

Public-Private Partnerships: Can the United States learn from the French experience to address its highway funding needs?

Master of Arts in Law and Diplomacy Thesis
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Under the advisement of Professor Laurent Jacque

DEDICATION

This thesis is dedicated to my loving boyfriend Dan, my brother Gregory, and my parents for their unconditional love and support, in so many ways and always.

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EXECUTIVE SUMMARY

All countries need an extensive and reliable road infrastructure network in order to promote economic growth and enhance their security. Like in most countries, US transportation budgets are constrained while traffic bottlenecks are increasing and roads' quality is on the decline. This results in growing infrastructure funding gaps and a pressing need to find alternative funding mechanisms to taxes and traditional bond financing.

The century-old model of Public-Private Partnership has recently reemerged in the context of rising involvement of the private sector in the provision of public services. PPPs are contractual agreements between a public and a private entity and typically provide significant and flexible financing. In addition, the expertise of the private sector will lead infrastructure assets to be more efficiently operated and bring in more revenues than under public provision.

In comparison to France, the United States offers a more favorable ground to the implementation of PPPs. Indeed the private sector has traditionally been involved in the US economy and a federal system presents certain advantages in the implementation of Partnerships. France has yet made greater use of the model, in particular in the operation of existing toll roads. In fact PPPs are not adapted to greenfield investments and are typically formed to explore the operational and management expertise of the private sector. As such, Partnerships would be a perfect tool in the US which is in need of pressing road maintenance investments.

Provided the United States addresses the misconceptions that exist on PPPs among the American public and continues to promote a favorable regulatory environment, only political will would remain in the way of making Public-Private Partnerships the preferred American way of providing for highway infrastructure.

INTRODUCTION

In October 2004, the eight-mile Chicago Skyway became the first existing toll road privatized in the United States. After an international competition, a consortium between Spanish Cintra and Australian Macquarie was awarded the contract to operate the Skyway under a 99-year lease which was concluded for \$1.83 billion. In January 2006, Governor Mitch Daniels of Indiana awarded a 75-year lease of the Indiana Toll Road to the same consortium for a fee of \$3.8 billion and a commitment to undertake \$400 million in road improvements. These recent landmark transactions have reinitiated the debate about the role of the US government in the provision of infrastructure and have placed the issue of highways improvement and maintenance funding at the center of political discussions. A number of infrastructure experts strongly believe that these deals have framed the way toward a greater participation of the private sector in the provision of infrastructure.

Governments provide a broad variety of services for their people, ranging from health and social programs, to defense, fire, police protection, maintaining a legal system, and the provision of physical infrastructure including transportation systems. The extent of the government's role varies among countries and has fluctuated historically inside each country. In any case, the main motivation of governments' intervention is constant: the need to put into place an infrastructure and legal environment where the national economy is able to produce the maximum resources. In the United States, economic and population growth have strained existing infrastructure and rendered the need for improvements and new construction even more pressing. In its testimony before the Subcommittee on Highways, Transit and Pipelines of the House Transportation and Infrastructure Committee, Mark Florian, Managing Director at Goldman Sachs gives a clear summary of the state of US infrastructure and the need for new funding solutions:

The United States is at a crossroads in its transportation infrastructure lifecycle. Large capital investments have been identified across the nation, which are critical to sustaining the US's economic growth and quality of life. Traditional funding sources have not kept pace with these needs, thereby requiring local governments to search for alternative and innovative financing approaches to deliver these projects. Given the magnitude of the major capital needs on the horizon, states and local governments have begun to consider alternative forms of financing, including the significant financial resources that can be provided by the global infrastructure Public-Private Partnerships market.¹

Public-Private Partnerships come in many forms but the term generally refers to contractual agreements formed between a public agency and private sector entity that allow for greater private sector participation in the delivery of transportation projects. The private sector assumes more risks and responsibilities in the development of the project compared to traditional procurement methods where the private sector participation has typically been limited to separate planning, design or construction contracts on a fee for service basis. As such, Public-Private Partnerships fall between pure public provision of infrastructure and privatization. Although recent landmark transactions could lead to think that Public-Private Partnerships are a new financing tool, they are in fact not a new concept in infrastructure development. The first recorded crossing over the River Thames, known as Old London bridge, opened in 1209 and was built under a toll concession granted by King Henry II to Peter of Colechurch, officer of the Church of St. Mary Colechurch. What would today be called a Public-Private Partnership existed between the King and the church to finance and build the bridge in return for the right to collect tolls on it.

In Europe, and in France through the concession model, states have increasingly turned to Public-Private Partnerships (PPPs) to address infrastructure funding needs. As a result, this paper will examine whether the United States could learn from the French experience and find a durable solution to its highway funding needs by using Public-Private Partnerships. In France, Public-

¹ Congress, House, Committee on Transportation and Infrastructure, Subcommittee on Highways, Transit and Pipelines, *Mark Florian: Testimony before the Subcommittee on Highways, Transit and Pipelines*, 109th Cong., 2nd sess., May 24, 2006.

Private Partnerships predate the French Revolution of 1789. In the 17th century, Henry IV, outraged by Paris's insalubrity, set out to replace the outdated and disregarded medieval obligation of removing garbage and paving streets by an organized and regular public service. This service, contracted to a private entity, was to be performed for a period of twenty years in exchange for payment directly from the king himself. Public-Private Partnerships became even more prevalent in the course of the 19th and 20th century. Since the second half of the 19th century, concessions, the French model of Public-Private Partnership, have been dominant in urban development projects, sanitation and sewer projects, and highway-building and operation.

In the United States, in the mid-19th century, the first continental railroad was completed as a result of Partnerships between the federal government and private railroad companies. Many activities currently regarded as in the government domain like education, utilities and transportation began as private enterprises or as joint public-private enterprises.² PPPs are thus not a new model but rather a variant of earlier models of private sector involvement in infrastructure incorporating a higher level of cooperative cost and risk sharing.³ In a set of changing circumstances, PPPs have recently reappeared as a potential solution to infrastructure financing because the traditional funding mechanisms that states dispose of have decreased.

