

# Long-Term Lease Agreements and the Public Interest

Privatizing public goods to close budget gaps

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## ABSTRACT

In recent years, many cities and states have begun leasing public infrastructure assets to private companies in exchange for an upfront payment to alleviate immediate budget strains. This paper examines the long-term effects of these types of public-private partnership agreements on budgets and citizens, and makes strategic recommendations for government officials interested in leasing public infrastructure.

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## Executive Summary

In the past three decades, there has been a trend towards more privatization in the United States in an effort to deliver goods and services in the most efficient way. This has led governments at all levels to pursue public-private partnerships (PPPs), particularly in the area of transportation. Many successful transportation PPPs utilize private funding to build and operate new infrastructure. Recently, some cities and states have begun to privatize existing public infrastructure assets for an upfront payment to close short-term budget gaps.

Like many studies before it, this paper comes to the conclusion that leasing public goods to close a budget gap is not in the best interest of the city or the public. Often, the city or state government will give away more in future revenues than it receives in an upfront payment. However, many cities and states are facing difficult budget situations and might feel they need to lease assets to stabilize budgets.

While this paper does not recommend leasing assets to close budget gaps, it recognizes that governments may choose to lease them for short-term gain. When governments explore privatization in this context, this paper determines it is best to enter into only one long-term contract at a time. Leasing only one asset will allow governments to evaluate the success of the partnership and protect the long-term interests of the public. Two common assets for cities and states to lease for upfront payments are parking meter systems and toll roads. This paper examines the lease of the Chicago Skyway Toll Road and the Chicago Parking Meter System to determine which of these options could generate the greatest revenues for the city, if the city maintained operations and raised tolls and fees at the same rate as a private concessionaire.

Through a cost-benefit analysis and empirical evidence, this paper concludes that Chicago should have maintained control of the parking meter system and leased the Chicago Skyway. The parking meter system has the greatest revenue generating potential and the Chicago

Skyway provides a large upfront payment. This holds true when the City is able to raise tolls and fees at the same rate as the private concessionaire in the lease agreement. It is possible cities and governments may have a difficult time raising tolls and fees since it is politically unpopular, so the sensitivity analysis of this paper investigates the value of the assets if the City is unable to raise rates as substantially as a private concessionaire. There is also some variability in the cost of capital rate available to governments and private companies. The second part of the sensitivity analysis investigates the effect of these different rates on the value of the assets for the City.

This analysis attempts to inform governments of the public assets that are the most efficient to lease. However, each case is different, so every asset must be thoroughly evaluated before entering into a long-term concession agreement. Overall, this paper recommends avoiding privatization, especially if it does not include revenue sharing, and governments should think carefully before forfeiting future revenues in a long-term lease.

## Problem Statement and Introduction

*Problem Statement:* Difficult budget situations are forcing governments to make hard choices about the operation of their public systems, and too many decisions about the long-term use of publicly owned facilities are being made for short term gain.

Many cities and states have been facing difficult financial situations for several years, and their problems have only been exacerbated by the recent recession. One of the ways governments are raising much-needed revenues is pursuing public-private partnerships, particularly in transportation. Most of these projects involve private financing and aid in building new transportation initiatives, but in recent years, governments have begun leasing existing public infrastructure to private companies for an upfront payment. Two of the more popular choices to lease are toll roads and parking meter systems that can generate a large payment for governments and have the potential for private profits. According to many sources, including the Government Accountability Office, these types of leases may be detrimental to cities and states over time, since they lose all future revenue from these assets. However, with most government revenues severely diminished in the current economic climate, many governments may think they need an upfront revenue payment to close budget gaps.

Privatization is not a new concept in the United States. It has been gaining popularity since the 1980s, when a movement began in the United States to limit the size and scope of government. The first section of this paper will delve into the history of private goods in the United States, and the history of privatization, PPPs, and the push for smaller government. After, the paper will highlight the use of PPPs in transportation and the potential benefits and costs of those PPPs. This background forms a foundation for understanding the context of long-term transportation PPP agreements in order to close short-term budget gaps.

The City of Chicago has faced many budget shortfalls over the past decade, and it has often turned to leasing assets in order to close those gaps. After discussing the history of privatization in the United States, this paper will discuss the specifics of two long-term lease agreements the City of Chicago has entered into – the lease of the Chicago Skyway Toll Road and the Chicago Parking Meter System. Using these examples as a case study, I perform a cost-benefit analysis to examine the most cost-effective assets for cities to lease in order to help alleviate their budget difficulties.

Along with the cost-benefit analysis, I also perform a sensitivity analysis to determine if my findings change when one of the elements of the cost-benefit analysis is changed. The two variations in the cost-benefit analysis are the ability of governments to raise tolls and fees in the absence of a private company to lease the assets (private concessionaire), and the cost of borrowing for the City of Chicago and the private concessionaire.

The findings from the cost-benefit analysis, sensitivity analysis and comparison with other transportation infrastructure PPPs in the United States allow me to make some strategic recommendations for cities and states thinking of leasing their assets to close budget gaps. In this section, I discuss options such as revenue sharing that can have more long-term benefits for governments, but are less likely to generate the significant revenues needed to close short-term budget shortfalls. When thinking about PPPs, cities and states often must weigh short-term and long-term benefits.

Debate over long-term lease agreements and the long-term benefits and costs of allowing private companies to operate public infrastructure is likely to continue for many years. However, the debate has its origins in the theory of public goods and the role of government – what tasks are most appropriate for governments to perform and which are best suited for the private market?

## A History of Public Goods and Privatization in the United States

In every society, there are certain functions that are performed for the good of the public. Often they are tasks that make everyone in a society better off, such as collecting trash and maintaining safe drinking water to limit disease and keep society healthy. Other tasks could be providing an army to protect citizens from outside forces or maintaining infrastructure so that citizens can easily move from place to place. Many of these tasks require large amounts of organization and could not be performed or financed by one citizen alone. Since nearly everyone in society benefits from having these functions performed, it can be argued that no one citizen or group of citizens should shoulder the financial burden alone.

In addition to the organization and money required, there is usually limited incentive for private citizens to provide many of these goods and services. In a market economy, people are motivated by the prospect of reciprocity.<sup>1</sup> People trade goods and services in a way that will maximize their utility, or satisfaction. Services like providing drinking water to populations is a critical public health issue, but a private individual, or group of individuals, is unlikely to feel that the benefits they receive from providing that service results in enough benefits for them personally.

As a result, the government often steps in to perform these tasks, providing these services to everyone. These types of goods and services are called *public goods*. For the purposes of this paper, I define a public good as a good or service that, once provided, does not exclude any person from benefiting from the good or service (nonexclusivity) and one person's the enjoyment of the good or service does not diminish another's ability to enjoy it (nonrivalry).<sup>2</sup> As John Donahue, professor at the Kennedy School of Government notes, these are the two characteristics found in most definitions of public goods.

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<sup>1</sup> John D. Donahue, The Privatization Decision, (Basic Books, Inc.: New York, 1989) 15.

<sup>2</sup> Ibid, 18.

Economists generally consider public goods a *market failure* because “some goods and services are inherently public, in the sense that each person benefits from their provision whether he helps pay for them or not.”<sup>3</sup> Since the 1980s, however, this assumption of some goods as inherently public has been called into the question.

In the United States and elsewhere during the 1980s, scholars began to question government’s role in financing and providing many different goods and services. Historically, the United States government has been less involved in the market economy than other countries, providing fewer goods and services than in many other areas such as Western Europe.<sup>4</sup> While government in the U.S. has been less directly involved in the market than in other regions, scholars in the U.S. began to question the costs involved in government provided services, as well as government efficiency. This was in part a reaction to the economic recession of the early 1980s, which prompted economists and legislators to seek ways of reducing government expenditures and ensuring tax revenue is spent effectively.<sup>5</sup> Both economists and citizens began to evaluate whether the government should intervene in the market not only by the existence of a market failure, but also by the costs of that intervention. In 1987, Janet Rothenberg Pack, a professor of public policy at the Wharton School, wrote, “The view that market failures of all sorts justify public intervention is no longer so widely accepted. The extensive deregulation activity of the last decade – a response to the perception of increasing costs of regulation, in contrast the former exclusive focus on its potential benefits – provides the clearest evidence.”<sup>6</sup> Increasingly throughout the 1980s and 1990s, costs of government services were under scrutiny.

In addition to the efficiency and cost debates, privatization conversations of the 1980s raised philosophical questions about the role and intentions of government. How does a society

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<sup>3</sup> John D. Donahue, *The Privatization Decision*, (Basic Books, Inc.: New York, 1989) 18.

<sup>4</sup> Paul Seidenstat, *Theory and Practice of Contracting Out in the United States*, (Praeger Publishers: Westport, Connecticut, 1999) 4.

<sup>5</sup> *Ibid*, 11.

