

Washington International Law Journal

Volume 23 | Number 1

1-1-2014

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Recommended Citation

Jianlin Chen & Jiongzhe Cui, *More Market-Oriented Than the United States and More Socialist Than China: A Comparative Public Property Story of Singapore*, 23 Pac. Rim L & Pol'y J. 1 (2014).

Available at: <https://digitalcommons.law.uw.edu/wilj/vol23/iss1/3>

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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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¹ E.g., Thomas W. Merrill, *The Property Strategy*, 160 U. PA. L. REV. 2061 (2012); Vincent Chiappetta, *The (Practical) Meaning of Property*, 46 WILLAMETTE L. REV. 297 (2009); JAMES W. ELY, JR., *THE GUARDIAN OF EVERY OTHER RIGHT: A CONSTITUTIONAL HISTORY OF PROPERTY RIGHTS* (3d ed. 2008); Katrina Miriam Wyman, *From Fur to Fish: Reconsidering the Evolution of Private Property*, 80 N.Y.U. L. REV. 117 (2005); TERRY L. ANDERSON & LAURA E. HUGGINS, *PROPERTY RIGHTS: A PRACTICAL GUIDE TO FREEDOM & PROSPERITY* (2003).

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?³ What does the “property” in public property cover? Does “property” include regulatory permits⁴ allocated and subjected to the same principles allocating conventional public property, such as land?⁵ 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 world⁶ 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.⁷ 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.”⁸ Two types of market-based regulatory

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.

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.

⁵ See *infra* Parts III.B.2 & III.C.1.

⁶ Michael H. Schuitema, Comment, *Road Pricing as a Solution to the Harms of Traffic Congestion*, 34 TRANSP. L.J. 81, 85 (2007); ARTHUR O’SULLIVAN, URBAN ECONOMICS 258 (McGraw-Hill 5th ed. 2003); Kenneth A. Small, *Urban Traffic Congestion: A New Approach to the Gordian Knot*, in READINGS IN URBAN ECONOMICS: ISSUES AND PUBLIC POLICY 409, 409-10 (Robert W. Wassmer ed., Blackwell 2000).

⁷ See Christian Iaione, *The Tragedy of Urban Roads: Saving Cities from Choking, Calling on Citizens to Combat Climate Change*, 37 FORDHAM URB. L.J. 889, 894-96 (2010); Jonathan Remy Nash, *Economic Efficiency Versus Public Choice: The Case of Property Rights in Road Traffic Management*, 49 B.C.L. REV. 673, 684-94 (2007); Schuitema, *supra* note 6, at 84-92. See also Govinda R. Timilsina & Hari B. Dulal, *Urban Road Transportation Externalities: Costs and Choice of Policy Instruments*, 26 THE WORLD BANK RESEARCH OBSERVER 162, 164-66 (2011) (discussing the various external costs of urban transportation).

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

distributed relatively coherently among the government entities, with local government having the autonomy to regulate roads within its jurisdiction and the central government retaining an overriding veto via the legislation of national. See *Daolu Anquan fa* (道路安全法) [Road Safety Law] (promulgated by the Standing Comm. Nat'l People's Cong., Oct. 28, 2003, effective May 1, 2004), art. 4 & 5 (China).

⁹ See *infra* Part II.

¹⁰ See *infra* Part III.

¹¹ Katina Miriam Wyman, *Why Regulators Turn to Tradeable Permits: A Canadian Case Study*, 52 U. TORONTO L.J. 419, 420-21 & n.6 (2002); see also Amy Sinden, *The Tragedy of the Commons and the Myth of a Private Property Solution*, 78 U. COLO. L. REV. 533, 534-38 (2007) (noting with skepticism the United States' unquestioning preference for market solutions).

¹² See, e.g., *Certificate of Entitlement*, 63 HANSARD (Sing.) Col. 727, Col. 730 (Minister for Communications, Mah Bow Tan) (1994) ("It is the Government's responsibility to collect the market price for the [vehicle license quota] and to use the substantial revenue so collected for public projects which can benefit everyone."); *infra* Part III.C.

¹³ See XIANFA [CONSTITUTION] art. 12 (2004) (China) ("Socialist public property is inviolable. The state protects socialist public property. Appropriation or damaging of state or collective property by any organization or individual by whatever means is prohibited."); Mo Zhang, *From Public to Private: The Newly Enacted Chinese Property Law and the Protection of Property Rights in China*, 5 BERKELEY BUS. L.J. 317, 325-28 (2008) (discussing the concept of socialism and the role of public property); *infra* Part III.B.1.

¹⁴ See *infra* Part III.B.

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.¹⁵ By contrast, regulatory permits are recognized as property under Reich’s “new property” in the United States.¹⁶ Although U.S. courts have recognized regulatory permits as property,¹⁷ these permits are not sufficiently valued when compared to conventional public property, such as government contracts and the ability to obtain land.¹⁸

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,¹⁹ the high demand for roads and the substantial negative externalities that road usage imposes²⁰ 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.²¹

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.

¹⁶ See Charles A. Reich, *The New Property*, 73 YALE L.J. 733, 778-85 (1963); *infra* Part IV.C.1.

¹⁷ See, e.g., Michael L. Wells & Alice E. Snedeker, *State-Created Property and Due Process of Law: Filling the Void Left by Engquist v. Oregon Department of Agriculture*, 44 GA. L. REV. 161, 172-77 (2009) (summarizing various U.S. court cases addressing state-created property); Amnon Lehari, *Mixing Property*, 38 SETON HALL L. REV. 137, 156-58 (2008) (discussing the adjustment of the property regime to maintain an individual’s “legitimate claim of entitlement”).

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.²² 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 1999.²³ In addition, the continuous rapid increase in transportation demand has aggravated the aging and deteriorating transportation infrastructure in United States.²⁴ 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

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.

²⁴ Carlos Sun, *The Toll Road Not Taken: Could the One Option Less Used Make a Difference?*, 21 KAN. J.L. & PUB. POL’Y. 280, 281-82 (2012).

types of congestion and environmental costs.²⁵ 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.”²⁶ 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.²⁷

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.²⁸ 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.²⁹ Due to the prevailing consensus that command-and-control regulations are inefficient, these practices have not been emphasized in discussions on viable policy alternatives.³⁰ 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.³¹

Market-based mechanisms can be divided into schemes based on price or quantity.³² Congestion pricing—typically a toll that is levied on vehicle travel during peak hours—is often touted as a market-based policy response

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.

²⁸ Iaione, *supra* note 7, at 905-06; Thomas W. Merrill, *Explaining Market Mechanisms*, 2000 U. ILL. L. REV. 275, 275-78 (2000).

²⁹ Timothy D. Hau, *Instruments for Charging Congestion Externalities*, in ROAD PRICING: THEORY, EMPIRICAL ASSESSMENT AND POLICY 223, at 223-24 (Börje Johansson & Lars-Göran Mattsson eds., 1995).