This paper uses France as a basis of comparison to determine whether Public-Private Partnerships could be successfully implemented in the United States. There are many reasons why Europe, and France in particular, is a good basis for comparison. Spain and France pioneered the use of PPPs for the development of tolled motorways in Europe, with private highways concessions appearing in France in the 1970s to tap into private funding sources and free public monies. As a result, French private companies have developed a desirable experience in the operation of roads

² HDR, *Creating Effective Public-Private Partnerships for buildings and infrastructure in today's economic environment* (2005), 3.

³ Darrin Grimsey and Mervyn Lewis, *Public Private Partnerships, The worldwide revolution in infrastructure provision and project finance* (Northampton, MA: Edward Elgar, 2004), 87.

under PPPs and have been able to market their infrastructure development experience to win projects in the US. A second reason is that in France, the government is seen as a political and economic actor in its own right, with a clearly defined role as custodian of the broad public interest whereas the private sector is much more prevalent in the United States. This difference between the French and American economic, social and cultural environments makes the comparison all the more revealing in terms of establishing a favorable environment to the development of Public-Private Partnerships. Finally, the lesser dependency of American state and local governments on senior governments would seem to make them more dependent on private capital. The fact that Europe has yet made greater use of Public-Private Partnerships triggers an interesting question as to whether the United States is not likely to obtain even greater benefits from Partnerships than Europe has already.

If Public-Private Partnerships were a panacea to any government's funding needs, this paper would be of lesser interest and one would expect to see PPPs already widely used by every government and for the provision of all public services. This is not the case. As a result, it has to be true that PPPs are only warranted in countries that offer a particular environment and in sectors of the economy where the involvement of the private sector is both possible and beneficial. It will evidently be necessary to first examine the results of the concession model in France to determine whether the implementation of PPPs in the US would truly be beneficial to motorists. Moreover, the French concession model has widely been applied to existing toll roads. An analysis of the toll roads industry and the French context should help to determine whether the United States presents a favorable ground for the development and implementation of Public-Private Partnerships. It must be emphasized that because Public-Private Partnerships are contractual agreements, much will depend on the details of the agreement between the public and the private entity. This paper will attempt to examine the potential of the PPP model in the United States without pretending to apply

its conclusions to every Partnership agreement or to give specific recommendations for the implementation of any individual agreement.

This paper addresses the following question: can the United States learn from the French experience in infrastructure concessions and find a durable solution to its highway funding needs by using Public-Private Partnerships? Part I will describe the issue faced by both countries of financing an adequate highways network in the context of constrained government budgets. Part II explains the concept of Public-Private Partnerships and why they have reemerged as a potential solution, while Part III more specifically analyses the French concession model, the context of its emergence, in particular in the toll road industry, and its results. Part IV examines the potential of successfully exporting the concession model to the United States before Part V addresses the most common oppositions to Public-Private Partnerships. Finally, Part VI illuminates the way forward for US Partnerships in highway infrastructure and what remains to be done for the concept to be successfully implemented.

I. A COMMON ISSUE TO ADDRESS: FINANCING AN ADEQUATE HIGHWAYS NETWORK

A. THE NEED FOR AN EXTENSIVE AND RELIABLE ROAD INFRASTRUCTURE NETWORK

1. Quality transportation networks are necessary to economic growth

The most obvious reason why countries need an extensive and reliable road network is the link between transportation capacity and economic growth. According to a report by the Hudson Institute, in 2000 well over 12 billion tons of goods worth about \$10 trillion moved through the US freight system. The Federal Highway Administration estimates that by 2020, the volume of freight movement in the United States may double. Most of the expected increase can be traced to the growth in international trade. Trade between the US and Asia is projected to double over today's rates to more than 700 million tons of freight by 2020. Moreover, trade between the US and South

America will likely increase to 600 million tons of freight by 2020, up from less than 300 million tons in 1998. As the majority of freight travels by truck in the US, truck traffic is expected to double between 2002 and 2015 from 3.8 billion vehicle miles traveled to 7 billion vehicle miles traveled.⁴ If necessary improvements to the transportation network are not carried, there will be negative consequences for US economic growth.

The situation in France is a little less concerning as economic growth is slower than in the US. As illustrated in the table below, French economy grew 1.2% (GDP growth) in 2005 which is average among the Euro zone. The United States exhibits a higher growth rate of 3.5%.

Figure A1.1 Croissance du PIB des principaux pays de l'OCDE

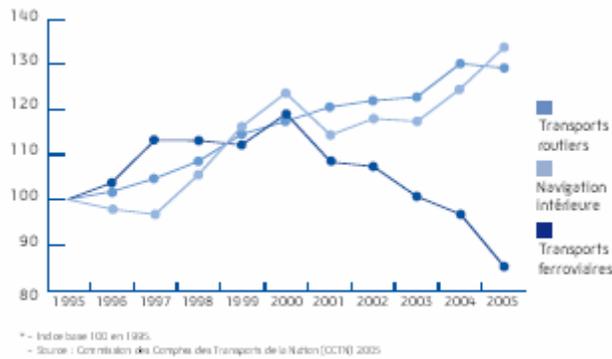
variations trimestrielles et annuelles, en %

	2003	2004	2005	T1	T2	T3	T4
Monde	3,5	4,6	4,3				
Etats-Unis	2,7	4,2	3,5	0,9	0,8	1,0	0,4
Japon	1,8	2,3	2,8	1,4	1,3	0,1	1,1
Royaume-Uni	2,5	3,1	1,8	0,2	0,5	0,4	0,6
Zone euro	0,8	1,8	1,4	0,4	0,4	0,7	0,3
Allemagne	-0,2	1,1	1,2	0,6	0,4	0,6	0,0
Espagne	2,9	3,1	3,4	0,8	0,8	0,9	0,9
France *	1,1	2,0	1,2	0,1	0,0	0,6	0,3
Italie	0,1	0,9	0,1	-0,4	0,6	0,3	0,0

Source : Insee, Eurostat, OCDE, juin 2006
 Etats-Unis, Japon, Royaume-Uni : comptes trimestriels nationaux (BEA, ONS, ESRI)

For the first time since 2001, the transportation of goods by trucks is decreasing in France after a relatively significant increase in 2004. The graph below illustrates the transport of goods in France by mode of transportation (roads, rivers and rail).