<sup>6</sup> Janet Rothenberg Pack, “Privatization of Public-Sector Services in Theory and Practice,” *Journal of Policy Analysis and Management*, Vol. 6. No. 4 (1987) 523.



determine what issues are right for the government to finance and provide? John Donahue suggests democracies determine public spending not only on market failures and economic reasons alone, but that initiatives are debated and found to have a moral argument for government administration.<sup>7</sup> One example in this scenario is education. Donahue argues that little efficiency would be lost if education were financed and provided privately only, but society has determined that this is “good” public spending. Of course, what is moral for one citizen, may not be moral for another – what may be “good” public spending to one, may be “bad” spending to another.

In part as a result of these many debates over the benefits of privatization and the role of government in providing goods and services, there was a shift in American political culture towards smaller more efficient government. Americans elected Ronald Reagan as President in 1980, as well as legislators at the state and local level that promised a less intrusive government that spent less.<sup>8</sup> This new culture in the United States led governments to explore privatizing goods and services. There are many different types of privatization depending on the financing and operation of a good or service. The figure below, adapted from John Donahue’s book, demonstrates the various ways goods and services can be provided.<sup>9</sup>

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<sup>7</sup> John D. Donahue, The Privatization Decision, (Basic Books, Inc.: New York, 1989) 19.

<sup>8</sup> Paul Seidenstat, Theory and Practice of Contracting Out in the United States, (Praeger Publishers: Westport, Connecticut, 1999) 11.

<sup>9</sup> John D. Donahue, The Privatization Decision, (Basic Books, Inc.: New York, 1989) 7.

### Dimensions of the Public/Private Choice

<p><b>Public Payment and Public Delivery</b></p> <p><i>Traditional public goods</i></p>	<p><b>Private Payment and Public Delivery</b></p> <p><i>Private company invests in a project, but the government administers the project</i></p>
<p><b>Public Payment and Private Delivery</b></p> <p><i>Government establishes the good or service, then contracts with a private source to administer the good or service</i></p>	<p><b>Private Payment and Private Delivery</b></p> <p><i>A private company invests in a project and (usually in exchange) is allowed to administer the good or service</i></p>

There is still much debate today about what types of goods and services are best publically provided, which ones are best privately provided and what goods and services are financed and provided most efficiently through a combination of the two. In recent years, partnerships between the public sector and private sector, which combine public and private financing and operations, have become increasingly popular. Known as public private partnerships (PPPs), they have become especially popular in transportation projects in the United States. The U.S. Department of Transportation, Federal Highway Administration encourages governments to consider PPPs for their transportation needs. They believe that PPPs can provide “creativity, efficiency, an capital to address complex transportation problems.”<sup>10</sup> In the figure above, any area of the square where government (public) and private are both involved, is considered a PPP.

Transportation is one historically public good that has moved towards more privatization, but there are many more examples. In the 1980, rising crime rates in the United States began to strain the budgets of public prison systems. This trend coupled with the growing idea of limiting

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<sup>10</sup> U.S. Department of Transportation: Federal Highway Administration Office of Innovation, “Public Private Partnerships,” <http://www.fhwa.dot.gov/ipd/p3/>

the role of government described earlier led to the formation of several private companies willing to finance and/or operate state prison facilities.<sup>11</sup> Some prisons are entirely private, but others may be publically owned, and staffed by a private contractor. As of 2010, about 9 percent of prisoners in the United States were housed in privately operated prisons.<sup>12</sup> Private prison operators argue they are up to 20 percent more efficient than publically operated prisons, largely because they do not have to contend with prisons unions, which have historically been a major political force to increase prison spending in many states. On the other hand, private prison operators have made generous campaign donations to influence politics.<sup>13</sup>

There are also many smaller city and state operations that have experimented with privatization. According to Mildred Warner, professor of city and regional planning at Cornell University, the two operations cities privatize most often are water delivery systems and trash collection.<sup>14</sup> City managers often cite cost-savings as the reason for outsourcing these operations. Private firms, they argue, have an incentive to provide a high level of service to keep customers. Ms. Warner's research contradicts these assertions, at least in an international context, finding no statistical evidence of cost-savings when privatizing these two operations.<sup>15</sup> Since 75 percent of city contracts for water delivery and garbage collection are issued to the incumbent private company each year without competition, the incentive to provide a superior service to customers is minimized, and so are cost savings.<sup>16</sup>

While there may not be cost-savings for customers, however, there could still be some cost-savings for cities. City employees may become private employees, lowering payroll costs, and potentially collective bargaining costs in cities with strong union presences. Privatization

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<sup>11</sup> Judith Greene, "Prison Privatization: Recent Developments in the United States," *Center on Crime, Communities and Culture*, (presented at ICOPA May 12, 2000) 2.

<sup>12</sup> Nancy Cook, "How the Recession Hurt Private Prisons," *Newsweek* (June 29, 2010).

<sup>13</sup> *Ibid.*

<sup>14</sup> Mildred Warner, "Room for Debate," *New York Times* (April 4, 2011).

<sup>15</sup> *Ibid.*

<sup>16</sup> Mildred Warner, "Room for Debate," *New York Times* (April 4, 2011).

agreements usually include some clauses to protect public workers' jobs with the private company taking over operations, but it can still reduce costs for the city.

There are many examples of different types of privatization projects in the United States. Projects are largely driven by a need for cities and states to save money, though evidence is mixed on the extent to which privatization is more cost-effective than public operations. Some projects, such as many private prisons, are fully owned and operated by private companies. In other cases, the operation of a public service is outsourced to a private company, common with trash collection or water systems. When both the public and private sectors play a role in financing and/or operating a system or project, the arrangement is a public-private partnership.

Pursuing PPPs does not only change the financing for a project, but can also change incentive structures. For example, if a state owns and operates a prison, it is in their best interest to have fewer prisoners to reduce costs. A private prison by contrast will want as many prisoners as possible to make the greatest profit. The private prison organization is also likely to support tough sentencing laws in the state to increase the number of prisoners. It is important that state and local governments think about the ways privatization might alter the incentive structure of a good or service when exploring PPPs.

The next section of this paper will discuss the reason why public-private partnerships in the United States have become popular in transportation infrastructure projects. It will also highlight some different models of PPPs in transportation, focusing on a relatively recent PPP structure in the United States, converting government owned infrastructure into privately operated infrastructure in exchange for a large upfront payment.<sup>17</sup> This model is the type of PPP this paper will concentrate on when discussing the Chicago Skyway and Chicago Parking Meter System privatizations.

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<sup>17</sup> Asieh Mansour and Hope Nadji, "US Infrastructure Privatization and Public Policy Issues," *RREEF Research*, 2006, 2.

## Transportation Infrastructure Privatization in the United States

Public-private partnerships in the United States have become increasingly popular in state and local transportation infrastructure. Historically, governments have relied largely on gas taxes to fund road construction and maintenance. While this may have provided sufficient revenues for a time, lawmakers have been unable or unwilling to raise the gas tax to keep pace with inflation or transportation needs. Many state tax rates have not been changed since the 1970s or 1980s and the federal tax rate has not been increased since 1997.<sup>18</sup>

There are several reasons for state and federal reluctance to raise gas taxes. Static gas taxes are due in part to the political unpopularity of raising taxes, but also because raising the tax on gasoline is regressive and disproportionately harms low-income consumers.<sup>19</sup> As a result, gas tax revenues, and other funding mechanisms are insufficient to meet current infrastructure needs.<sup>20</sup> At the same time, the emphasis since the 1980s on reducing federal spending has placed a greater burden on state and local governments to fund transportation infrastructure.<sup>21</sup> As of 2010, the federal government provided only 22 percent of state transportation revenues.<sup>22</sup> To finance infrastructure projects, state and local governments have turned to public-private partnerships, which can provide private capital to support public projects. As of December 2010, 29 states have legislation that allows for PPPs in transportation. The map below from the National

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<sup>18</sup> Federal Highway Administration, “Motor Fuel Taxes: Table MF-121T”

<sup>19</sup> Hayley Choulnard and Jeffrey M. Perloff, “Incidence of federal and state gasoline taxes,” *Economics Letters*, Vol. 83 (2004) 55.

<sup>20</sup> Kathleen Brown, “Are Public-Private Transactions the Future of Infrastructure Finance?” *Public Works Management Policy* Vol 12: 320 (2007) 320.

<sup>21</sup> Asieh Mansour and Hope Nadji, “US Infrastructure Privatization and Public Policy Issues,” *RREEF Research*, 2006, 2.

<sup>22</sup> James B. Reed, “Failure to reauthorize the federal transportation law is hurting states trying to recover from the recession,” *National Conference of State Legislatures*, (March 2010).



must reduce operating costs, they may lease public infrastructure to private firms for an up-front payment and/or a future revenue sharing agreement.<sup>24</sup>

In many contracts in the United States, a private contractor maintains and operates the infrastructure for a period of time, and in exchange, the company receives any revenues from tolls or fees. Although the government relinquishes day-to-day control of the asset to the concessionaire, they usually maintain at least an oversight role. The contract usually includes some performance measures and places some limits on fee increases meant to protect public interests. Additionally, the contract may include non-compete clauses (restrictions on new or competing infrastructure around the contract asset) and/or compensation events (the government agrees to pay the private company for unexpected events that cause a reduction in expected revenues).<sup>25</sup> These clauses can act as contract stabilizers that ensure a return on a company's investment. When a government leases an existing asset, these clauses can have a large impact on the amount a company is willing to pay to lease the asset. The more financial risk the public sector is willing to retain, the greater the upfront lease payment from the concessionaire.