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.³³ 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.³⁴ Economists widely regard congestion pricing as an effective way to achieve social efficiency because it forces motorists to internalize the external costs.³⁵ 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.”³⁶

Conversely, quantity-based instruments set limits on the usage of roads.³⁷ Such instruments include issuing limited numbers of vehicle ownership licenses and limited numbers of entry permits in urban centers.³⁸ 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.³⁹

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 transits, 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.⁴⁰ Texas's plan was a subject of the 2008 study by the U.S. Department of Transportation.⁴¹ 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.⁴² 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."⁴³

Such limited implementation is not surprising as "public reaction to congestion pricing tends to be strong and negative."⁴⁴ One main objection to congestion pricing is that it is inherently unfair; the fees impose barriers to travel for those with less income.⁴⁵ Of course, there is also the general resistance against paying for an item that was previously free.⁴⁶ Other objections include privacy concerns, disquiet over the use of market-based approaches, and the potential negative effect on local business.⁴⁷ 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.⁴⁸ Concerns about privacy and utilizing a market-based approach can also be tackled through a properly designed pricing scheme.⁴⁹

⁴⁰ 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).

⁴¹ *See* Nash, *supra* note 7, at 678 n.44.

⁴² Iaione, *supra* note 7, at 919-21; Nash, *supra* note 7, at 735.

⁴³ Nash, *supra* note 7, at 734.

⁴⁴ Nash, *supra* note 7, at 726; *see* Small, *supra* note 6, at 409.

⁴⁵ Sun, *supra* note 24, at 284; Nash, *supra* note 7, at 726-27; Schuitema, *supra* note 6, at 107-09.

⁴⁶ Nash, *supra* note 7, at 728; Schuitema, *supra* note 6, at 109-10.

⁴⁷ 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).

⁴⁸ Schuitema, *supra* note 6, at 107-09; Nash, *supra* note 7, at 730; *see* Iaione, *supra* note 7, at 911.

⁴⁹ *See* Nash, *supra* note 7, at 729-30.

In practice, the construction of new roads and new lanes is a common and popular policy response to traffic congestion,⁵⁰ 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.⁵¹ 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.⁵² The popularity of increasing road capacity as a policy response to congestion reflects the strong support of powerful interest groups.⁵³ These interest groups include the automobile and construction industries, which enjoy the benefits of increased demand for road transportation and road construction, respectively.⁵⁴ 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.⁵⁵ 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).⁵⁶

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 2010⁵⁷ underscored the endemic congestion problem in Chinese

⁵⁰ Iaione, *supra* note 7, at 892; Nash, *supra* note 7, at 694-95.

⁵¹ Nash, *supra* note 7, at 695.

⁵² Nash, *supra* note 7, at 694-700; Iaione, *supra* note 7, at 892; O'SULLIVAN, *supra* note 6, at 269-70.

⁵³ Nash, *supra* note 7, at 701-03; *see also* Iaione, *supra* note 7, at 902-03.

⁵⁴ *See* Iaione, *supra* note 7, at 902-03.

⁵⁵ Nash, *supra* note 7, at 701.

⁵⁶ *Id.* at 701-03. The distinction between local and central government funding is not an issue in the city-state of Singapore. In China, the Ministry of Transport is the central government agency on transportation and a major funding provider for road construction throughout the country. For a breakdown on the central government funding received by the respective provinces, *see* http://www.moc.gov.cn/zhuzhan/tongjigongbao/tongjishuju/gonglushuiyunyewu/gudingzichan_TZWC/ (last visited July 15, 2013).

⁵⁷ For a discussion on how the already dismal traffic conditions in major Chinese cities are often aggravated to a city-wide standstill by external factors such as bad weather (e.g. heavy snow or rainfall) or, in this particular instance, an eve of a long weekend where there is increased vehicle traffic both into and out of the city, *see* Guo Chao et al., *Zuowan Gaofeng Yongdu Huduan Pobei* [Number of Highly Congested Road Sections Exceed Hundred Last Night], THE BEIJING NEWS, Sept. 20, 2010, at A10.

cities.⁵⁸ In addition to ramping up road construction,⁵⁹ 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.

1. *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.⁶⁰ The first competitive auction was held in 1994 to allocate a limited number of vehicle licenses.⁶¹ 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.⁶² The municipal government converted the closed auction to an open auction without reserve prices as of 2001.⁶³ Vehicle licenses for imported cars were initially auctioned separately and were usually sold at a price several times higher

⁵⁸ For a government sponsored survey on traffic conditions in Chinese cities, see *Zhongke Yuan Gongbu 50 Chengshi Shangban Haoshi Paiming Beijing 52 Genzhong Jushou* [*The Chinese Academy of Sciences Announces Ranking on Commuting, Beijing Top the List of 50 Cities with 52 Minutes*], WEST CHINA METROPOLIS DAILY, Jun. 6, 2010, available at <http://news.qq.com/a/20100606/000160.htm>.

⁵⁹ E.g., GUANGZHOU PUBLIC TRANSPORTATION ASSOCIATION, JIJI GOUJIAN YITI HUA LITI JIAOTONG WANG LOU DAZAO XIANDAI HUA QUNIU XING JIAOTONG JICHU SHESHI TIXI [PROACTIVELY SET UP A UNIFIED 3D TRANSPORTATION NETWORK TO CONSTRUCT A MODERN TRANSPORT INFRASTRUCTURE HUB SYSTEM] (February 20, 2012) <http://www.gdcsgj.com/ReadArt.asp?ArtID=1027> (last visited Nov. 1, 2012).

⁶⁰ See Luo Wei & Wang Jintao, *Chepai Paimai de Lilun Yanjiu yu Shizheng Fenxi* [*Theoretical Research and Empirical Analysis of Vehicle License Auction*], 9(6) SCI. TECH. & ENGINEERING (CHINA) 1466 (2009).

⁶¹ *Id.*

⁶² See Hu Xiyin, *Shanghai: 4 Wanyuan Yikuai Chepai neng Jiejue Wenti ma?* [*Theoretical Research and Empirical Analysis of Vehicle License Auction*], 2004(3) CHINA SOC'Y PERIODICAL 51 (2004).

⁶³ See Yang Xiaojun & Huang Quan, *Shanghai Jidong Chepai Paimai Xinwei de hefa xing Renshi* [*Recognizing the Legality of Motor Vehicle License Auction: Interpreting Article 12 & 15 of the Administrative Permit Law*], 2005(4) ADMIN. L. RES. (CHINA) 109 (2005).

than those for local cars. The auctions for the vehicle licenses for imported and local cars was merged in 2003.⁶⁴ To reduce speculation, the auction mechanisms were tweaked slightly in 2008 to allow bid adjustments before the close of bidding.⁶⁵ 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).⁶⁶

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.⁶⁷ 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.⁶⁸

The neighboring municipality of Wenzhou implemented a similar vehicle license quota and auction system in 1997, but abolished it in 2007.⁶⁹ 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.⁷⁰ There were also concerns by academics that the substantial revenue

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).

⁶⁵ See “Chepai” Paimai: Shanghai Zhidu Wangpai [“Vehicle Licenses” Auction: Trump Card of Shanghai’s Management of Traffic Congestion], SOUTHERN WEEKEND (CHINA), Apr. 9, 2012, available at <http://news.66wz.com/system/2012/04/09/103111759.shtml> (last visited July 30, 2012).