⁴ Matt Sundeen and James Reed, *Surface Transportation Funding, Options for States* (Washington, DC: National Conference of State Legislatures, 2006), 2.



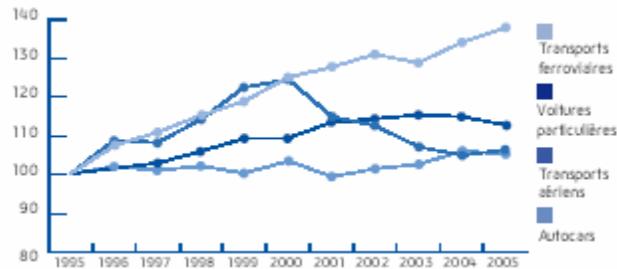
Source: ASFA, Rapport d'activités 2005

2. Congestion is extremely costly

Motorists want roads that are safe and need to be able to go to work without facing significant delays due to congestion. Travel growth has significantly intensified highway congestion. According to the Texas Transportation Institute, traffic congestion delayed travelers 0.7 billion hours in 1982, a number which was up to 3.7 billion hours in 2003. Twenty percent of travel occurred in extreme congestion conditions, and another 20% occurred in severe congestion conditions in 2003, up from 5% and 7% respectively in 1982. Congestion has acute economic effects. In 1982, delays wasted 0.4 billion gallons of fuel and cost \$12.5 billion while 2.3 billion gallons of fuel were wasted in 2003, costing Americans \$65 billion.⁵ Finally, there are social consequences that cannot be ignored. Families benefit when parents know that traffic will not prevent them from arriving home in time to see their daughters sing in the school choir. Pollution is reduced when cars and trucks can pass quickly through a stretch of highway and are not stuck in stop-and-go traffic. In sum, in addition to mere inconvenience, traffic congestion costs money, wastes time and fuel, and causes environmental damages.

⁵ Matt Sundeen and James Reed, *Surface Transportation Funding, Options for States* (Washington, DC: National Conference of State Legislatures, 2006), 4.

Even if roads remain French people preferred transportation mode with 88% of their trips in 2005, for the first time since 1974, road traffic decreased by 1.4% in 2005.⁶ The graph below describes passenger traffic by mode of transportation (rail, cars, air, bus):



Source: ASFA, Rapport d'activités 2005

In addition, the number of automobiles in circulation increased only by 0.9% while it increased by 1.3% in 2004 and at an average annual rate twice as high between 1994-2004 (+1.9%).⁷ For all of the above reasons, France suffers less acute congestion issues.

B. US HIGHWAYS CONDITIONS: A PRESSING NEED FOR SOLUTIONS?

1. *American roads' bottlenecks are increasing*

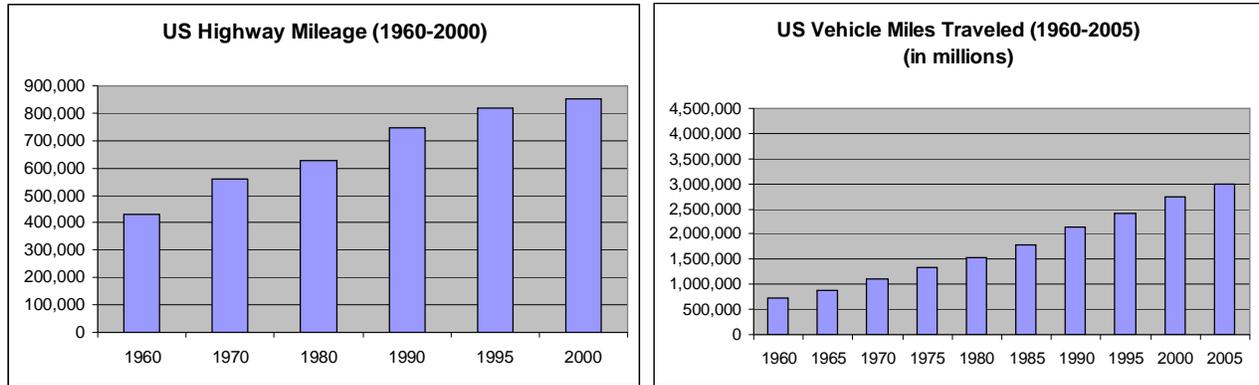
American economic growth has increased the use of roads. If roads are not used up to their maximum capacity level and a slack exists in the system, no burden would really exist on US highways and no pressing investments would be required. Greg Carey from Goldman Sachs summarizes the state of US roads as follows: "There has been a 4% increase in capacity while traffic miles driven increased by 74%. You have a tremendous backlog of efficiency. The last economic development tool most municipalities, cities, or states have is transportation."⁸ The

⁶ Direction Générale de la Mer et des Transports, *La situation des transports et de la mobilité au terme de l'année 2006* (Paris: DGMT, 2007), 6.

⁷ Ministère des Transports, de l'Équipement, du Tourisme et de la Mer, *Les comptes des transports en 2005*, Tome 1 (Paris: MTETM, 2006), 60.