In addition to clear financial trade-offs between governments and private concessionaires, politics play a significant role in determining the way assets are leased. Since most politicians only serve for a few years, they tend to have a more short-term view of the public interest. There is less incentive to think about the way lease agreements might affect a city or state 50 or 75 years in the future. Additionally, critics of privatization often mention that cities and states would be better off maintaining the operation of their assets, raising tolls and fees to generate more revenue. Governments, however, usually respond that it is politically difficult to raise tolls and fees for quasi-public goods, even when the tolls and fees are artificially low. This is the main argument cited by the Chicago City Council for entering into lease agreements that allow a

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<sup>24</sup> Asieh Mansour and Hope Nadji, "US Infrastructure Privatization and Public Policy Issues," *RREEF Research*, 2006, 2.

<sup>25</sup> Ellen Dannin, "Infrastructure Privatization Contracts and Their Effects on Governance," *Pennsylvania State University, Dickinson School of Law* (2009) 1.

private concessionaire to operate the Chicago Skyway Toll Road and the Chicago Parking Meter System.<sup>26</sup>

It is impossible to say whether the City of Chicago is correct in assuming they could not raise their tolls and fees to generate more revenue. Other cities such as Los Angeles and Phoenix have been able to raise their rates, but the political reality of every city and state is different.<sup>27</sup> This argument about government's ability to raise tolls and fees emphasizes that there are many different political factors that go into long-term lease agreements. While it may at first appear to those studying the agreements that contracts are a simple exchange of money and responsibilities, in reality, they are also the products of political realities and politically motivated decisions.

Another politically difficult choice for cities and states is the amount of transparency to allow during the contract process. When these contracts are intended to solve short-term budget issues, they can be developed quickly, and governments may not allow time for public debate. When a winning bid for the Chicago Parking Meter System was chosen, the agreement was ratified by the City Council three days later, leaving no time public comment, or to address concerns about the public interest.<sup>28</sup> These political aspects of long-term lease agreements can complicate an analysis of their benefits and costs. The numbers in a cost-benefit analysis may point to a clear course of action for cities and states debating long-term lease agreements, but they cannot take intangible political factors into account.

In part because of the political aspects of long-term lease agreements, the benefits and costs associated with transportation infrastructure privatization are widely debated. Below are some of the arguments in favor and against public private partnerships.

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<sup>26</sup> David H. Hoffman, "Report of Inspector General's Findings and Recommendations: An Analysis of the Lease of the City's Parking Meters," *Office of the Inspector General: City of Chicago*, (June 2, 2009) 27.

<sup>27</sup> *Ibid*, 27.

<sup>28</sup> *Ibid*, 32.



## Potential Benefits of Privatization

- Privatizing public infrastructure assets can allow states to improve their infrastructure without using public funds.<sup>29</sup> If money from the lease of the asset is used to finance other transportation needs, it can increase the production capacity of the area.<sup>30</sup>
- Some agreements may allow governments to shift risk to the private sector.<sup>31</sup>
- Many believe the private sector can operate infrastructure systems (such as toll roads and parking meter systems) more efficiently and affordably than the public sector. This is because the private sector is given a profit incentive to provide the most efficient service to the consumer.<sup>32</sup>
- At a time when many U.S. states and municipalities are trying to contain their debt, leasing assets allows them to obtain large amounts of capital, without issuing bonds and increasing the public debt.<sup>33</sup>
- PPPs can significantly reduce the time needed to fund and construct new infrastructure projects.<sup>34</sup>

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<sup>29</sup> JayEtta Z. Hecker, “Highway Public-Private Partnerships: Securing Potential Benefits and Protecting the Public Interest Could Result from More Rigorous Upfront Analysis,” *United States Government Accountability Office*, (July 24, 2008) 2.

<sup>30</sup> Asieh Mansour and Hope Nadji, “US Infrastructure Privatization and Public Policy Issues,” *RREEF Research*, 2006, 3.

<sup>31</sup> JayEtta Z. Hecker, “Highway Public-Private Partnerships: Securing Potential Benefits and Protecting the Public Interest Could Result from More Rigorous Upfront Analysis,” *United States Government Accountability Office*, (July 24, 2008) 2.

<sup>32</sup> Asieh Mansour and Hope Nadji, “US Infrastructure Privatization and Public Policy Issues,” *RREEF Research*, 2006, 3.

<sup>33</sup> Kathleen Brown, “Are Public-Private Transactions the Future of Infrastructure Finance?” *Public Works Management Policy* Vol 12: 320 (2007) 321.

<sup>34</sup> U.S. Department of Transportation, “Report to Congress on the Costs, Benefits and Efficiencies of Public-Private Partnerships for Fixed Guideway Capital Projects,” *Report of the Secretary of Transportation to the United States Congress Pursuant to 49 U.S.C. 5309 (c)(6)* (December 2007) 11.

## Potential Pitfalls of Privatization

- In some concession agreements, ownership of the asset technically remains with the public sector. However, the length of many long-term concession agreements (the Chicago Skyway lease is 99 years) effectively transfers ownership to the private sector for tax purposes. This can limit public control of the asset. Additionally, the effective ownership allows private firms the ability to deduct depreciation on assets from their federal taxes.<sup>35</sup>
- If there is no revenue sharing agreement with the concessionaire, the government receives a large amount of cash upfront, but forfeits future revenues.<sup>36</sup>
- Proponents of privatization often cite the ability of private companies to deliver goods and services more efficiently than government. However, when a private concessionaire is granted the right to operate a public asset in a long-term agreement, it can eliminate the competition that drives private efficiency.
- Evidence suggests that tolls and fees of privatized infrastructure rise faster and more steeply under private control than public.<sup>37</sup> For example, when Indiana privatized the Indiana Toll Road, the contract scheduled tolls to increase by 4 percent per year, more than doubling the toll paid

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<sup>35</sup> JayEtta Z. Hecker, “Highway Public-Private Partnerships: Securing Potential Benefits and Protecting the Public Interest Could Result from More Rigorous Upfront Analysis,” *United States Government Accountability Office*, (July 24, 2008) 3.

<sup>36</sup> *Ibid*, 6.

<sup>37</sup> *Ibid*, 6.

by a car between 2006 and 2010 (though the operate increased tolls in two increments, not annually).<sup>38</sup>

- For leases of existing infrastructure assets, the Government Accountability Office reports “the public sector may give up more than it gains if the net present value of the future stream of revenues (less operating and capital costs) given up exceeds the concession [lease] payment received.”<sup>39</sup>

While there are scholars that argue against PPPs of any kind in transportation, there is some general agreement that PPP projects of the type largely endorsed by the U.S. Department of Transportation (those in which private contractors are involved in planning and building new infrastructure) are mostly beneficial for governments and citizens. The U.S. Department of Transportation believes these PPPs can improve transit efficiency through competition, offer reduced public risk, expedite infrastructure improvement and increase innovation by involving private companies early in the design period among other benefits.<sup>40</sup>

Not all PPPs are viewed as favorably as those that involve private companies in the design and construction of new infrastructure projects. In recent years, some state and local governments have experimented with leasing existing infrastructure assets for an upfront cash payment. Often, these payments are not earmarked for transportation improvements, but used to solve short-term budget problems, and do not include agreements to share future revenues. While this type of privatization can help shore up the finances of a state or locality, there are significant

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<sup>38</sup> Dennis J. Enright, “Public versus Private Toll Road Choice in the United States,” *NW Financial Group*, (June 2007) 5.

<sup>39</sup> JayEtta Z. Hecker, “Highway Public-Private Partnerships: Securing Potential Benefits and Protecting the Public Interest Could Result from More Rigorous Upfront Analysis,” *United States Government Accountability Office*, (July 24, 2008) 6

<sup>40</sup> U.S. Department of Transportation, “Report to Congress on the Costs, Benefits and Efficiencies of Public-Private Partnerships for Fixed Guideway Capital Projects,” *Report of the Secretary of Transportation to the United States Congress Pursuant to 49 U.S.C. 5309 (c)(6)* (December 2007) 12.

concerns about their impact on the public, and on the long-term fiscal health of the city or state.

According to the Government Accountability Office:

Using a “public-private partnership to extract value from an existing facility raises issues about the use of those proceeds and whether future users might potentially pay higher tolls to support current benefits. In some instances, up-front payments have been used for immediate needs, and it remains to be seen whether these uses provide long-term benefits to future generations who will potentially be paying progressively higher toll rates to the private sector throughout the length of a concession agreement.”<sup>41</sup>

The cost-benefit analysis portion of this paper will investigate the potential future value of the Chicago Skyway and the Chicago Parking Meter System to the City if they maintained control of the assets instead of leasing them to a private concessionaire. This provides some insight into whether the City is giving up more in long-term benefits than it receives from the upfront payments.