⁶⁶ 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 (Sing.), Feb. 24, 2013; Ai Xin, *Sijia che Xianpai Xiangou hequ Hecong* [What Next for Restrictions in Vehicle License], WATER TRANSPORT J. (CHINA), Sep. 21, 2012; Zhou An, *Guangzhou: “yaohao + paipei” nengfou cheng zhidu liangfang* [Guangzhou: Can “Lottery + Auction” be Ideal Solution for Congestion?], TRAFFIC WKLY OF PUB. SECURITY DAILY (CHINA), July 17, 2012, at 4.

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 Weiyuan 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).

⁷⁰ “Vehicle Licenses” Auction: Trump Card of Shanghai’s Management of Traffic Congestion, *supra* note 65.

available under such regulatory schemes would distract the government from genuine public welfare considerations.⁷¹

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.⁷² 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.⁷³ 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.⁷⁴

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.⁷⁵ Instead of using auctions, these vehicle licenses were allocated in lotteries, where the winner received the license for free.⁷⁶ The vehicle license is non-transferable and void if not exercised within six months.⁷⁷ To ensure fairness and transparency, the

⁷¹ Peng Xingting, *Shanghai Cepai Paimai Zhidu “Bianxing ji”* [Evolution of Shanghai Vehicle License Auction Regime], DECISION-MAKING (CHINA), Apr. 2008, at 57.

⁷² Hu Lvyin, *Shanghai shi Zengfu Cheliang Paizhao Paimai yiju de falu Fenxi* [Analysis on the Legal Basis of Shanghai Municipal Government Vehicle License Auction], 2011(5) LEGAL SCI. MONTHLY (CHINA) 3, 3 (2011).

⁷³ Wen Jie, *Shanghai Fagai wei Huiying fan Longduan Jubao: Cepai Paimai bu Weifa* [Shanghai Development and Reform Commission Respond to Complaint of Monopoly: Vehicle License Auction is not Illegal], LEGAL DAILY (CHINA), Apr. 28, 2011, available at <http://biz.cn.yahoo.com/yphen/20110428/333854.html> (last visited Nov. 1, 2012).

⁷⁴ “Vehicle Licenses” Auction: Trump Card of Shanghai's Management of Traffic Congestion, *supra* note 65.

⁷⁵ Xiao Keche Shuliang Tiaokong Zanxing Guiding (北京市小客车数量调控暂行规定) [Temporary Regulations on the Control of the Number of Small Vehicle] (promulgated by Beijing City Government, Dec. 23, 2010, effective Dec. 23, 2010) (China). The vehicle licenses issued every month are limited to 20,000. See Liu Zeling & Liu Zhenni, *Shoulun Gouche Yaohao 5 miao Yaochu 1.76 wan zhibiao* [First Round of Vehicle License Lottery Produce 17600 Allocation], THE BEIJING NEWS (CHINA), Jan. 27, 2011, at A07.

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.⁷⁸ More than 180,000 individuals who met the residency requirement participated in the first lottery, with a success ratio of 10.6:1.⁷⁹ Many of those who won did not register a vehicle, and only 35 vehicles were registered on the first day.⁸⁰ This suggests that most participants of the lottery were not in need of a vehicle.⁸¹ 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.⁸² 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.⁸³

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.⁸⁴ The second type of license has no restrictions in quantity but is not permitted to enter the inner city area.⁸⁵ 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.⁸⁶ The initial lottery of 1,800 vehicle licenses (down

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.

⁸⁰ Liu Zeling, *Beijing Yaohao Shangpai Shouri Changmian Lenqing qin 35 Liangche Dengji* [Poor Response on First Day of Registration for Beijing Vehicle License Lottery: Only 35 Vehicle Registrations], THE BEIJING NEWS (CHINA), Jan. 31, 2011, at A05; see also Zhou An, *supra* note 66, at 11.

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.*

⁸⁴ Shen Liqiong, *Guiyang fabu “Xianche ling”* [Guiyang Announces Vehicles Restrictions], GUIZHOU CITY NEWS, July 11, 2011, available at <http://gzdsb.gog.com.cn/system/2011/07/12/011137503.shtml> (last visited Nov. 1, 2012).

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

⁸⁷ *Dingzhe yali Zoushang Xianche Zhilu Guiyang Shoupi Yaochu 1800 ge Xinyun zhe* [Adopting Vehicle Restriction Under Pressure – Guiyang Select 1800 Lucky Persons via Lottery], CHINA AUTOMOTIVE NEWS, Sept. 5, 2011.

⁸⁸ *Id.* One interviewee stated that he had amassed 11 applications through his friends and relatives, all of which failed. *Id.*

⁸⁹ See Zhou An, *supra* note 66.

⁹⁰ Shen Liqiong, "Xianche ling"bingbu weifan goujia zhengche [Vehicles Restrictions Does not Violate Government Policies], GUIZHOU CITY DAILY, July 11, 2011, available at <http://gzdsb.gog.com.cn/system/2011/07/21/011146891.shtml> (last visited July 30, 2012).

⁹¹ *Fagai wei Shouci Manque 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 See Zhou An, *supra* note 66; Zeng Shi, *Meiyue Xiangou Yiwan Liang Guangzhou Turan Shishi Qiche Xiangou lin* [Guangzhou Suddenly Implement Vehicle Purchase Restrictions of Monthly Quota of 10,000 Vehicles], LIANHE ZAobao (SING.), Jul. 2, 2012.

⁹³ Zhou An, *supra* note 66; Zeng Shi, *supra* note 92.

⁹⁴ 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 Guangzhou¹⁰⁰ 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

⁹⁵ *Guangzhou: xia Yilun Chapai Zhengduo Xingshi heru?* [Guangzhou: How is the Next Round of Vehicle License Auction Shaping Up?], CHINA NEWS SERVICE, Sept. 3, 2012; Zhou An, *supra* note 66.

⁹⁶ Zhou An, *supra* note 66.

⁹⁷ *Guangzhou Jingpai Junjia Jiangjin Wanyuan Xianxing xize Xiangwei Chutai* [Guangzhou Auction Average Price Nearing Ten Thousand Dollars: Detailed Measures on Travel Restriction Remains Absence], CHINA NEWS SERVICE, Sept. 27, 2012; *Guangzhou: How is the Next Round of Vehicle License Auction Shaping Up?*, *supra* note 95, at 15.

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.

¹⁰⁰ *Guangzhou Zhidu Fangan Taolun gao Chulu ni Yanjiu shou Jiaotong Yongdu fei* [Guangzhou Congestion Relief Plan Discussion Draft Released: Studies on Traffic Congestion Charges Planned], CHINA NEWS NET, Jan. 10, 2011, <http://auto.ifeng.com/roll/20110110/508434.shtml> (last visited Nov. 1, 2012).

¹⁰¹ Guo Yao & Cao Jing, *Shengzheng shi Zhengshi Biaotia nin Shouqu Jiaotong Yongdu fei* [Shengzheng Officially Announcement Plans to Impose Congestion Charges], YANGCHENG EVENING NEWS, Mar. 8, 2012, <http://auto.qq.com/a/20120308/000061.htm> (last visited Nov. 1, 2012).