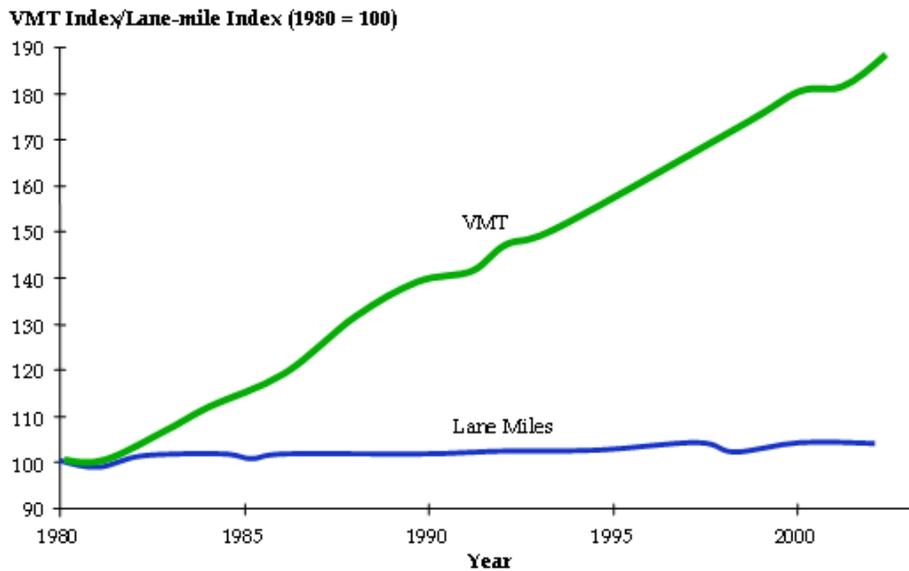
⁸ *Panel Discussion: US Toll Road Preview 2006* (New York: P3 Americas, 2006).

graphs below illustrate that American vehicle-miles traveled are fast increasing whereas US highway mileage has increased slowly since 1990.



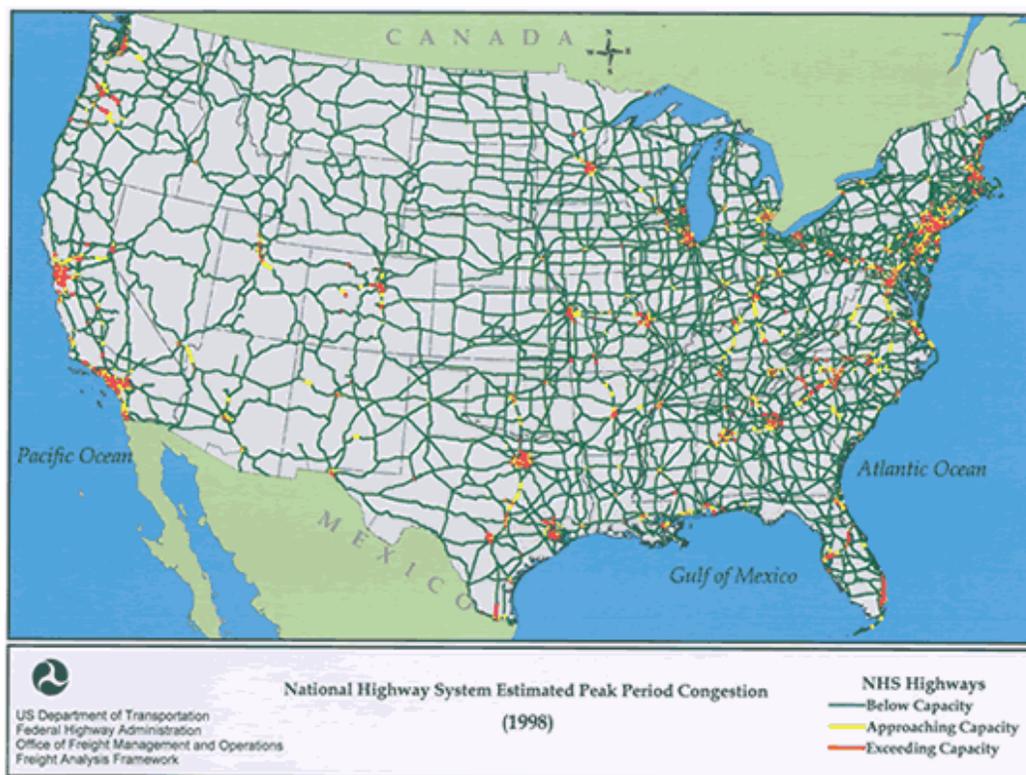
Source: U.S. Department of Transportation, Federal Highway Administration, Highway Statistics

As a result, the gap is closing between available highway mileage and miles traveled annually by Americans and roads are more and more heavily used relative to their capacity, with the slack of the 1960s quickly disappearing. This leads to a worrisome increasing ratio between miles traveled and lane miles as depicted below.



Source: FHWA

The map below shows congested US roadways in 1998. Congestion is calculated by comparing roadway capacity to average annual daily traffic (AADT) volumes as reported in the FHWA Highway Performance Monitoring System (HPMS). Highway segments shown in red are exceeding capacity, while highway segments in yellow are approaching capacity. Without major investments, the FHWA estimates that by 2020, 29% of urban national highways will be congested or exceed capacity for much of the day and 42% of US highways will be congested during peak periods. By comparison, only 10% of highways were congested in 1998. With the slack in capacity decreasing rapidly, it becomes urgent to address US highways funding issues.