In contrast, some PPP projects include revenue sharing in the agreement to limit private profits from toll roads. The Texas State Highway 130 and the Virginia Pocahontas Parkway are examples of PPPs that require companies to share profits with the public if the company’s internal rate of return is over a certain amount.<sup>42</sup> Revenue sharing will be discussed later in this paper, when the Chicago Skyway is compared to other toll road privatizations in the United States.

While this paper is intended in part to raise concerns about the sustainability of long-term concession agreements, it has another major focus. Even though the long-term effects of lengthy concession deals are unknown, many cities and states may still feel leasing their assets is a viable way to help solve budget issues. Two popular public goods for cities to lease for an upfront payment have been toll roads and parking meter systems. This paper will examine which of these assets has the potential to deliver the greatest upfront payment, while giving up the fewest future benefits. It is important to note that while I refer to toll roads and parking meter systems as public

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<sup>41</sup> JayEtta Z. Hecker, “Highway Public-Private Partnerships: Securing Potential Benefits and Protecting the Public Interest Could Result from More Rigorous Upfront Analysis,” *United States Government Accountability Office*, (July 24, 2008) 6.

<sup>42</sup> Xu, Wei, “The Review of PPP Toll Roads in the US and the Simulation of the Chicago Skyway,” *Oregon State University*, presented August 2008, 13.

goods because they meet many of the criteria discussed at the beginning of this paper, they are technically *quasi-public goods* because the toll or parking fee could reduce access to the goods for some segments of the population. However, that does not significantly impact this analysis, so they are referred to as public goods for simplicity.

In order to analyze the costs and benefits of privatizing toll roads and parking meter systems, I will use the city of Chicago as a case study. The next section will discuss the Chicago case and their lease of the Chicago Skyway and Chicago Parking Meter System.

## The Lease of the Chicago Skyway

In 2005, the City of Chicago entered into a long-term lease agreement for an upfront payment of \$1.83 billion, and the length of the lease was 99 years. The lease was largely entered into so the City of Chicago could use a portion of the upfront payment to close a short-term budget gap. The concessionaire was Skyway Concession Company (SCC), which was formed jointly by two foreign companies, Australia's Macquarie Infrastructure Group and Spanish Cintra Concesiones de Infraestructuras de Transporte.<sup>43</sup> The Chicago Skyway agreement was the first long-term lease agreement in the United States, and has served as a model for projects in many other regions.

The Chicago Skyway is part of Interstate 90, carrying traffic from Indiana to Chicago's South Side. Originally built in 1958, the City of Chicago renovated the Skyway between 2001 and 2004 (the year before the Skyway was leased). Facing a budget deficit in 2004, the City asked Deloitte and Touche LLP to calculate the value of the Chicago Skyway as the City investigated its revenue options. Deloitte calculated that 2004 total vehicle's volume was \$17.4 million, increasing an average of 5.5% between 1995 and 2004, and toll revenue was \$41.1

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<sup>43</sup> Chicago Skyway homepage, "history" <http://www.chicagoskyway.org/about/>

million, also averaging a 5.5% average change. Deloitte placed the total net deficit of the Skyway in 2004 at \$134.5 million.<sup>44</sup>

Prior to leasing the Skyway in 2005, the City of Chicago did not regularly increase toll prices on the Chicago Skyway. In fact, in real terms, tolls decreased on the Skyway approximately 25 percent between 1989 and 2004.<sup>45</sup> In order for a concessionaire to profit from leasing the Skyway, the lease agreement includes an approved toll increase schedule through 2017. The chart below shows the agreed upon toll increases from 2005 through 2017.<sup>46</sup> After 2017, the toll increase will be capped at 2 percent of the Consumer Price Index or the increase in nominal gross domestic product per capita (whichever inflation measure is highest).

**Maximum Toll Rates for Chicago Skyway**

<b>Toll Term</b>	<b>Maximum Toll Rate</b>
2005-2008	\$2.50 for 2-axles; \$1.20 per axle for other vehicles
2008-2011	\$3.00 for 2 axles; \$1.80 per axle for other vehicles
2011-2013	\$3.50 for 2-axles; \$1.80 per axle for other vehicles
2013-2015	\$4.00 for 2-axles; \$3.00 per axle for other vehicles
2015-2017	\$4.50 for 2-axles; \$3.60 per axle for other vehicles

In addition to setting maximum toll rates, the lease agreement also includes standards of road maintenance and operations, such as emergency planning, toll collection procedures, snow

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<sup>44</sup> Xu, Wei, “The Review of PPP Toll Roads in the US and the Simulation of the Chicago Skyway,” *Oregon State University*, presented August 2008, 22.

<sup>45</sup> The Pew Center on the States, “Driven by Dollars: What States Should Know When Considering Private Partnerships to Fund Transportation,” 2009, 9.

<sup>46</sup> Xu, Wei, “The Review of PPP Toll Roads in the US and the Simulation of the Chicago Skyway,” *Oregon State University*, presented August 2008, appendix A, 74.

removal, and other operational issues the concessionaire must meet and fund.<sup>47</sup> The City of Chicago enforces safety and operating standards, and the Chicago Police Department patrols the roadway.<sup>48</sup>

It is also worth noting two provisions that are absent from the Chicago Skyway lease agreement. The agreement does not include any future revenue sharing between the City and the concessionaire – all future profits belong to the Skyway Concession Company.<sup>49</sup> There is also no non-compete clause in the agreement. The exclusion of a non-compete clause is likely because a large portion of the Skyway is a bridge, and because of the urban setting of the Skyway, both of these factors mean there is limited opportunity and space to expand other roadways,

The SCC originally financed the purchase of the Skyway through equity bank loans. However, shortly after the purchase, the company refinanced the funding structure, significantly reducing the equity from the original purchase price. According to an NW Financial Group report, “the post financing equity was reduced from 49% of the purchase price to 36% of the purchase price. This lower equity level could be recovered in full in 12 years based upon expected cash flows. After the recovery the private operator is in the deal for the remaining 87 years with no equity at risk.”<sup>50</sup> Refinancing the funding structure allowed the concessionaire more potential profit than originally implied in the lease agreement. The 99 year lease agreement also effectively transferred ownership of the Chicago Skyway to the concessionaire for tax purposes.

Chicago received an upfront payment of \$1.83 billion from the lease. The city used \$855 million of the profits to retire debt, placed \$500 million in a long-term reserve fund to generate

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<sup>47</sup> The Pew Center on the States, “Driven by Dollars: What States Should Know When Considering Private Partnerships to Fund Transportation,” 2009, 9.

<sup>48</sup> Roland Calia and Laurence Msall, “The Chicago Experience: A P3 Checklist,” *The Civic Federation* (2011), 9.

<sup>49</sup> The Pew Center on the States, “Driven by Dollars: What States Should Know When Considering Private Partnerships to Fund Transportation,” 2009, 9.

<sup>50</sup> Dennis J. Enright, “*The Chicago Skyway Sale: An Analytical Review*,” NW Financial Group, (2006) 5.

interest income, \$375 million in an annuity for operations and \$100 million for human service programs.<sup>51</sup>

## The Lease of the Chicago Parking Meter System

In December 2008, the City of Chicago leased its parking meter system to Morgan Stanley for 75 years in exchange for a \$1.157 billion up-front payment. Chicago Parking Meters, LLC – the name of the private company Morgan Stanley established to operate Chicago’s parking meter system -- assumed control of the city’s 36,000 parking meters in February of 2009.

Similar to the Chicago Skyway lease, the parking meter agreement established some tasks that the concessionaire must perform and standards the company must meet to comply with the agreement. The intention of these provisions is to ensure that the quality of service the public receives is better than the service under the previous, publically operated model. One of these provisions was a requirement for capital improvements to the meter system, most notably, that any meter with a fee of over \$1.50 per hour must have a non-cash payment option.<sup>52</sup> It required the company to install the payment system no more than 180 days after the fee reached \$1.50. The City of Chicago estimated the cost of these capital improvements to be \$50 million in the first two years of the lease.<sup>53</sup>

In exchange for providing capital improvements in addition to the \$1.157 up-front payment, Chicago Parking Meters, LLC was allowed five specific rate increases to the parking meter system between 2009 and 2013. After the scheduled increases, future potential increases are tied to inflation, similar to the toll increase agreement in the Chicago Skyway deal. The parking meter lease agreement divided the city’s parking meters into three classifications: Loop

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<sup>51</sup> Roland Calia and Laurence Msall, “The Chicago Experience: A P3 Checklist,” *The Civic Federation* (2011), 9.

<sup>52</sup> David H. Hoffman, “Report of Inspector General’s Findings and Recommendations: An Analysis of the Lease of the City’s Parking Meters,” *Office of the Inspector General: City of Chicago*, (June 2, 2009) 15.