¹⁰² *Difang Lianghui riye Jiaotong Yongdu fei Cheshi Huozai yu Likong* [Vigorous Discussion on Traffic Congestion Charges in Local Legislature Meetings: Possible Negative Profit Impact on Automobile Industry], DAILY ECONOMIC NEWS, Feb. 10, 2012, available at <http://auto.qq.com/a/20120210/000166.htm> (last visited Nov. 1, 2012).

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

¹⁰³ Ma Lianhua, *Zhengshou Jiatong Yongdu fei re Zengyi Beizhi "qi Zhong zui"* [Controversies Surrounding Imposition of Congestion Charges: Seven Sins], CHINA YOUTH DAILY, Feb. 16, 2012, available at <http://auto.qq.com/a/20120216/000227.htm> (last visited Nov. 1, 2012). This argument relies on Article 63 of *Qiche Chanye Fazhan Zhengce* 汽车产业发展政策 [Development Policy for Automobile Industry] (promulgated by National Development and Reform Commission, May. 21, 2004, effective May 21, 2004) (China) that requires at minimum the approval of the State Council (the executive branch of the central government) before any fees on road utilization can be imposed.

¹⁰⁴ Lin Junhui et al., *Daibiao Huiyuan Jibian Yongdu fei Jinglu da Dushi huo Chizao bude Bushuo* (代表委员激辩拥堵费 京沪大都市或迟早不得不收) [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/2012lh/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.

¹⁰⁷ Sun Gan, *Beijing Lianghui: Beijing shi Zhanbu Zhengshou Yongdu fei* [Beijing Legislative Meeting: No Congestion Charges for the Moment], JINGHUA TIMES, Jan. 17, 2011, available at <http://auto.ifeng.com/news/special/yongdufei/20110117/515380.shtml> (last visited July 30, 2012).

¹⁰⁸ SINGAPORE DEPARTMENT OF STATISTICS, CENSUS OF POPULATION 2010 STATISTICAL RELEASE 3: GEOGRAPHIC DISTRIBUTION AND TRANSPORT 3 (2011).

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

1. *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.¹⁰⁹ It is a competitive tender system in which potential vehicle owners bid for a limited number of car-ownership licenses.¹¹⁰ Bidding is conducted electronically by sealed tender with licenses sold at the price of the lowest successful tender price.¹¹¹ The strong demand for vehicles and the limited numbers of licenses have resulted in high prices that often exceed the cost of new cars.¹¹² 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.¹¹³ 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.¹¹⁴ 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.¹¹⁵ Indeed, the rationale of the Singapore

¹⁰⁹ Rex S. Toh & Sock-Yong Phang, *Curbing Urban Traffic Congestion in Singapore: A Comprehensive Review*, 37(2) TRANSPORTATION J. 24, 28-29 (1997); see *Certificate of Entitlement*, *supra* note 12, at cols. 728-29 (Mah Bow Tan).

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/Ita_information_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.*

¹¹⁴ See Sock-Yong Phang & Rex S. Toh, *supra* note 35, at 20-21.

¹¹⁵ Iaione, *supra* note 7, at 929-32.

government for imposing the quota¹¹⁶ 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.¹²⁵ 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.¹²⁶ 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.¹²⁷ 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.¹²⁸

The Singapore government justified the congestion charges as being for the “privilege to drive into the restricted area”¹²⁹ and as a “better use of our limited road space,”¹³⁰ particularly in light of the economic and environmental costs of congestion.¹³¹ 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.¹³²

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.¹³³ However, some empirical studies indicate that the measures may have gone too far, leading to under-utilized roads to the detriment of overall welfare.¹³⁴ Nonetheless, its success “is at least somewhat responsible for the increased attention paid to congestion pricing regimes domestically [in the United States].”¹³⁵

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 pensions¹³⁸ echoed the United States' reform proposal of private social security accounts¹³⁹ that purportedly reflects the American cultural

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).

¹³⁹ Benjamin A. Templin, *Full Funding: The Future of Social Security*, 22 *J.L. & POL.* 395, 395-96 (2006); Tedrow, *supra* note 138, at 36-38. Proposed by President Bush in 2005-2006, the reform proposal

imperative of a free market economy.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.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,¹⁴² an important justification was to collect adequate charges for the benefits accruing to private entities.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.¹⁴⁴ The congestion charges were also justified as a charge for the "privilege to drive into the restricted area"¹⁴⁵ and the "use of our limited road space."¹⁴⁶

In essence, adopting market-based mechanisms appears to be based on a key pillar of socialist ideologies: the protection of public property.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

evoked an intense political debate and backlash. Templin, *supra*. The proposal is actually quite modest, involving only a partial privatization model where workers have the option to set aside four percent of the payable payroll taxes into their own private retirement account. *Id.*

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").

¹⁴¹ Teichman, *supra* note 137.

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.").

¹⁴³ See *supra* Part III.D.1; *Budget, Ministry of Communications*, *supra* note 129.

¹⁴⁴ See *supra* Part III.D.1.

¹⁴⁵ See *Budget, Ministry of Communications*, *supra* note 127.

¹⁴⁶ *Electronic Road Pricing*, *supra* note 130, at Col. 1297-1298.

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

¹⁴⁸ See Mo Zhang, *supra* note 13, at 324-25.

¹⁴⁹ For discussions of the history of Chinese reform especially after 1979, see generally JING WEIMING ET AL., *JINGJI ZHUANXING ZHONG DE SHICHANG SHEHUI ZHUYI – GUOWAI MAKE SI ZHUYI DE FENXI YU SHIJIAN JIANYAN [MARKET SOCIALIST IN THE ECONOMIC TRANSITION: THE ANALYSIS AND PRACTICAL EXAMINATION FROM FOREIGN MARXIST]* 202-06 (2009); ZHONGGUO JINGJI TIZHI GAIGE 30 NIAN HUIGU YU ZHANWANG [30 YEARS OF ECONOMIC REFORM IN CHINA: REFLECTING AND LOOKING AHEAD] 36-42 (Wei liqun ed., 2008).

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 ZHUANXING QI GONGYOU CHANQUAN ZHIDU DE YANHUA 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” status¹⁵² long before it recognized private property in 2004.¹⁵³ 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.¹⁵⁴ Public ownership of property is deemed crucial for the survival and prosperity of the infant socialist state.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.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.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.¹⁵⁸ The infringement of state property is also a specific ground for criminal penalties under the Criminal Law.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.¹⁶⁰

REFLECTING AND LOOKING AHEAD, *supra* note 149, at 36-42. Nonetheless, official policies until 2000 envisaged private economic activities as merely supplementary of state-owned economic activities. *See id.*

¹⁵² This protection has been enshrined since the second version of the constitution. *See* XIANFA [CONSTITUTION] art. 8 (1975) (China) (“Socialist public property is inviolable. The state protects socialist public property. Appropriation or damaging of state or collective property by any organization or individual by whatever means is prohibited.”).