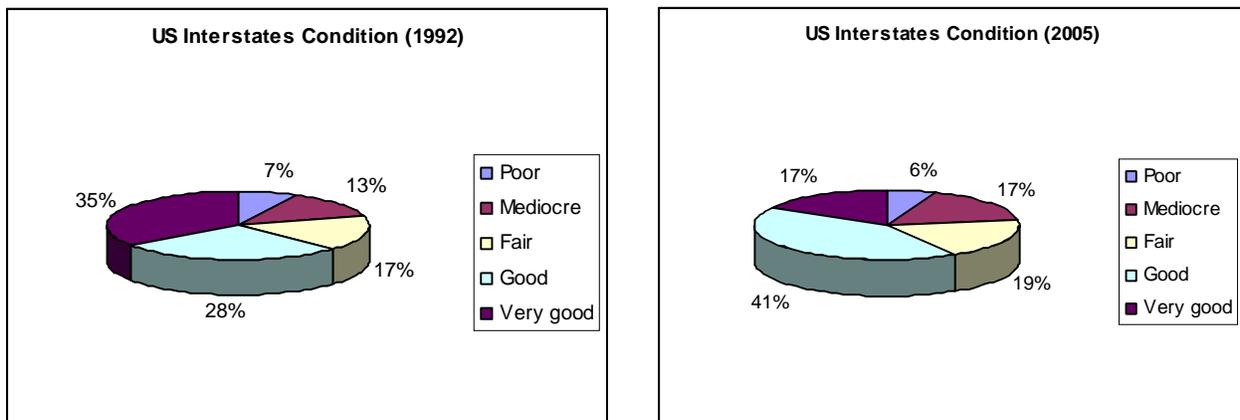


Source: Federal Highway Administration Freight Analysis Framework

2. American roads' quality is decreasing

In most countries, much of the transportation infrastructure is aging and in poor condition, which together with congestion raises the costs for road users. France however has been able to maintain a good highways network thanks to a significantly higher rate of improvement investments. Out of the 2 billion euros of investment undertaken by French highways companies in 2005, 0.72 billion were used to improve existing highways.⁹ According to the Association of French Highways Companies, this allows French highways' pavement to be redone entirely every ten years on average, which guarantees roads that are safe and in good condition. As such, the French model might be enlightening for the United States.

In the US, states have funded transportation projects as money becomes available which has delayed much needed maintenance and improvement works. Due to this pay-as-you-go system, US roads condition has decreased. In many states, legislatures cannot afford to solve transportation problems and existing infrastructure is becoming increasingly strained and deteriorated. The graphs below show the deteriorating condition of US interstates between 1992 and 2005:



Source: U.S. Department of Transportation, Federal Highway Administration, Highway Statistics

⁹ ASFA, *Rapport d'Activités 2005*, (accessed February 16, 2007); available from <http://www.autoroutes.fr/publications/institutionnelles.php?lng=1&idpublication=52>.

According to the US National Transportation Statistics 2005, approximately 23% of America's 912,000 miles of roads and highways are in poor or mediocre condition. Approximately 27% of the nearly 594,000 US bridges are structurally deficient or functionally obsolete.¹⁰ The poor condition of roads has significant economic costs. Outdated facilities can handle fewer vehicles and at slower speeds which increases congestion and impair economic growth as has already been explained. Quite evidently, roads in poor condition create security issues and cause damage to vehicles. According to TRIP, a nonprofit transportation research group, roadway conditions were a factor in 30% of fatal traffic crashes in 2003. It also estimates that driving on roads in need of repair costs motorists in the US \$54 billion per year in extra vehicle repairs and operation costs.

3. The changing political landscape and security needs

Following the events of September 11, 2001, the costs for securing national transportation systems have skyrocketed, both in Europe and the United States. In the US, the federal government has spent more than \$18 billion to upgrade aviation security and has shifted the responsibility of securing the nation's highways to states and local governments. A panel sponsored by the FHWA concluded in 2003 that of the 337 highway tunnels, many are located beneath water and have limited alternative routes. The panel determined that the loss of a critical bridge or tunnel could result in thousands of casualties, billions of dollars worth of direct reconstruction costs, and even greater socioeconomic costs.¹¹ Funding was and is still needed to increase the number of security personnel, make structures less vulnerable to damage, purchase and deploy technologies to monitor infrastructure, plan and facilitate emergency evacuation, and allow responders to move quickly to emergencies.

¹⁰ Matt Sundeen and James Reed, *Surface Transportation Funding, Options for States* (Washington, DC: National Conference of State Legislatures, 2006), 3.

¹¹ *Ibid.*, 5.

C. GROWING NEEDS IN THE CONTEXT OF CONSTRAINED GOVERNMENT BUDGETS

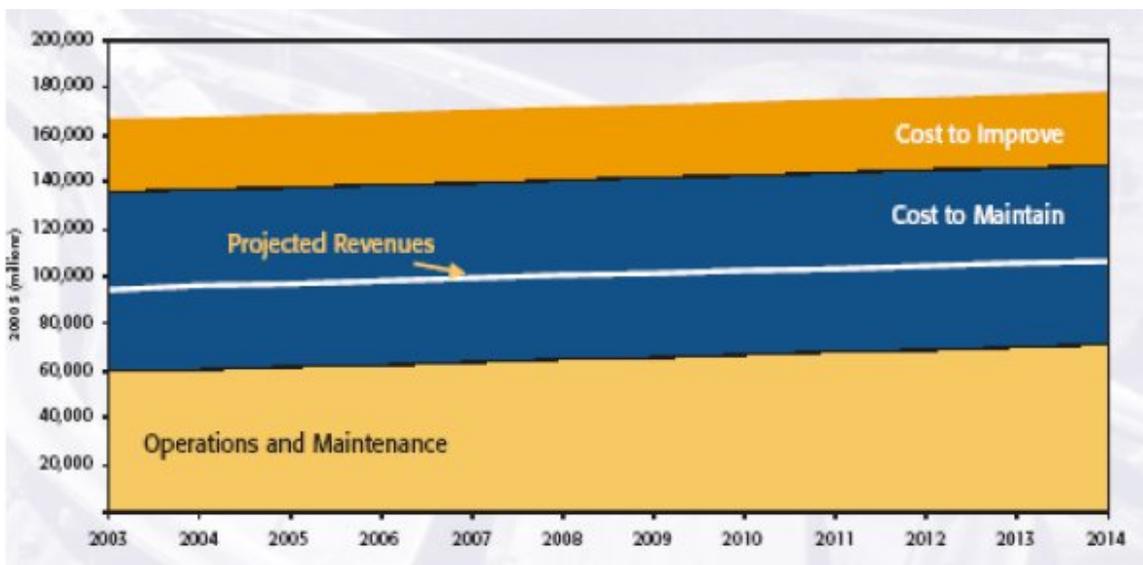
1. The inefficiencies of public financing

