
349 See Hazlett, Muñoz & Avanzini, supra note 248, at ¶98-103; Goodman, supra note 243, at 360-63.
350 See Hazlett, Muñoz & Avanzini, supra note 248, at ¶38; Goodman, supra note 243, at 360-61.
will distract the government from achieving public welfare.\footnote{Peng Xingting, supra note 71.} In a similar
vein, several Chinese academics have begun advocating public access as the main criterion for the classification of property as public in an attempt to
limit governmental ability to utilize market mechanisms (i.e., charging
market rates) in allocating property that should properly be freely accessible
by the public.\footnote{Zhang Jianwen, supra note 265, at 118; Xiao Zecheng, supra note 265, at 37-38.}

The danger of governments pursuing revenue at the expense of public
welfare is a legitimate concern. However, the abuse of government power is
neither caused nor aggravated by the proposed conceptualization of public
property. The cause of revenue generation dominating the government
calculus in the United States is the budget deficit. It was the fiscal crisis in
the early 1990s that finally induced the implementation of the auction for the
telecommunication spectrum licenses.\footnote{See Goodman, supra note 243, at 354 (2009); Crawford, supra note 236, at 967, 973-74.}

Similarly, faced with dwindling budgets, local governments in the United States have integrated land use
planning and zoning efforts with municipal financial planning goals,
resulting in “regulat[ing] for revenue.”\footnote{See Ronald H. Rosenberg, The Changing Culture of American Land Use Regulation: Paying for Growth with Impact Fees, 59 SMU L. Rev. 177, 183 (2006). One example is zoning which imposes drastic
calendar restrictions and prohibits multi-family housing in an effort to reduce the numbers of school
children in the district. This helps to reduce the expenses, since primary and secondary education for the
municipality’s children are often the largest expense on the municipal budget. See EAGLE, supra note 285,
at 423-24.} A consistent approach towards recognizing the “public property” nature of regulatory permits may actually
reduce perverse incentives to generate government revenue at the expense of
social welfare. As discussed in the previous section, the aggressive use of
market mechanisms in Singapore has generated substantial revenue that
helps lead to healthy budget surpluses in a comparatively low-tax
environment.\footnote{See supra Part IV.B.1.} In such a context, the distorting pressure to generate
revenue in the design and implementation of any particular regulatory policy
is reduced. It is noteworthy that while congestion pricing in Singapore is
conceived of as the market allocation of a public property, it is not a revenue
generating measure because of the greater reduction in road and vehicle
taxes.\footnote{See supra Part II.D.} Indeed, the lack of a budgetary deficit crisis in Singapore has
allowed the government to simultaneously increase the number of COEs
issued even though such increase in supply is likely to reduce revenue from
the COE auction.\footnote{Certificate of Entitlement, supra note 12, at col. 731-32 (Mah Bow Tan).}
Moreover, the greater risk to improper exercise of regulatory power is not government regulating for financial gains, but rent-seeking by special interests groups. Regulatory schemes that adopt market allocation and generate revenues for the government typically trigger massive popular objections, as evidenced by the political resistance to implement congestion charges in the United States or the popular objections against auction allocation of vehicle licenses in China. Conversely, rent-seeking is rampant in regulatory regimes that allocate regulatory permits and licenses without charge, resulting in real and substantial economic benefits to the recipients. Throughout history and particularly in the modern administrative state, the state has an indispensable and crucial role in the establishment and rearrangement of property rights through its regulatory power. When the state has the power to manipulate or redistribute individuals’ property rights, the risk of rent-seeking arises where special interest groups devote resources to persuade the state to manipulate or redistribute property rights in their favor. The vigorous political lobbying in the pre-auction allocation of the telecommunication spectrum or the unfortunately common corruption in the grant of development permits demonstrates the greater danger of rent-seeking in thwarting the proper exercise of regulatory power.