<sup>53</sup> *Ibid*, 15.



meters, central business district meters and neighborhood meters, establishing different rate schedules for each classification. The Chicago Office of the Inspector General put together the below chart detailing the scheduled rate changes from 2009-2013, comparing them to the 2008 rate under public ownership and operation.<sup>54</sup>

### Parking Meter Rate Schedule

<b>Parking Meter Classification</b>	<b>2008 rate per hour (prior to lease)</b>	<b>2009 rate per hour</b>	<b>2010 rate per hour</b>	<b>2011 rate per hour</b>	<b>2012 rate per hour</b>	<b>2013 rate per hour</b>
Neighborhood meters	\$.25 to \$.75	\$1.00	\$1.25	\$1.50	\$1.75	\$2.00
Central Business District Meters	\$1.00	\$2.00	\$2.50	\$3.00	\$3.50	\$4.00
Loop Meters	\$3.00	\$3.50	\$4.25	\$5.00	\$5.75	\$6.50

In addition to scheduled rate increases, the lease agreement also allows the company to extend parking meter hours of operation. Most parking meters operate on Sunday, which had previously been exempt from fees, and parking meters in the Loop and parking lots are allowed to operate 24 hours. The price for those 24-hour meters is half price from 9pm to 8am. These changes in parking meter hours total an additional 35 million hours of operation time per year, with 16 million of those coming during half-price hours.<sup>55</sup>

During the first few months of operation, the new operating company increased parking meter rates in accordance with the agreement, but ran into some significant problems. Since capital improvements were not yet in place, many meters filled quickly with coins, and were not

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<sup>54</sup> David H. Hoffman, “Report of Inspector General’s Findings and Recommendations: An Analysis of the Lease of the City’s Parking Meters,” *Office of the Inspector General: City of Chicago*, (June 2, 2009) 14.

<sup>55</sup> David H. Hoffman, “Report of Inspector General’s Findings and Recommendations: An Analysis of the Lease of the City’s Parking Meters,” *Office of the Inspector General: City of Chicago*, (June 2, 2009) 14.

emptied by workers quickly enough to allow new drivers to pay the fee. Additionally, many meters were broken and not repaired, and there were incorrect fee signs for many meters. Chicago Parking Meters, LLC was unable to handle the onslaught of parking meter issues, and the City of Chicago stepped in to repair meters and issue tickets. As allowed under the lease agreement, the City of Chicago billed the company for the city's services.<sup>56</sup> The city's ability to monitor the company's operation of the parking meter system represents the type of public safeguards governments try to include in agreements to protect the public interest. However, the safeguards are a two-way street. Private concessionaires often include provisions in lease deals that require the city to compensate the concessionaire for some revenue interruptions. In December 2011, Chicago Parking Meters, LLC billed the City of Chicago \$2.2 million for lost revenues due to street closures.<sup>57</sup> These types of safeguards for private company revenues are common in toll road leases as well. Although the parking meter lease is a lengthy 75 years, the length does not allow the concessionaire effective ownership for tax purposes.

The \$1.15 billion payment the city received from leasing the parking meter system was earmarked for a \$400 million reserve fund, a \$325 million annuity, \$326.3 million for a budget stabilization fund and \$100 million for human services programs.<sup>58</sup>

## Cost Benefit Analysis

Despite the concerns associated with leasing public and quasi-public goods to private concessionaires, many governments are still contemplating leasing assets to shore-up their finances. The cost-benefit analysis (CBA) portion of this paper analyzes the value of the Chicago

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<sup>56</sup> Jon Hillkevitch, "Chicago Parking Meters: City Rushes to Fix Meters and Bill the Company that Leased Them," *The Chicago Tribune*, March 26, 2009.

<sup>57</sup> Ed Marshall, "Parking Meter Firm Bills City \$2.2M For Lost Revenue from Street Closures," *CBS Chicago*, (December 19, 2011).

<sup>58</sup> Roland Calia and Laurence Msall, "The Chicago Experience: A P3 Checklist," *The Civic Federation* (2011), 10.

Skyway and the Chicago Parking Meter System to the City of Chicago. The findings from this CBA will inform my recommendations about which, if any, public goods governments should consider leasing.

My CBA analysis compares the net present value (NPV) of the parking meter system and the Skyway to the City of Chicago if the City maintained ownership and operation of them, with the net present value to the private lessee. For the sources of the data involved in this CBA, please see the Appendix.

## Stakeholders

Three key stakeholders for my CBA are:

### *City of Chicago*

The primary stakeholder in my analysis is the City of Chicago. The City has the primary responsibility for maintaining its infrastructure and the costs associated with operating roads and parking meters throughout the city. The City also collected revenue from both the toll road and parking meter system until they were leased to a private company for up-front payments. Finally, the City of Chicago is responsible for protecting the rights of its citizens, which could include access to infrastructure including toll roads and affordable parking.

### *Private Concessionaire*

The private company or partnership that leases assets from the City of Chicago has an interest in the CBA. Their ability to raise tolls and fees provides revenues to offset the upfront lease cost and the higher they are able to raise tolls, the more the concessionaire is willing to pay to lease the assets.

### *Individual Citizens*

Individuals also have a stake in whether the City of Chicago leases assets such as toll roads and parking meter systems since they are often the ones that pay the tolls and fees. However, I did not include the costs and benefits of individual citizens in this analysis for several reasons. First, the tolls and fees citizens pay are already incorporated into the revenues of either the City or the concessionaire (whichever is operating the system), so counting them as a cost to individuals would be double counting. Secondly, including them might be misleading since the tolls on the Chicago Skyway are often paid by out-of-state visitors driving through Chicago from Indiana. Finally, this paper assumes that one of government's primary roles is to act in the best interest of citizens, and protect the public. There is no way to calculate the benefit to citizens of other programs and services the City might maintain because of the upfront payment the City receives from leasing their public assets, or the benefit to citizens of paying down the City's debt with that payment. While their interests are not fully represented in the CBA analysis, I do take their interests into account when making recommendations.

## Alternatives

The three alternatives and the status quo my cost-benefit analysis explores are:

***Alternative 1:** The City of Chicago leases the operation of the Chicago Skyway but maintains control of the parking meter system*

***Alternative 2:** The City of Chicago leases the operation of the Chicago Parking Meter System but maintains control of the Chicago Skyway.*

***Alternative 3:** The City of Chicago maintains operations of both the Chicago Parking Meter System and the Chicago Skyway.*

***Alternative 4 (status quo):** The City of Chicago leases both the parking meter system and the Chicago Skyway to a private concessionaire.*

## Methodology

In order to analyze the alternatives available to the City of Chicago for raising revenues and operating the Chicago Parking Meter System and the Chicago Skyway Toll Road, I primarily compare the costs, benefits and net present value of the City maintaining operations of these assets and operating them under the terms of the contracts entered into when they leased the assets with the costs, benefits and net present value of the assets operated under the terms of the lease agreement contract for the private concessionaire.

I compare the costs, benefits and net present values at the median discount rate at three time horizons (2, 5 and 10 years). When analyzing infrastructure projects and leases, the discount rate is equivalent to the projects anticipated cost of capital, or the cost of borrowing for the project.<sup>59</sup> Generally, the cost of capital for governments is lower than for private entities, so the discount rate is different for the City of Chicago and the private concessionaire in the matrix. The rates are indicated below each matrix.

The time horizons were chosen in order to best reflect costs and benefits within a realistic timeframe. While the leases of the Chicago Parking Meter System and Chicago Skyway are for 75 and 99 years respectively, I feel those timeframe are too long to accurately predict the costs and benefits. I chose 10 years because it seemed as far as could reasonably be calculated. I also chose to reflect the costs and benefits at 2 and 5 years out because 5 years will reflect most of the scheduled rate increases for both of the projects, and both projects have capital improvement costs within the first 2 years.

## Key Assumptions

1. An inflation rate of 3 percent.<sup>60</sup>

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<sup>59</sup> “For Whom the Road Tolls: Corporate Asset or Public Good: An Analysis of Financial and Strategic Alternatives for the Pennsylvania Turnpike,” *Democratic Caucus of the Pennsylvania House of Representatives* (February 2008) 22.

<sup>60</sup> David H. Hoffman, “Report of Inspector General’s Findings and Recommendations: An Analysis of the Lease of the City’s Parking Meters,” *Office of the Inspector General: City of Chicago*, (June 2, 2009) 16.

When the city of Chicago hired a consulting firm to calculate the value of the Chicago Parking Meter System to a private investor, the firm assumed a rate of three percent inflation in its calculations. Later, the Chicago Office of the Inspector General performed an independent analysis on the lease agreement, and also used three percent as its rate of inflation. To be consistent, I have assumed a three percent inflation rate in all calculations.