Before taking a measure of infrastructure funding gaps, it is important to underline that public funding has inherent limitations. In the United States, federal funding for highway projects occurs mostly through the federal aid highway program with the Highway Trust Fund. The federal fuel tax of 18.4 cents per gallon is the most significant source of the Fund. This fund was established under the Federal Highway Act of 1956, and subsequent reauthorizations established formulas for apportioning transportation funding to the states. In fact during the vote of each reauthorization bill, the main point of contention arises about the redistribution by the Federal government of funds collected by the states in the HTF. The states that have the largest populations and the most extensive transportation networks are referred to as donor states: they contribute the most to the Fund and receive less federal funding proportionally. On the contrary, so-called donee states are the less populated states with relatively underdeveloped transportation networks who receive much more federal funding than what they contribute to the HTF. The HTF is designed to finance road and bridge improvements on a pay-as-you-go basis. As such, its expenditures by law cannot exceed its income. Robert Poole, a member of Reason Foundation, conducted a study to look at which states win and lose from the federal program. He offers the following conclusion: “After adjusting what each state gets back to account for (1) higher costs for those projects done with federal funds, (2) state and federal overhead associated with the grants programs, and (3) the distortions in project selection introduced by ‘free federal money’, I concluded that over the years 1956-1994, only 18 states plus the District of Columbia were actually net gainers. All the others got back less, in real terms, than they paid in and arguably would have been better off if they’d never

sent the money to Washington in the first place.”¹² In the same article, Poole continues by arguing that public money leads to waste, reinforcing the need for the involvement of the private sector. He argues that “investment decisions are skewed by the availability of federal money that locally elected representatives don’t have to raise.”¹³

2. *A measure of growing funding gaps in infrastructure*

The US Federal Highway Administration (FHWA) explains that real highway revenues are declining relative to the growth in vehicle miles of travel (VMT). Both highway condition and performance are directly related to VMT. If past trends in revenues per VMT continue, state and local governments will fall further behind in highway conditions and performance.¹⁴ The figure below compares projected highway revenue with investment requirements in the US.



Source: FHWA Manual

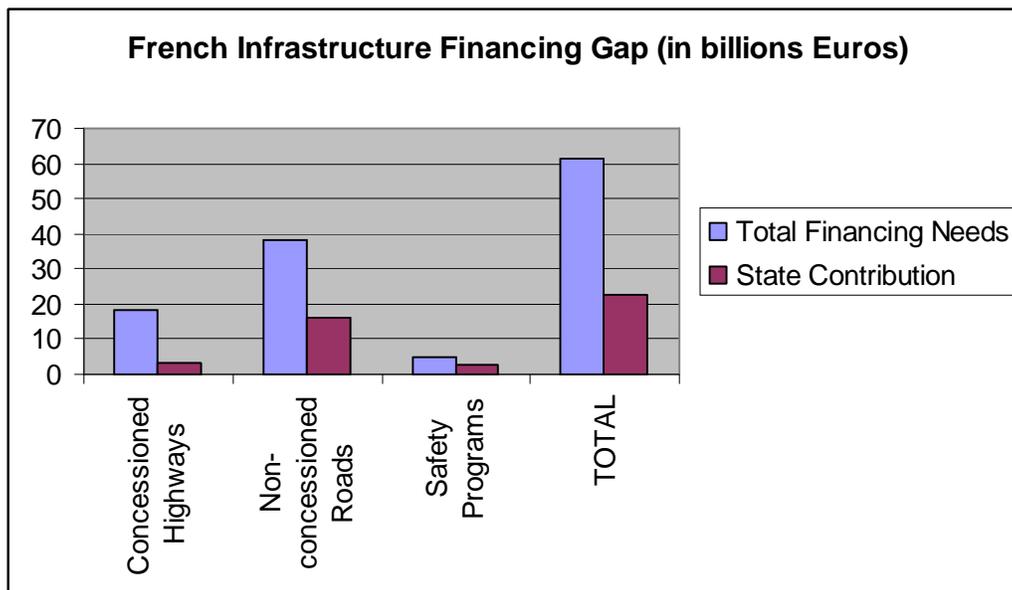
¹² Robert Poole, “Are You Ready for Devolution?,” *Public Works Financing*, March 2006.

¹³ Ibid.

¹⁴ FHWA, *Manual for using Public-Private Partnerships on Highway Projects*, (accessed February 14, 2006); available from <http://www.fhwa.dot.gov/ppp/resources.htm>.

Other estimates of the US infrastructure funding gap can be found in a report from the National Chamber Foundation of the US Chamber of Commerce in 2005. It estimated that it would cost \$222 billion in 2005 from all levels of government to improve (\$125 billion in capital investment) and maintain (\$97 billion in operations and maintenance) US pavements, bridges and roads, and \$295 billion per year by 2015. According to the report, revenues from all sources were estimated to be \$180 billion, \$42 billion short of the amount needed to maintain the national transportation network and \$91 billion short of the amount needed for improvements. The report finally estimated that the cumulative deficit in the amount of money needed to improve the transportation system would exceed \$1 trillion by 2015.¹⁵

In a 2003 information report,¹⁶ the French Senate reports that the total estimated cost of constructing and maintaining French roads network between 2003 and 2020 is over 60 billion euros. The French government would contribute at a level of 22.5 billion euros for a funding gap of 37.5 billion. The findings of the Senate mission are summarized in the graph below.



¹⁵ Matt Sundeen and James Reed, *Surface Transportation Funding, Options for States* (Washington, DC: National Conference of State Legislatures, 2006), 7.