In this regard, conceptualizing regulatory permits as public property that prima facie should not be given away to private entities actually helps to reduce corruption and rent-seeking. As observed by Nobel Prize laureate in economics, Ronald Coase, “if these rights were disposed of to the highest bidder, the main reason for these improper activities [of improper influences exercised by politicians and businessman] would disappear.” Similarly, Bruce Yandle noted that “[s]adly for special interest groups, user fees tend to maintain competition and generate no rents for [these groups].” Interest groups would be much more careful to lobby for government actions if they are expected to pay for these benefits.

360 See supra Parts II.B and II.C.2.
361 See Wyman, supra note 1, 123-25.
363 See supra Part II.A.
364 See FRANK J. POPPER, THE POLITICS OF LAND-USE REFORM 10 (1981); see also Todd Lighty et al., Gutierrez Cashes in with Donors, CHICAGO TRIBUNE, Dec. 8, 2008, § 1, at 17 (discussing allegations of improper zoning decisions involving congressman Luis Gutierrez and alderman Manuel Flores).
365 See Coase, supra note 232, at 36.
367 See Bell & Parchomovsky, supra note 304, at 574-75; Levmore, supra note 347, at 291.
Of course, the recognition that allocation of regulatory permits is essentially the allocation of public property does not in itself eradicate corruption and rent-seeking. Corruption remains a persistent problem in the realm of government contracts and the sale of government assets despite the ostensible jurisprudential emphasis on the need for government to obtain best value for the public funds and property. Nonetheless, the expectation and recognition that beneficial regulatory actions should not be dispensed free-of-charge in the absence of explicit redistributive considerations is at least an improvement on the current situation in which no such scrutiny automatically attaches to regulatory decisions.

VI. CONCLUSION

A comparative analysis of the prevalent use of market-based mechanisms in allocating public resources and regulatory permits in the regulatory landscape of Singapore presents a paradox because Singapore’s regulatory approach is both more market-oriented than the United States and more oriented towards public property protection than socialist China. In truth, the paradox is easily resolved through the lens of public property. Public property, the otherwise sacred poster child of socialist regimes, is simply a form of property. If market mechanisms represent the most effective form of property allocation to ensure that public property is not squandered—and often they do—then an emphasis on public property protection will necessarily imply the widespread use of market mechanisms. Similarly, the use of market mechanisms to assign public resources and regulatory permits to the highest value user would also inevitably generate substantial revenue for the public coffers. From this perspective, it is not surprising that Singapore is the shining epitome of both socialist public property protection and market-oriented regulatory approach. One should inevitably lead to the other, and vice versa.

368 See Paula L. Hopper & Robert G. Hensley, Jr., What do you mean I'm a Lobbyist?: New Government Contractor Restrictions and What they will Mean for Banking Institutions, 12 N.C. BANKING INST. 103, 103 (2008).

369 See Perlman, supra note 230, at 3198-205 (discussion of procurement laws and principles in U. S.).

370 See Hann, supra note 151, at 81-95.
However, a reorientation of public property is necessary to achieve the goals of efficiency and public revenue fairness. The definition of “property” in public property must be sufficiently broadened to include regulatory permits and other regulatory actions that bestow substantial economic value to the recipients. This is crucial to avoid unfortunate and unnecessary losses of efficiency and public revenue such as the lottery allocation of China’s vehicle license quota and the pre-1993 allocation of U.S. telecommunication spectrum licenses. Both scenarios are in part caused by the failure to appreciate that public property allocation is at stake. Similarly, the “public” in public property should not be defined by public access. Public access is merely a form of allocation. It may prove to be the most efficient allocation mechanism through the ages, but this historical tradition should not impede adoption of other allocation mechanisms upon alterations in use patterns arising from technological advancement and socioeconomic changes. The severe congestion problem has rendered road usage in densely populated urban areas prime candidates for a switch from public free access to market-based allocation mechanisms. In a world of ever increasing scarcity of previously abundant resources, the refined public property framework proposed in this article provides greater conceptual clarity in resource allocation and externality management.