2. All parties increase tolls and fees at the rates outlined in the lease agreements.

## Matrix

Median Discount Rate (Cost of Capital)						
	Chicago Parking Meter System			Chicago Skyway Toll Road		
	Costs	Benefits	Net Present Value	Costs	Benefits	Net Present Value
<b>Year 2</b>						
<b>Private Concessionaire*</b>	\$923,801,051	\$131,249,165	(\$792,551,886)	\$1,635,498,684	\$132,309,033	(\$1,503,189,651)
<b>Public Ownership*</b>	\$34,689,860	\$147,594,075	\$112,904,215	\$129,408,000	\$142,819,210	\$13,411,210
<b>Year 5</b>						
<b>Private Concessionaire</b>	\$265,923,044	\$142,484,287	(\$123,438,757)	\$709,304,324	\$167,520,819	(\$541,783,505)
<b>Public Ownership</b>	\$26,700,986	\$221,003,852	\$194,302,866	\$132,004,117	\$226,148,567	\$152,852,596
<b>Year 10</b>						
<b>Private Concessionaire</b>	\$6,295,069	\$57,361,013	\$51,065,944	\$73,295,971	\$113,743,286	\$40,447,315
<b>Public Ownership</b>	\$8,575,339	\$136,404,257	\$127,828,918	\$89,966,153	\$210,777,241	\$120,811,088

\*Private Concessionaire: Parking Meter DR = 12 % Chicago Skyway DR =8.6%

\*City of Chicago: Parking Meter DR = 7% Chicago Skyway DR = 5.5%

## Analysis

According to the calculations, the City of Chicago would benefit most from maintaining control of both the Chicago Parking Meter System and the Chicago Skyway. In all years the net present value of both assets is positive for the City. We can assume with these net present values that the City's revenues would be over the amount received for leasing the assets within the 75 or 99 years of the lease agreement.

The parking meter system is the most valuable to the City operated under the terms of the lease, generating a higher net present value than the Chicago Skyway in all years. If the City were to choose only one asset to privatize, it appears privatizing the Chicago Skyway would be the most prudent, generating a lump sum payment of nearly \$2 billion dollars, but allowing the City to maintain revenues from the parking meter system. However, with a high NPV for both the parking meter system and the Chicago Skyway, the City should maintain control of both, if possible.

When compared to the NPV of the assets to the private concessionaire, the City's NPV is much higher. Comparing these values underscores why the lease agreements were entered into for such a long period of time. Since the cost of capital is higher for private companies, it will take many years for the private concessionaire to generate enough revenue from the assets to offset the initial payment and make a profit.

One of the key assumptions of this analysis is that the City of Chicago would be able to operate the assets under the same terms as the private concessionaire. This means the City is able to raise tolls and fees at the same rate as a private company. Historically, it has been difficult for governments to raise tolls and fees, so this is a large assumption. Another assumption is that both the City and the private concessionaire would have a cost of capital that is near the median cost of capital for infrastructure projects. It is possible that either entity could have a cost of capital rate that is higher or lower than the median rate. The following sensitivity analysis will investigate how the value of the assets changes if the City is not able to raise tolls and fees at the same rate as the private concessionaire, as well as how the CBA would change if the cost of capital is higher or lower.

## Sensitivity Analysis

Politically, it can be difficult for cities to raise tolls and fees at the same rate as private companies. The public generally does not support increases, and politicians are often reluctant to vote for an increase for fear of angering their constituents. In Chicago, for example, many parking meter rates had not been increased in 20 years prior to the lease agreement.<sup>61</sup> Other cities such as Los Angeles and Phoenix have been able to increase rates substantially without leasing their parking meter systems.<sup>62</sup> The sensitivity analysis matrix below examines how the CBA findings would change if under the City's control, revenues were only 50 percent of those expected under the lease agreement because tolls and fees are increased considerably less. The median discount rate is used.

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<sup>61</sup> David H. Hoffman, "Report of Inspector General's Findings and Recommendations: An Analysis of the Lease of the City's Parking Meters," *Office of the Inspector General: City of Chicago*, (June 2, 2009) 26.

<sup>62</sup> *Ibid*, 27.



### Matrix: Political Viability of Raising Tolls

Median Discount Rate (Cost of Capital)						
	Chicago Parking Meter System			Chicago Skyway Toll Road		
	Costs	Benefits	Net Present Value	Costs	Benefits	Net Present Value
<b>Year 2</b>						
<b>Private Concessionaire*</b>	\$923,801,051	\$131,249,165	(\$792,551,886)	\$1,635,498,684	\$132,309,033	(\$1,503,189,651)
<b>Public Ownership*</b>	\$34,689,860	\$73,797,037	\$39,107,177	\$129,408,000	\$71,409,605	(\$57,998,395)
<b>Year 5</b>						
<b>Private Concessionaire</b>	\$265,923,044	\$142,484,287	(\$123,438,757)	\$709,304,324	\$167,520,819	(\$541,783,505)
<b>Public Ownership</b>	\$26,700,986	\$122,481,397	\$95,780,411	\$132,004,117	\$113,074,283	(\$18,929,834)
<b>Year 10</b>						
<b>Private Concessionaire</b>	\$6,295,069	\$57,361,013	\$51,065,944	\$73,295,971	\$113,743,286	\$40,447,315
<b>Public Ownership</b>	\$8,575,339	\$69,022,217	\$60,446,878	\$89,966,153	\$105,388,620	\$15,422,467

\*Private Concessionaire: Parking Meter DR = 12 % Chicago Skyway DR =8.6%

\*City of Chicago: Parking Meter DR = 7% Chicago Skyway DR = 5.5%

In addition to the political difficulty of raising tolls, there is some variability in the cost of capital for infrastructure projects. In the CBA Matrix above, the calculations were made using the median cost of capital for both the private concessionaire and the City. The two matrixes below show how the costs and benefits of the leases would change if the entities were subject to the lowest cost of capital rate, or the highest rate.

### Matrixes: Variability of Cost of Capital

Lowest Discount Rate (Cost of Capital)						
	Chicago Parking Meter System			Chicago Skyway Toll Road		
	Costs	Benefits	Net Present Value	Costs	Benefits	Net Present Value
<b>Year 2</b>						
<b>Private Concessionaire*</b>	\$974,715,000	\$137,439,556	(\$837,275,444)	\$1,657,031,563	\$133,885,967	(\$1,523,145,596)
<b>Public Ownership*</b>	\$32,631,681	\$154,989,832	\$122,358,151	\$132,965,744	\$146,476,102	\$13,510,358
<b>Year 5</b>						
<b>Private Concessionaire</b>	\$327,640,992	\$168,878,958	(\$64,739,469)	\$758,311,943	\$175,579,764	(\$582,732,179)
<b>Public Ownership</b>	\$34,388,459	\$262,901,523	\$228,513,064	\$161,036,036	\$250,258,141	\$89,222,105
<b>Year 10</b>						
<b>Private Concessionaire</b>	\$12,372,484	\$79,810,524	\$67,438,040	\$85,121,581	\$124,826,734	\$39,704,613
<b>Public Ownership</b>	\$15,193,769	\$215,898,491	\$200,704,722	\$119,190,375	\$266,791,052	\$147,600,677

\*Private Concessionaire: Parking Meters DR = 10% Chicago Skyway DR = 8.1%

\*City of Chicago: Parking Meters DR = 5% Chicago Skyway DR = 4.5%

<b>High Discount Rate (Cost of Capital)</b>						
	<b>Chicago Parking Meter System</b>			<b>Chicago Skyway Toll Road</b>		
	<b>Costs</b>	<b>Benefits</b>	<b>Net Present Value</b>	<b>Costs</b>	<b>Benefits</b>	<b>Net Present Value</b>
<b>Year 2</b>						
<b>Private Concessionaire*</b>	\$875,555,600	\$125,331,717	(\$750,223,883)	\$1,613,039,340	\$130,697,342	(\$1,482,341,998)
<b>Public Ownership</b>	\$29,346,870	\$140,726,577	\$111,379,707	\$126,001,359	\$139,314,734	\$13,313,375
<b>Year 5</b>						
<b>Private Concessionaire</b>	\$204,542,518	\$121,164,189	(\$83,378,329)	\$663,281,906	\$159,902,713	(\$503,379,193)
<b>Public Ownership</b>	\$19,503,050	\$184,250,089	\$164,747,039	\$118,041,190	\$204,898,995	\$86,857,805
<b>Year 10</b>						
<b>Private Concessionaire</b>	\$3,548,019	\$44,044,258	\$40,496,239	\$63,162,750	\$104,977,644	\$41,814,894
<b>Public Ownership</b>	\$5,368,128	\$93,047,113	\$87,678,985	\$71,391,513	\$170,056,625	\$98,665,112

\*Private Concessionaire: Parking Meters DR = 14% Chicago Skyway DR = 9.1%

\*City of Chicago: Parking Meters DR = 9% Chicago Skyway DR = 6.5%

## Analysis

When the possibility of lower revenues for the City if it cannot raise tolls and fees at the same rate as a private concessionaire is taken into account, the logical choice for the City is less clear. While the parking meter system has a higher NPV than the Chicago Skyway in each time horizon, the NPV is declining after year 5. The Chicago Skyway NPV on the other hand, is increasing. When strictly analyzing the numbers, it again looks as though the City should maintain control of both systems since the NPV is positive for the city.