¹⁶ Commission des finances, du contrôle budgétaire et des comptes économiques de la nation, *Jacques Oudin: Rapport d'information #303, Financement des infrastructures de transport à l'horizon 2020*, May 21, 2003, 37.

France's budget deficit has to stay under three percent of its gross domestic product to conform to European regulations. Indeed, the Growth and Stability Pact was enacted in 1997 and established fiscal standards and budgetary discipline for all nations adopting the euro. "One of the most important stipulations of the Pact is that annual budget deficits among member governments should not exceed 3% of GDP. This has put enormous pressure on Euro Zone governments to seek alternatives to debt financing for large capital intensive infrastructure projects, and many have turned to PPPs."¹⁷ In 2004, French budget deficit reached 3.6% of GDP and France faced many warnings from the European Commission. This paper will assume that budget deficits are undesirable and it suffices to cite the two main arguments that can be found against running excessive budget deficits in the economic literature. The first is that by running large budget deficits, the government is limiting its flexibility to respond to future crisis. The second argument is that large budget deficits undermine the economy by squeezing out private investment.

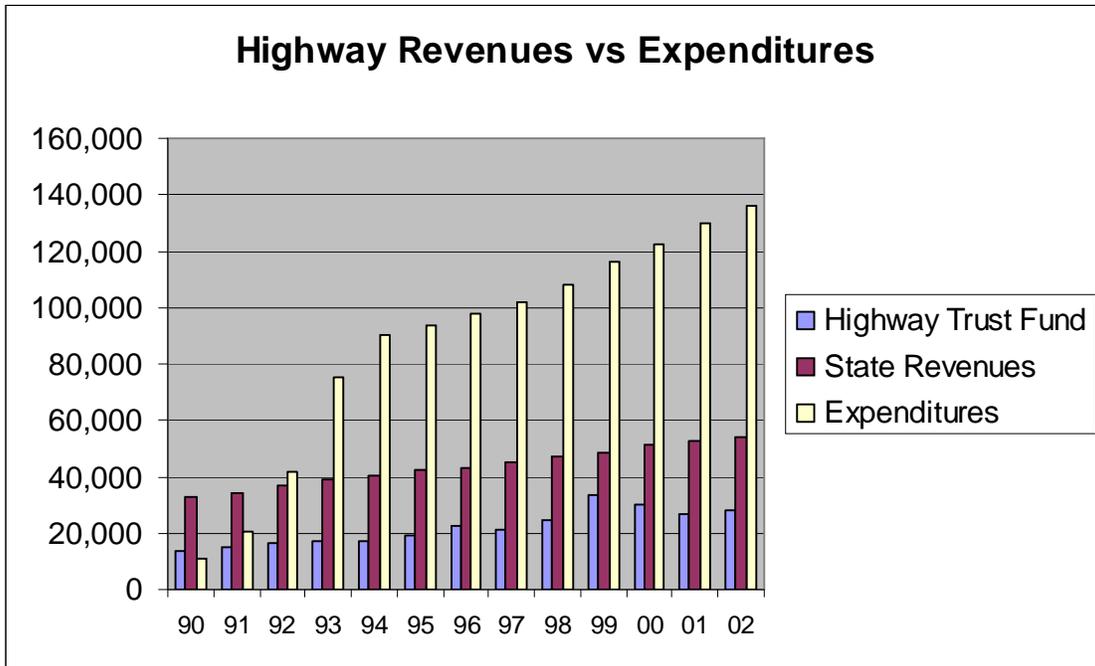
3. Transportation revenues have not kept pace with expenditures

- US reliance on a declining gas tax

As explained above, US federal funding for transportation projects occurs mostly through the Highway Trust Fund. Since 1956, \$596 billion has been disbursed from the Fund for road and bridge projects nationwide.¹⁸ The graph below shows that since 1993, federal and state transportation revenues are inferior to the growing government expenditures for transportation.

¹⁷ Benjamin Perez and James March, "Public-Private Partnerships and the Development of Transport Infrastructure: Trends on both sides of the Atlantic," Institute of Public Economics at the University of Alberta, August 2, 2006, 6.

¹⁸ TRIP, *Key facts about America's road and bridge conditions and federal funding* (March 2006).



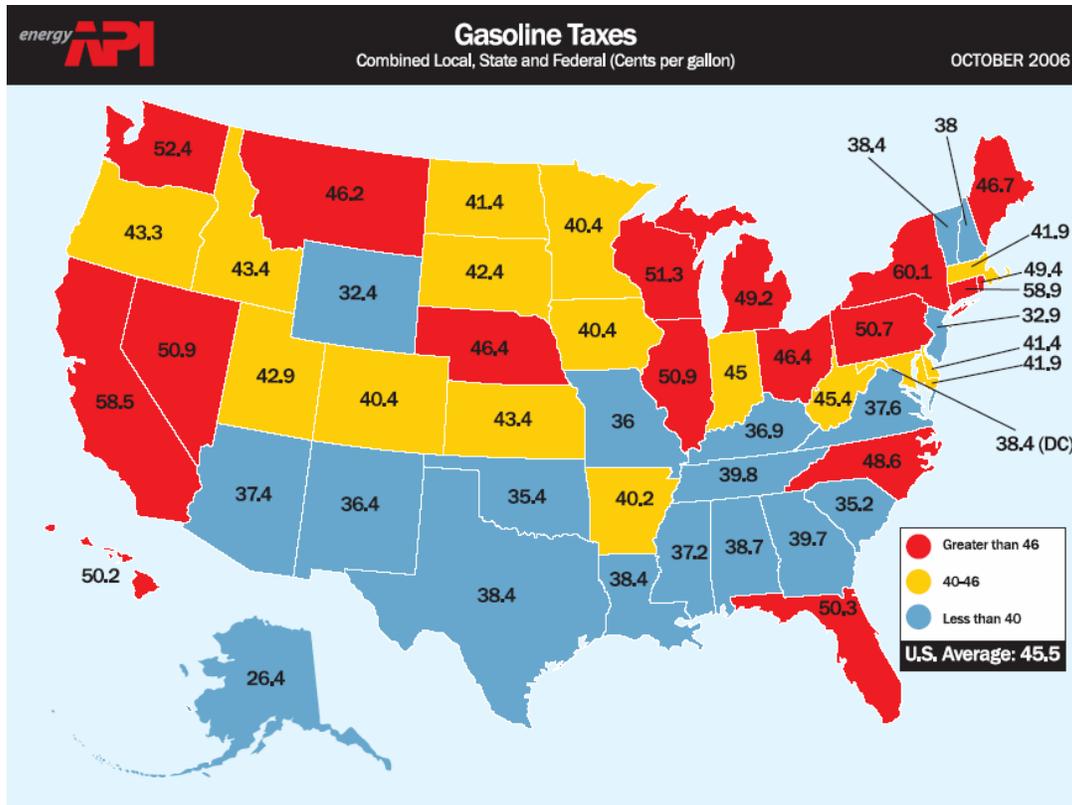
Source: U.S. Department of Transportation, Bureau of Transportation Statistics