¹⁵³ XIANFA [Constitution] art 13 (2004) (China) (“The lawful private property of citizens may not be encroached upon. The state protects by law the right of citizens to own private property and the right to inherit private property. The state may, for the public interest, expropriate or take over private property of citizens for public use, and pay compensation in accordance with the law.”). Earlier mention of private property has been at best lukewarm. *See, e.g.,* XIANFA [Constitution] art. 13 (1982) (China) (“The state protects the right of citizens to own lawfully earned income, savings, houses and other lawful property. The state protects according to law the right of citizens to inherit private property.”).

¹⁵⁴ XIANFA [Constitution], art. 6 (2004) (China).

¹⁵⁵ 30 YEARS OF ECONOMIC REFORM IN CHINA: REFLECTING AND LOOKING AHEAD, *supra* note 149, at 36-41; GE YANG, *supra* note 151, at 40-61 (discussing the evolution of China’s property ownership regime).

¹⁵⁶ Wuquan Fa (五泉山发) [Property Law] (promulgated by the Nat’l People’s Cong., Mar. 16, 2007, effective Oct. 1, 2007) (China); 30 YEARS OF ECONOMIC REFORM IN CHINA: REFLECTING AND LOOKING AHEAD, *supra* note 149, at 42; Mo Zhang, *supra* note 13, at 338-41.

¹⁵⁷ XIANFA [Constitution], art. 53 (2004) (China).

¹⁵⁸ Minfa Tongzhe [General Principles of the Civil Law] (promulgated by the Nat’l People’s Cong., Apr. 12, 1986, effective Jan. 1, 1987) (China).

¹⁵⁹ Xing Fa [Criminal Law] (promulgated by the Nat’l People’s Cong., Mar. 14, 1997, effective Oct. 1, 1997, amended Feb. 25, 2011) (China).

¹⁶⁰ Lin Yunlin, *Kunming Duojia Yiyuan gong Reshui Shoufei pa Gouyou Zichan Liushi?* [Several Hospitals in Kunming Charges for Hot Water – Fear of Loss of State-owned Property?], LIANHE ZAOBAO (Sing.), Mar. 25, 2011.

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

¹⁶¹ LIANG HUIXING & CHEN HUABIN, WUQUAN FA [REAL RIGHT LAW] 36-37 (5th ed., 2008); Mo Zhang, *supra* note 13, at 336-37.

¹⁶² WANG LIMIN, WUQUAN FALUN [PROPERTY LAW] 13-15 (2d ed., 2008).

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.¹⁶⁶ *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.¹⁶⁷ 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*”).¹⁶⁸ 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*”).¹⁶⁹ 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.¹⁷⁰ There is also legal recognition in the courts that the business transactions of state-owned enterprises are part of their assets.¹⁷¹ 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.¹⁷² This approach is indeed reflected in a recent interpretative book by the official law publisher for the State Council legal office.¹⁷³ 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.

¹⁶⁹ Wuquan fa (五泉山发) [Property Law] (promulgated by the Nat’l People’s Cong., Mar. 16, 2007, effective Oct. 1, 2007) (China).

¹⁷⁰ LIANG HUIXING & CHEN HUABIN, *supra* note 161, at 39-41.

¹⁷¹ Wuquan fa (五泉山发) [Property Law] (promulgated by the Nat’l People’s Cong., Mar. 16, 2007, effective Oct. 1, 2007) (China).

¹⁷² WANG LIMIN, *supra* note 162.

¹⁷³ WUQUAN FAX IN JIEDU [NEW INTERPRETATION OF PROPERTY RIGHTS LAW] 4-5 (2010).

regulatory permits are part of public property (“*caichan*”) is dependent on the law governing regulatory permits—the Administrative Permit Law.¹⁷⁴

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

¹⁷⁴ Xingzheng xuke fa [Administrative Permit Law] (promulgated by the Standing Comm. Nat'l People's Cong., Aug. 27, 2003, effective July 1, 2004) (China).

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.

¹⁷⁸ YANG LINPING, XINGZHENG XUKE SIFA JISHI LIJIE YU SHIYONG [UNDERSTANDING AND APPLICATION OF JUDICIAL INTERPRETATION ON ADMINISTRATIVE PERMIT] 32-40 (2010).

¹⁷⁹ Xingzheng xuke fa [Administrative Permit Law] (promulgated by the Standing Comm. Nat'l People's Cong., Aug. 27, 2003, effective July 1, 2004) (China).

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.¹⁸¹

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.¹⁸² 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,¹⁸³ the common refrain against the Shanghai auction stems from the payment of perceived “exorbitant” prices for the mere “basic” right to own a vehicle.¹⁸⁴ This is particularly important because the vehicle license quota system itself is also said to sacrifice an individual’s right to car usage.¹⁸⁵ 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 usage¹⁸⁶ reflects the need to justify the high price of regulatory permits through the value of the activities.

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.¹⁸⁷ 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.¹⁸⁸

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.¹⁸⁹ However, there is only a tangential relationship with the use of valuable resources (natural or public).¹⁹⁰ The Singapore planning authority grants development permits for alterations of land use (including increasing land use intensity) only after the payment of development charges.¹⁹¹ The Ministry of National Development sets the rate in consultation with the Chief Valuer, who takes into account current market values,¹⁹² which are currently set at 70% of the appreciation in land value.¹⁹³

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.

¹⁹¹ *Planning (Amendment) Bill*, 23 HANSARD (Sing.) Col. 146 (statement of Lim Kim San, Minister for National Development) (1964); William J. M. Ricquier, *Compulsory Purchase in Singapore*, in TAKING LAND—COMPULSORY PURCHASE AND REGULATION IN ASIAN-PACIFIC COUNTRIES 263, 277 (Tsuyoshi Kotaka & David L. Callies ed., 2002).

¹⁹² Kalpana Rashiwala, *Prime Residential DC seen rising 20-35%; But Potential En Bloc Sellers remain Upbeat due to Positive Outlook*, BUSINESS TIMES (Sing.), Feb. 10, 2007.

¹⁹³ Planning (Development Charges) Rules (Cap. 232, Section 40, 2007 Rev. Ed.) §10 (Sing.). See also Jianlin Chen, *Curbing Rent-Seeking and Inefficiency with Board Takings Powers and Undercompensation: The Case of Singapore from a Givings Perspective*, 19 PAC. RIM L. & POL’Y J. 1, 34 (2010).

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, Minister for National Development) (1982).

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.¹⁹⁹

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.²⁰⁰ Steven J. Eagle referred to the term "regulatory property" in describing the valuable regulatory permits that are essentially government-created monopoly privileges.²⁰¹ 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."²⁰² 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."²⁰³ 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.²⁰⁴

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.²⁰⁵ 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 value²⁰⁶ or whether replacing bore licenses (for water) granted under previous legislation with bore licenses that

¹⁹⁹ *Id.* at 778-85.

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).

²⁰¹ Steven J. Eagle, *The Really New Property: A Skeptical Appraisal*, 43 *IND. L. REV.* 1229, 1239 (2010).

²⁰² Shi-Ling Hsu, *A Two-Dimensional Framework for Analyzing Property Rights Regimes*, 36 *U.C. DAVIS L. REV.* 813, 879 (2003).

²⁰³ Wells & Snedeker, *supra* note 17, at 207.

²⁰⁴ *Id.* at 172-77 (providing a good summary discussion on the various U.S. court cases on these issues); Lehari, *supra* note 17, at 156-57.