However, since the NPV of the Chicago Skyway looks as though it will continue to increase and the parking meter system's will continue to fall, the City would be better off leasing the parking meter system for an upfront payment and maintaining operation of the Chicago Skyway if it chose to only lease one asset.

When the cost of capital rate is changed to account for the lowest or highest possible cost of capital, the parking meter system is still the most valuable asset for the City to maintain and operate under the terms of the lease. The parking meter system generates a higher net present value than the Chicago Skyway at all points except in year 10 of the highest discount rate.

## **Comparison with Other Lease Agreements**

Chicago was one of the first cities to explore the privatization of public goods for an upfront payment, but many more cities and states have followed their example. However, there are several different ways to structure these agreements. Some may generate a smaller immediate investment for the city or state, but may include more safeguards for the public interest and greater future revenue for cities and states. Below are some examples of the way other state and local governments are exploring PPPs.

### ***Northern Virginia: Dulles Toll Road***

The Dulles Toll Road expansion in Northern Virginia actually predates the Chicago Skyway lease and involved private capital to build the road. It includes a revenue sharing agreement that is interesting for other regions thinking of leasing toll roads. In exchange for building the toll road, the private concessionaire is given a percentage of the toll road profits. Unlike the Chicago Skyway agreement, however, the private concessionaire does not decide when rates are increased, the Public Utilities Commission decides if a previously agreed upon rate increase will be implemented. The maximum rate of return the private concessionaire can achieve is 14 percent, which was determined by the risk the private concessionaire incurred from the project. Other revenues are designated for the Virginia Department of Transportation.<sup>63</sup> Virginia has continued to use this model of revenue sharing with other privatizations including the Pocahontas Parkway.

### ***Indianapolis Parking Meter System***

In 2010, Indianapolis' city council voted to lease the city's parking meter system to a private concessionaire, a Dallas based company. The agreement, however, was very different from the Chicago parking meter deal. The agreement gave Indianapolis only \$20 million upfront, but will provide an estimated \$363 to \$620 million over the lease period because of revenue sharing. Additionally, the deal will be reevaluated every 10 years, and the City has the option to terminate the agreement at each of these reevaluations.<sup>64</sup> The Indianapolis case demonstrates the kind of long-term benefits privatizing parking meter systems can potentially bring to cities if a very large upfront sum of money is not needed.

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<sup>63</sup> Mark Allen Euritt and Randy Machemehl et al., "An Overview of Highway Privatization: Research Report 1281-1," *Center for Transportation Research at University of Texas at Austin*, (February 1994), 20.

<sup>64</sup> IBJ Staff, "City-County Council OKs Parking Privatization," *Indianapolis Business Journal*, November 15, 2010.

These two examples illustrate the long-term benefits that may come from leasing public assets if a long-term view of the partnership is taken. Including revenue sharing and allowing some review of partnerships in the middle of the lease term can help protect public interests while also generating more revenue for the city or state over the long-term. In the short-term, however, the upfront payment will be less than if all future revenue is given to the concessionaire. City and state governments that are in a severe financial crisis may choose to use the Chicago model in order to generate the largest upfront payment. The bankrupt city of Harrisburg Pennsylvania, for example, will lease its parking meters and parking garages to a private company for a sum of approximately \$215 million in order to begin paying down the city's crushing debt. Governments will structure their lease agreements differently depending on the city or states long-term and short-term needs.

## **Strategic Recommendations**

As the Government Accountability Office notes, there are many potential dangers to governments leasing public infrastructure for upfront payments to close budget gaps. Historically, it has been the role of government to protect the public interests, and it is difficult to predict if forgoing future revenue for 75 to 99 years for immediate payment will be in the best interests of the public. For this reason, I recommend that cities and states avoid leasing existing public goods such as toll roads and parking meter systems, and pursuing PPPs only for new infrastructure projects that provide more future benefits for governments. If cities and states do enter into long-term concession agreements, it is best to do so with a revenue sharing agreement that protects some revenue flows and helps protect the public interest. As discussed in the previous section, a number of cities and states have experimented with revenue sharing agreements that do not generate as large of an upfront payment, but provide more benefits in the long-term. Oftentimes, these types of agreements can also allow cities and states the opportunity to reevaluate the terms

of the lease at shorter intervals (10 years instead of 75, for example). An additional benefit to allowing the contract to be reviewed every 10 years is it maintains competition for the lease, providing more incentives for the private concessionaire to operate the system as efficiently as possible.

The difficulty of revenue-sharing PPP agreements is they may not generate significant short-term revenue. When governments have a budget shortfall and are faced with raising revenues or cutting spending, leasing infrastructure assets is an attractive way to raise revenues without raising taxes. A lease agreement that produces a large up-front payment, then, may be good for politicians and the private concessionaire, but it may be detrimental for citizens. As mentioned in a previous section, tolls and fees of privately owned toll roads and parking meter systems tend to increase more dramatically than publically owned and operated systems. While there are clauses placed in agreements to limit the amount a private concessionaire can raise a toll or fee, these limits tend to be significant and the private concessionaire has little incentive in most cases not to raise tolls and fees to the maximum level.

In addition to the greater burden placed on consumers, the city or state will likely be left with fewer revenues in the long-term if they lease public assets. Forgoing revenues for 75 to 99 years puts the short-term budget situation of the government ahead of the long-term fiscal health of the city or state. This prioritization places an unfair burden on citizens and government officials down the road who may be left with fewer financial resources.

If, despite these potential dangers, a city or state chooses to enter into long-term agreements for short-term gain, I recommend leasing only one public good. Leasing only one asset can help protect the public interests by ensuring a steady stream of future revenue from other public assets, while allowing the city or state an upfront sum for a difficult budget year. Leasing only one asset can also help ensure more public goods remain accessible for all citizens. Perhaps most importantly, leasing only one asset allows the city to track and evaluate the effects of the lease on city operations and the public before entering into more long-term contracts.

As I have discussed, two commonly leased assets are toll roads and parking meter systems to generate large upfront revenues. If available, I recommend leasing one of these assets for an upfront payment to alleviate immediate budget concerns, and maintaining control of the other asset, but operating it more as a private concessionaire would – increasing tolls or fees to keep pace with inflation and generate enough revenue to repair city infrastructure. In the case of Chicago, it appears that leasing the Chicago Skyway Toll Road and maintaining control of the City’s parking meter system is the most logical choice. If the city can maintain the parking meter system at rates near that of a private concessionaire, the system is worth up to \$200 million over 10 years. The toll road by comparison, is worth about \$150 million over 10 years at the lowest discount rate.

If the city is unable to increase tolls on the asset it chooses not to lease, then it would be financially logical from a short-term perspective to lease both assets. As previously mentioned, however, I recommend only leasing one asset to protect public interests and maintain long-term fiscal health. In the case of Chicago, if fees could not be increased at the same rate as a private concessionaire, maintaining control of the toll road and leasing the parking meter system is the most logical choice. In the long-term, the Chicago Skyway’s value continues to grow, while the parking meter systems’ value declines if tolls and fees are not substantially raised.

These recommendations are likely to hold true if a city has a parking meter system and toll road of similar value to the city of Chicago’s, but every case is different. An overarching recommendation from this memorandum is that governments should closely examine the long-term value of their public goods before considering a lease for an upfront payment. Revenue streams that are greater than expected could lead the government to undervalue the asset, forgoing significant future revenue. However, revenue streams that are less than expected could diminish the long-term value of an asset. This is difficult to predict, especially for lease terms of 75 to 99 years, so cities and states should think carefully about leasing assets and do so only when absolutely necessary.



## Weaknesses and Limitations

The biggest limitation of my policy memo is its limited applicability to other cities outside of Chicago. While another city considering leasing some public goods may be interested in reading this study, every situation and asset is different, so you cannot directly apply my findings to other cases. While the Chicago privatization cases have influenced the way other cities and states have leased their public goods, there are other ways of structuring contracts, which places a limitation on the widespread usefulness of this analysis.

Another limitation of my memorandum is my inability to predict costs and revenues 75 or 99 years into the future. There are many different factors that could affect costs and benefits of assets far into the future, such as a recession, a spike in fuel costs, or the development of new technologies that make the public less willing to pay tolls and fees. These factors are not just unknown to me, but they are unknown to the government and concessionaire entering into a lease agreement. While both parties usually try to minimize their potential risk from such unknown events, it is impossible to completely eliminate risk. Governments should take into account the unpredictability of the future before entering into such long-term agreements.

My inability to capture the costs and benefits of leasing public goods to individual citizens is another limitation. While I described the potential effects of leasing public goods on citizens and how the leasing assets relates to broader questions of the roll of government, I was not able to put tangible numbers for citizens into the CBA. It would be very difficult to place a monetary value on the benefits citizens receive from public goods, or the opportunity cost of leasing those goods to private organizations. If I were able to better predict the value of public goods to citizens, or the value of services that an upfront payment to a City might fund, this analysis would be more useful.