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).

²⁰⁶ *Id.* at 222-24 (*Telstra Corporation Ltd v Commonwealth*).

contain fewer entitlements under new legislation is a taking.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.²⁰⁸ In New Zealand, Thomas Gibbons has argued for the recognition of property rights in regulatory permits such as resource consents.²⁰⁹

2. *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.²¹⁰ Individual liberty is also in the forefront of Reich's work.²¹¹ Indeed, he later wrote of the need to "create more ownership rights" in these forms of government-created wealth to safeguard liberty.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,²¹³ with the goal that such conception would facilitate her proposal that financial intermediaries (e.g., banks) serve as guarantors for visa applicants.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

²⁰⁷ Thomas Gibbons, *Property Rights in Resource Consents: Some Thoughts from Law and Economics*, 25 NEW ZEALAND U. L. REV. 46, 66-67 (2012) (*ICM Agriculture Pty Ltd v Commonwealth*).

²⁰⁸ *Id.* at 66; Gray, *supra* note 205, at 224.

²⁰⁹ See generally Gibbons, *supra* note 207.

²¹⁰ E.g., Eleanor Marie Lawrence Brown, *Visa as Property, Visa as Collateral*, 64 VAND. L. REV. 1047, 1085 (2011); Eagle, *supra* note 201, at 1255; Gray, *supra* note 205, at 222; Wells & Snedeker, *supra* note 17, at 188-89.

²¹¹ Reich, *supra* note 16, at 778-85.

²¹² Charles A. Reich, *The Liberty Impact of the New Property*, 31 WM. & MARY L. REV. 295, 304-05 (1990).

²¹³ Brown, *supra* note 210, at 1084-87.

²¹⁴ *Id.* at 1071-74.

information asymmetry in visa matters (by co-opting private financial intermediaries for screening and enforcement purposes).²¹⁵ Kevin Gray analogizes this “statutory property” and the correlative “regulatory property” with the quasi-public trust²¹⁶ to justify the “coupling of commercial privilege with social obligations” (i.e., facilitating limitations for the public interest on otherwise private property).²¹⁷ This renders his reference to Reich’s “new property”²¹⁸ a little ironic and arguably misconceived.²¹⁹

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 important²²⁰ 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.²²¹ This increases dependence of individuals on the government and risks making compromising one’s individual rights a condition of accepting this government-created wealth.²²² 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.²²³

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.”²²⁴ While Reich’s original work

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.²²⁵ He also opined on the need for procedural safeguards, including the requirement of a fair hearing following the denial of any privilege or benefit,²²⁶ adding that higher standards should be applied to governmental actions that have the effect of a penal sanction.²²⁷

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.²²⁸ Indeed, such free allocations are even encouraged.²²⁹ 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.”²³⁰ The small costs borne by private developers in the acquisition of land via eminent domain adds to controversies relating to eminent domain.²³¹ 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

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.

²³⁰ Lani A. Perlman, *Guarding the Government’s Coffers: The Need for Competition Requirements to Safeguard Federal Procurement*, 75 *FORDHAM L. REV.* 3187, 3189 (2007).

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.²³² 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.²³³ 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.²³⁴ 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.²³⁵ 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.”²³⁶ Given the great value of the licenses allocated and substantial discretion afforded to the FCC, political peddling was an

²³² John A. Rogovin & Rodger D. Citron, *Lessons from the Nextwave Saga: The Federal Communications Commission, the Courts and the Use of Market Forms to Perform Public Functions*, 57 ADMIN. L. REV. 687, 692 (2005); David Moss & Michael Feinn, *Radio Regulation Revisited: Coase, the FCC, and the Public Interest*, 15(4) J. POL’Y HISTORY 389, 407-12 (2003) (noting the important public interest considerations that are overlooked under an auction allocation mechanisms of broadcast licenses); Ronald Coase, *The Federal Communications Commission*, 2 J.L. & ECON. 1, 35-36 (1959).

²³³ Michael I. Jeffery, *Public Lands Reform: A Reluctant Leap into the Abyss*, 16 VA. ENVTL. L.J. 79, 116-17 (1996).

²³⁴ See CHRISTOPHER MCCRUDDEN, BUYING SOCIAL JUSTICE: EQUALITY, GOVERNMENT PROCUREMENT, AND LEGAL CHANGE 167-75 (2007) (discussing the practices and constitutionality of affirmative policies in U.S. government procurement).

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*, 26 SEATTLE U. L. REV. 475, 485 n.30 (2003).

²³⁶ Jeffrey A. Eisenach, *Spectrum Reallocation and the National Broadband Plan*, 64 FED. COMM. L.J. 87, 90-91 (2011); Susan P. Crawford, *The Radio and the Internet*, 23 BERKELEY TECH. L.J. 933, 966 (2008); Jerry Ellig, *Costs and Consequences of Federal Telecommunications Regulations*, 58 FED. COMM. L.J. 37, 77 (2006).

unsurprising feature of such hearings.²³⁷ 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.²³⁸ However, there remained room for political influence because entry into the lottery was subject to certain qualifications that were determined by the authorities.²³⁹ 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.”²⁴⁰ It was only in 1993 that Congress finally authorized the FCC to auction spectrum licenses through competitive bidding.²⁴¹ In 1997, bidding was made mandatory for future licensing proceedings with limited exemptions.²⁴²

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.²⁴³ There have been attempts to justify market auction through analogizing spectrum use to conventional property (such as the use of pasture or logging rights).²⁴⁴ 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.²⁴⁵ While the “[r]ecover[er] 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,²⁴⁶ this was primarily in response to the substantial budgetary pressure facing the government at that time²⁴⁷ instead of a genuine appreciation of the public property nature of the regulatory

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.

²⁴⁰ Thomas W. Hazlett, *Physical Scarcity, Rent Seeking, and the First Amendment*, 97 COLUM. L. REV. 905, 912 (1997).

²⁴¹ Eisenach, *supra* note 236, at 92-93; Rogovin & Citron, *supra* note 232, at 693; Ellig, *supra* note 236, at 77; Crawford, *supra* note 236, at 966.

²⁴² Eisenach, *supra* note 236, at 93-96; Rogovin & Citron, *supra* note 232, at 693-94.

²⁴³ Ellen P. Goodman, *Spectrum Auctions and the Public Interest*, 7 J. TELECOMM. & HIGH TECH. L. 343, 352-53 (2009); Rogovin & Citron, *supra* note 232, at 694.

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.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.²⁴⁹ As with the justifications advanced in support of the use of the auction mechanism in allocating COEs,²⁵⁰ an important rationale driving the Singapore government's decision is the prevention of "immediate windfall profit" under the "beauty contest" system.²⁵¹ The Minister expressly stated that "the Government has a responsibility to obtain fair value for a scarce resource."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. *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

²⁴⁸ Thomas W. Hazlett, Roberto E. Muñoz & Diego B. Avanzini, *What Really Matters in Spectrum Allocation Design*, 10 NW. J. TECH. & INTELL. PROP. 93, ¶¶26-27 (2012); Thomas W. Hazlett, David Porter & Vernon Smith, *Radio Spectrum and the Disruptive Clarity of Ronald Coase*, 54 J.L. & ECON. S. 125, 140 (2011).

²⁴⁹ Andrew Wee, *All 4 3G Licence Applicants Qualify*, BUSINESS TIMES (Sing.), Mar. 31, 2001, at 8.

²⁵⁰ *Supra* Part III.D.1.

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." *Id.*

²⁵² *Id.* (noting the potential large sum obtained in similar auction in Europe).

property.”²⁵³ “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.²⁵⁴ The loss and squandering of publicly owned property is also an important theme in the discourse of corruption.²⁵⁵

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*²⁵⁶ (extending copyright protection by twenty years returns what should otherwise be public property back to private hands)²⁵⁷ assumes that public property signifies property with public access.²⁵⁸ 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.²⁵⁹ Public property is again conceptualized as property that is utilized by the public.²⁶⁰ 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.”²⁶¹ They observed that the appropriate level of management for the resources may depend on the circumstances.²⁶² 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.”²⁶³ Carol M. Rose’s conceptualization of public property in her critical examinations on

²⁵³ *United States v. 50 Acres of Land*, 469 U.S. 24 (1984); Michael H. Schill, *Intergovernmental Takings and Just Compensation: A Question of Federalism*, 137 U. PA. L. REV. 829, 831 (1989).

²⁵⁴ *E.g.*, *Lynch v. Donnelly*, 465 U.S. 668 (1984); *County of Allegheny v. ACLU*, 492 U.S. 573 (1989).

²⁵⁵ *E.g.*, Thomas R. Snider, *Combating Corruption Through International Law in Africa: A Comparative Analysis*, 40 CORNELL INT’L L.J. 691, 707 (2007) (discussing the United Nations Convention Against Corruption); Osita Nnamani Ogbu, *Combating Corruption in Nigeria: A Critical Appraisal of the Laws, Institutions, and the Political Will*, 14 ANN. SURV. INT’L & COMP. L. 99, 146-48 (2008).

²⁵⁶ *Eldred v. Ashcroft*, 537 U.S. 186 (2003).

²⁵⁷ David Fagundes, *Property Rhetoric and the Public Domain*, 94 MINN. L. REV. 652, 652-58 (2010).

²⁵⁸ *Id.* at 677-88.

²⁵⁹ Amnon Lehavi, *The Property Puzzle*, 96 GEO. L.J. 1987, 2004 (2008).

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.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.²⁶⁵ The first category is *res communes* – property that cannot be legally owned, but which the right to enjoy by all is recognized by the law.²⁶⁶ Typical examples include air, running water, and the sea.²⁶⁷ Another similar concept, *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.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.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

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.

²⁶⁵ Rose, *Romans, Roads, and Romantic Creators*, *supra* note 2, at 92-105; Zhang Jianwen, *Lun gonggong caichan de jieding biao zhun* [Classification Criteria of Public Property], 2012(2) J. CHINA YOUTH U. FOR POL. SCI. 114, 115 (2012); Xiao Zecheng, *Shihui gonggong caichan yu guojia cichan de fenyi* [Distinction Between Society Public Property and State-owned Private Property], 2007(6) ZHEJIANG ACAD. J. 32, 35 (2007). This understanding continues to be reflected in modern Civilian jurisdictions such as France and Germany where classification of public property hinges on use rather than ownership. MURRAY RAFF, PRIVATE PROPERTY AND ENVIRONMENTAL RESPONSIBILITY: A COMPARATIVE STUDY OF GERMAN REAL PROPERTY LAW 161-62 (2003); Laurent Aynés, *Property Law*, in INTRODUCTION TO FRENCH LAW 147, 157 (George A. Bermann & Etienne Picard eds., 2008); JOHN BELL ET AL., PRINCIPLES OF FRENCH LAW 282 (1998). For an interesting economic justification of the Roman law of property, see Juan Javier Del Granado, *The Genius of Roman Law from a Law and Economics Perspective*, 13 SAN DIEGO INT’L L.J. 301, 307-21 (2011).

²⁶⁶ Rose, *Romans, Roads, and Romantic Creators*, *supra* note 2, at 93-94 (2003); ANDREW BORKOWSKI, TEXTBOOK ON ROMAN LAW 143 (1994).

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 *res communis*).

²⁶⁸ Rose, *Romans, Roads, and Romantic Creators*, *supra* note 2, at 96-97; BORKOWSKI, *supra* note 266, at 96-97.

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).

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.

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.”).

²⁷¹ Dan Janison, *Spin Cycle: A New Spin on Traffic Plan?*, NEWSDAY (New York), Dec. 7, 2007, at A16.

²⁷² Wes Smith, *Minneapolis Drivers Will be Able to Buy Way into Fast Lane*, CHICAGO TRIBUNE, Oct. 12, 1997, at C4.

²⁷³ Joseph D. Kearney & Thomas W. Merrill, *Private Rights in Public Lands: the Chicago Lakefront, Montgomery Ward, and the Public Dedication Doctrine*, 105 NW. U. L. REV. 1417, 1521 (2011).

²⁷⁴ John Stackhouse, *Indian Economy in Desperate Need of a New Foundation Infrastructure*, THE GLOBE AND MAIL (Canada), Feb. 28, 1997, at B10.

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 authorization²⁸² 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.”²⁸³ 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.

1. “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.²⁸⁴ From the economics perspective, there is no fundamental

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

of regulatory permit. Hence, this article concentrates only on regulatory permits and regulatory actions that confer economically valuable benefits to the recipients.

²⁸⁵ STEVEN J. EAGLE, REGULATORY TAKINGS 332 (3d ed. 2005).

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.

²⁸⁹ For a general overview on the economic perspective, see STEPHEN J. SPURR, ECONOMIC FOUNDATIONS OF LAW 69-78 (2d ed. 2010); MOORE MCDOWELL ET AL., PRINCIPLES OF ECONOMICS 180-86 & 329-35 (2d European ed. 2009); ROBERT COOTER & THOMAS ULEN, LAW AND ECONOMICS 85-99 (4th ed. 2004).

²⁹⁰ MOORE MCDOWELL ET AL., *supra* note 289, at 405-19.

²⁹¹ Rogovin & Citron, *supra* note 232, at 692; Moss & Feinn, *supra* note 232, at 407-412. *Cf.*, Coase, *supra* note 232, at 12-17 (expressing skepticism of the public interest justification).

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.

²⁹⁴ Goodman, *supra* note 243, at 352-53.

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.²⁹⁸ Indeed, rent seeking involves power-holders utilizing their power to create "new" property rights that generate a flow of income to themselves.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.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.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.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.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,³⁰⁴ but also affects efficiency because revenue

²⁹⁷ Jianlin Chen, *Curbing Rent-Seeking and Inefficiency with Board Takings Powers and Undercompensation: The Case of Singapore from a Givings Perspective*, 19 PAC. RIM L. & POL'Y J. 1, 21-24 (2010).

²⁹⁸ See EAGLE, *supra* note 285, at 25; ANDERSON & HUGGINS, *supra* note 1, at 76.

²⁹⁹ See Howard Dick, *Why Law Reform Fails—Indonesia's Anti-Corruption Reforms*, in LAW REFORM IN DEVELOPING AND TRANSITIONAL STATES 42, 46-47 (2007).