Finally, the fact that my analysis only investigates the costs and benefits of leasing two assets is a limitation. There are several public systems that cities and states have leased or considered leasing, and each merits examination.

## Conclusion

Over the past few decades, public perceptions about the role of government and government spending have changed. Many Americans have begun to favor a more limited government role in providing goods and services, believing private organizations can deliver goods and services more efficiently than government. At the same time, government at all levels are facing budget deficits and structural problems that make it difficult to maintain a high service level for many services. These problems were exacerbated by the Great Recession that saw federal, state and local revenues plummet, causing drastic budget cuts. All of these factors help illustrate why governments are increasingly turning to public-private partnerships to deliver goods and services, particularly for transportation projects that require large amounts of capital.

Some governments, however, are taking PPPs one step further and leasing existing public infrastructure goods for an upfront revenue payment that can stabilize the budget. This paper agrees with several other organizations, including the Government Accountability Office, that these lease agreements may not be in the long-term interests of state and local government, or of the public. In the short-term, leasing goods for a large sum of money seems rational, and it can allow governments to maintain services they might otherwise cut in the face of declining revenues. However, over the long-term, the city or state could give up significant future revenues,

especially if the cities or states are able to raise tolls and fees at a similar rate as a private concessionaire.

Despite the many dangers to leasing a public good for an upfront payment, many cities and states are still pursuing these agreements. One of the major focuses of this paper was not only to determine which of two common assets (toll roads or parking meter systems) a city or state should consider leasing to generate a substantial upfront payment, but also produce the most future revenues. This analysis found that in the case of Chicago, it makes the most sense for the City to maintain control and operation of both goods in the long-term to generate revenues and protect public interests. However, it may be unrealistic or optimistic to expect cities to forego a large upfront payment if one is offered, so in the event the city decided to lease an asset, this analysis found that leasing the toll road and maintaining control of the parking meter system is the most efficient choice. This is only the case, however, if the city is able to increase tolls and fees at the same rate as a private concessionaire. Since raising tolls and fees is politically difficult, it may be the case that toll roads and parking meter systems are not as valuable for cities as for private concessionaires. If the city maintains control of one asset, but is not able to raise fees as substantially, it makes more sense to lease the parking meter system and continue operating the toll road in the long-term.

While these recommendations and findings may help other cities assess the long-term value of their public assets, they should think carefully before entering into long concession agreements. Seventy-five to 99 years is a significant period of time for a government to forgo revenue from assets, and it is impossible to predict events that might occur during that time, or other factors that could impact governments and private companies. Governments must be cautious when entering into agreements to ensure the public is protected and the city or state is getting the greatest long-term benefits possible from its assets -- not putting short-term needs ahead of long-term stability.

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## Appendix

<b>Chicago Parking Meter System Projected Revenues</b>		
<b>Year Number</b>	<b>Year</b>	<b>Projected Revenues</b>
0	2009	\$47,033,194
1	2010	\$58,636,053
2	2011	\$70,238,911
3	2012	\$85,329,358
4	2013	\$93,444,629
5	2014	\$93,755,508
6	2015	\$95,343,863
7	2016	\$103,459,133
8	2017	\$105,047,487
9	2018	\$106,635,842
10	2019	\$115,061,992

Source: *Chicago Metered Parking System Concession Agreement: An Analysis of the Long-Term Leasing of the Chicago Parking Meter System* by Patryk Piwinski, University of Illinois at Chicago and the Chicago 32<sup>nd</sup> Ward Office.

<b>Costs of the Parking Meter System to the Private Concessionaire</b>		
<b>Year</b>	<b>Cost</b>	<b>Reason for Cost</b>
0	\$1,157,000,000 \$25,000,000 \$5,000,000	Lease Upfront Payment Capital Improvements Operating Costs
1	\$25,000,000 \$5,000,000	Capital Improvements Operating Costs
2-10	\$5,000,000 (per year) \$500,000 (per year)	Operating Costs Capital Costs

Source: *Report of the Inspector General's Findings and Recommendations: An Analysis of the Lease of the City's Parking Meters* (June 2009).

<b>Costs of the Parking Meter System to the City of Chicago</b>		
<b>Year</b>	<b>Cost</b>	<b>Reason for Cost</b>
0	\$25,000,000 \$5,000,000	Capital Improvements Operating Costs
1	\$25,000,000 \$5,000,000	Capital Improvements Operating Costs
2-10	\$5,000,000 (per year) \$500,000 (per year)	Operating Costs Capital Costs

Source: *Report of the Inspector General's Findings and Recommendations: An Analysis of the Lease of the City's Parking Meters* (June 2009).

<b>Chicago Skyway Projected Revenues</b>		
<b>Year Number</b>	<b>Year</b>	<b>Revenues</b>
0	2005	\$49,359,000
1	2006	\$53,949,000
2	2007	\$53,468,000
3	2008	\$69,833,000
4	2009	\$71,230,000
5	2010	\$72,655,000
6	2011	\$89,991,000
7	2012	\$91,791,000
8	2013	\$110,212,000
9	2014	\$112,416,000
10	2015	\$131,857,000

Source: *Valuation of the Indiana Toll Road and Chicago Skyway Privatizations*, MIT (February 2010)



<b>Chicago Skyway Costs to Private Concessionaire</b>		
<b>Year</b>	<b>Cost</b>	<b>Reason for Cost</b>
0	\$1,830,000,000 \$40,000,000 \$19,744,000	Lease Amount Capital Improvements Operating Expenses
1	\$40,000,000 \$21,580,000	Capital Improvements Operating Expenses
2	\$21,387,000	Operating Expenses
3	\$27,933,000	Operating Expenses
4	\$28,492,000	Operating Expenses
5	\$29,062,000	Operating Expenses
6	\$35,996,000	Operating Expenses
7	\$36,716,000	Operating Expenses
8	\$44,085,000	Operating Expenses
9	\$44,967,000	Operating Expenses
10	\$52,743,000	Operating Expenses

Source: *Valuation of the Indiana Toll Road and Chicago Skyway Privatizations*, MIT (February 2010). *And Skyway Concession Company Holdings, LLC and Subsidiary Consolidated Financial Statements*, PricewaterhouseCoopers (2005, 2006).

<b>Chicago Skyway Costs to City</b>		
<b>Year</b>	<b>Cost</b>	<b>Reason for Cost</b>
0	\$40,000,000 \$19,744,000	Capital Improvements Operating Expenses
1	\$40,000,000 \$21,580,000	Capital Improvements Operating Expenses
2	\$21,387,000	Operating Expenses
3	\$27,933,000	Operating Expenses
4	\$28,492,000	Operating Expenses
5	\$29,062,000	Operating Expenses
6	\$35,996,000	Operating Expenses
7	\$36,716,000	Operating Expenses
8	\$44,085,000	Operating Expenses
9	\$44,967,000	Operating Expenses
10	\$52,743,000	Operating Expenses

Source: *Valuation of the Indiana Toll Road and Chicago Skyway Privatizations*, MIT (February 2010). And *Skyway Concession Company Holdings, LLC and Subsidiary Consolidated Financial Statements* PricewaterhouseCoopers (2005, 2006).

<b>Discount Rates (Cost of Capital)</b>	
Private Discount Rate – Parking Meter System	10% to 14%
Public Discount Rate – Parking Meter System	5% to 9%
Private Discount Rate – Chicago Skyway	8.1% to 9.1%
Public Discount Rate – Chicago Skyway	4.5% to 6.5%

Source: *An Analysis of Financial and Strategic Alternatives for The Pennsylvania Turnpike, Chicago Skyway Case Study Section* (February 2008) and *Report of the Inspector General's Findings and Recommendations: An Analysis of the Lease of the City's Parking Meters* (June 2009).

**Formulas Used in Calculations:**

To calculate the costs associated with the Chicago Skyway and the parking meter system, I used the formula below to discount the expenses in each year:

PV= Present Value    C = Costs    r = Discount Rate    n = number of years

$$PV_c = \frac{C}{(1+r)^n}$$

To calculate the benefits associated with the Chicago Skyway and the parking meter system, I used the formula below to discount the projected revenues in each year:

PV= Present Value    C = Costs    r = Discount Rate    n = number of years

$$PV_b = \frac{B}{(1+r)^n}$$

I then subtracted the present value of the costs from the present value of the benefits to calculate the net present value (NPV).

**Summary of Calculations:**

To calculate the costs for the Chicago Skyway and the parking meter system at each discount rate, I first added the total costs for year zero. Then, I added the costs for year one to the total from year zero and adjusted for 3 percent inflation before discounting the total using the formulas above. I continued to add the next years' costs to the remaining discounted total, adjusting for inflation, and discounting by the number of years until I reached year 10. I used the same method for the benefits, adding the revenues in each year to the discounted total from the previous year. Since the revenues for the parking meter system were already adjusted for 3 percent inflation, I did not adjust those figures again, I only discounted them.