³⁰⁰ See Paul B. Stephan, *Rationality and Corruption in the Post-Socialist World*, 14 CONN. J. INT'L L. 533, 536-37 (1999).

³⁰¹ Coase, *supra* note 232, at 22-23.

³⁰² See Eisenach, *supra* note 236, at 117.

³⁰³ Ai, *supra* note 66; *Storm of Vehicle Purchase Restriction is Imminent*, *supra* note 68; Zhou An, *supra* note 66.

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.³⁰⁵

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.³⁰⁶

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.³⁰⁷ Nonetheless, as overcrowding arising from increased demand leads to the degradation of the enjoyment of the visitors and of the natural environment,³⁰⁸ implementing a limited quota of park permits³⁰⁹ or increasing user fees for the park³¹⁰ may be necessary to conserve its natural value. Indeed, the institution of private property is largely irrelevant where

³⁰⁵ See Hazlett, Muñoz & Avanzini, *supra* note 248, at ¶26-27; Hazlett, Porter & Smith, *supra* note 248, at 140.

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,³¹¹ but may be necessary to avoid the tragedies of the commons in the light of intense competing use.³¹²

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.³¹³ Indeed, public roads have been the quintessential public property with inherent rights of public access since Roman times.³¹⁴ 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.³¹⁵ However, the assumption of public access—or worse, public free access³¹⁶—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., Lehari, *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 Rabibhadana, *Exit, Voice, and the Depletion of Open Access Resources: The Political Bases of Property Rights in Thailand*, 28 *LAW & SOC’Y REV.* 639, 643-54 (1994) (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.

1. *Redistribution 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 States³²⁹ and China³³⁰ 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.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.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.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

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

³³⁰ See Lin Junhui et al., *supra* note 104; Ma Lianhua, *supra* note 103.

³³¹ Zhou An, *supra* note 66.

³³² Xiao Zecheng, *supra* note 265, at 38.

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.³³⁴ 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.³³⁵ 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.³³⁶ In the case of roads, time becomes the price charged for road utilization.³³⁷ This does not benefit the poor, particularly when the rich can “save” time by purchasing property in a better location.³³⁸

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

³³⁴ See *supra* Part II.C.1.

³³⁵ *Certificate of Entitlement*, *supra* note 12, at col. 729 (Mah Bow Tan).

³³⁶ See Fikret Berkes, *Native Subsistence Fisheries: A Synthesis of Harvest Studies in Canada*, 43 ARCTIC 35, 40-41 (1990); O. Hertz & F. O. Kapel, *Commercial and Subsistence Hunting of Marine Mammals*, 15 AMBIO 144, 146 (1986).

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 routes³³⁹ does much more to help the socioeconomically 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.³⁴⁰ More tellingly, unlike in the United States,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.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.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.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.³⁴⁵ Some scholars consider taxation as a form of eminent domain, even arguing that some tax laws are actually unconstitutional takings.³⁴⁶ Broadly based taxes such as income taxes and corporate taxes do not treat all taxpayers fairly but benefit certain groups of

³³⁹ *Storm of Vehicle Purchase Restriction is Imminent*, *supra* note 68.

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).

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.

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).

³⁴³ SINGAPORE DEPARTMENT OF STATISTICS, *YEARBOOK OF STATISTICS SINGAPORE*, 2012, 120-24 & 269-70 (2012).

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

³⁴⁵ See Abraham Bell & Gideon Parchomovsky, *The Uselessness of Public Use*, 106 COLUM. L. REV. 1412, 1416 (2006).

³⁴⁶ *Id.* at 1432-33.

citizens at the expense of others.³⁴⁷ Tax laws are subject to intense lobbying pressures, often resulting in provisions catering to interest groups at the expense of general taxpayers.³⁴⁸

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.³⁴⁹ 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).³⁵⁰ 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).³⁵¹ Administrative auction can also impose artificial scarcity to drive up prices, leading to insufficient supply of the regulatory permits.³⁵² Chinese commentators have also criticized the Shanghai vehicle license auction on the grounds that such maximizing of government funds

³⁴⁷ See Saul Levmore, *Just Compensation and Just Politics*, 22 CONN. L. REV. 285, 292 (1990); RONALD F. KING, *MONEY, TIME & POLITICS* 34 (1993).

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.

³⁵¹ See Hazlett, Muñoz & Avanzini, *supra* note 248, at ¶¶28-29; Hazlett, Porter & Smith, *supra* note 248, at 140.

³⁵² See Hazlett, Porter & Smith, *supra* note 248, at 148.

will distract the government from achieving public welfare.³⁵³ 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.³⁵⁴

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.³⁵⁵ 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.”³⁵⁶ 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.³⁵⁷ 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.³⁵⁸ 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.³⁵⁹

³⁵³ Peng Xingting, *supra* note 71.

³⁵⁴ Zhang Jianwen, *supra* note 265, at 118; Xiao Zecheng, *supra* note 265, at 37-38.

³⁵⁵ See Goodman, *supra* note 243, at 354 (2009); Crawford, *supra* note 236, at 967, 973-74.

³⁵⁶ 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 bedroom 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.

³⁵⁷ See *supra* Part IV.B.1.

³⁵⁸ See *supra* Part II.D.

³⁵⁹ *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.³⁶⁰ 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.³⁶¹ 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.³⁶² The vigorous political lobbying in the pre-auction allocation of the telecommunication spectrum³⁶³ or the unfortunately common corruption in the grant of development permits³⁶⁴ 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."³⁶⁵ Similarly, Bruce Yandle noted that "[s]adly for special interest groups, user fees tend to maintain competition and generate no rents for [these groups]."³⁶⁶ Interest groups would be much more careful to lobby for government actions if they are expected to pay for these benefits.³⁶⁷

³⁶⁰ See *supra* Parts II.B and II.C.2.

³⁶¹ See Wyman, *supra* note 1, 123-25.

³⁶² See Leif Wenar, *The Concept of Property and the Takings Clause*, 97 COLUM. L. REV. 1923, 1936-37 (1997).

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.

³⁶⁶ See Bruce Yandle, *User Charges, Rent Seeking and Public Choice*, in *CHARGING FOR GOVERNMENT: USER CHARGES AND EARMARKED TAXES IN PRINCIPLE AND PRACTICE* 34, 50 (Richard E. Wagner ed., 1991).

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 assets³⁶⁸ despite the ostensible jurisprudential emphasis on the need for government to obtain best value for the public funds and property.³⁶⁹ 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.³⁷⁰ 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 A case study on the impact of market reform in eastern Xinjiang reveals the gradual and still incomplete acceptance by the general population of market principles in the realm of labor, land, and money. See Chris Hann, *Embedded Socialism? Land, Labor, and Money in Eastern Xinjiang*, in MARKET AND SOCIETY: THE GREAT TRANSFORMATION TODAY 256, 270 (Chris Hann & Keith Hart eds., 2009). Nonetheless, it is worth noting that since the reform initiatives in the 1980s, Chinese Socialist thinkers have embraced market mechanisms as compatible with the socialist economic system. See GE YANG, *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.