At the state level, the main source of transportation revenues is the state motor vehicle fuel tax. The first US state tax on fuel was introduced in February 1919 in Oregon at 1 cent per gallon. In the following decade, all of the US states introduced a gasoline tax and by 1939, an average tax of 3.8 cents per gallon of fuel was levied by the individual states. The table below summarizes state motor vehicle fuel tax rates by US regions as of today.

GASOLINE MOTOR FUEL TAXES (cents per gallon)				
Region	State Excise	Other State	Total State	Total State and Federal
New England	22.6	5.0	27.6	46.0
Mid Atlantic	12.4	17.3	29.7	48.1
South Atlantic	13.1	13.2	26.3	44.7
Northeast	14.1	13.6	27.7	46.1
Midwest	21.1	5.1	26.2	44.6
South	19.3	0.7	20.0	38.4
Mountain	22.8	0.2	23.0	41.4
West	20.2	15.3	35.5	53.9
US	18.2	9.15	27.4	45.8

Source: Energy API

State motor fuel taxes differ among US states and must be added to the 18.4 cents per gallon federal fuel tax. The total fuel tax for each US state is shown on the map below.



Source: Energy API

From 1998 to 2004, the state fuel tax was the main source of highway funding for 25 states. Since 1997 however, only 14 US states have raised the excise tax on motor vehicle fuel and the increase averaged only 4 cents per gallon.¹⁹ Federal money, primarily from the HTF, was the primary source of highway funding in 17 states. Other states rely on motor vehicle and motor carrier taxes, or bond revenue proceeds.

¹⁹ Matt Sundeen and James Reed, *Surface Transportation Funding, Options for States* (Washington, DC: National Conference of State Legislatures, 2006), 21.

Finally, US local governments are becoming increasingly involved in the financing of transportation projects. Local governments receive some funds from the state for surface transportation but they mostly finance their transportation needs through various taxes and user fees. Financing sources include motor-fuel taxes, toll revenues, vehicle license and registration taxes, parking fees, street utility fees and property taxes. Some states also allow local sales taxes to be used for transportation projects. If the participation of local governments may involve greater cost sharing on projects desired by the local community, it also requires that the state authorizes funding options. Moreover, as taxes are the most commonly used financing mechanism by local governments, a vote of affected citizens is generally required to proceed, which can cause significant political hurdles.

- France's constrained general budget

French highways funding mechanisms differ from American mechanisms in two fundamental ways: the European Commission strongly encourages user-fees for the financing of infrastructure and no taxes are exclusively dedicated to the construction and maintenance of roads. The recent trend of decentralization in Europe has led to a significant change in the repartition of responsibilities between central and local governments including financial transfers to local communities, as well as a search for new financing solutions at the local level. The majority of local roads in France are financed at least partly by the public authorities in charge that use their general budget, affected to them by the national government. While France has no dedicated taxes to the funding of its road infrastructure, the gas tax that contributes to the national budget is an important source of fiscal revenues. As a result, both the US and the French budgets have been strained mainly because revenues from this tax have not kept pace with infrastructure needs. The French gas tax does not feed a highway trust fund like it is the case in the US but rather becomes

part of the national general budget with the French government free to redistribute the total funds as it sees fit.²⁰ Fiscal revenues to transportation authorities in 2005 are coming at 70% from the tax intérieure sur les produits pétroliers (TIPP), the French gas tax. As such, the TIPP contributes 25 billion euros to the national budget for a total of 31 billion of fiscal revenues from transportation.²¹ The rest comes mainly from motor vehicles taxes. In France, gas is also taxed by a Value Added Tax (VAT) that exists in most European countries. The TIPP is based on fuel quantity consumed and is independent of gas prices while the VAT is proportional to gas prices. As such, revenues from the TIPP have not increased with gas prices and have remained constant over the years despite inflation in gas prices.²² In 2005, revenues from the TIPP have decreased by 2.2% compared to 2004 which can be explained by a decrease in gas consumption thanks to the use of more fuel-efficient vehicles.²³ The change toward fuel-efficient cars has been ongoing in Europe, with diesel-fuel engines representing an increasing share of the vehicles sold.

D. THE MULTIPLE AND COMPLEX ORIGINS OF TRANSPORTATION BUDGETS DEFICITS

1. *Inflation and the declining real value of gas taxes*

Both at the federal and the state level, US gas taxes are the most significant source of financing rendering their erosion particularly problematic. Fuel taxes have not kept pace with inflation thus declining in real value. The federal excise tax, currently at 18.4 cents per gallon, has not changed since 1993. According to the American Association of State Highway and Transportation Officials (AASHTO), from 1996 to 2008, the federal gas tax will decline 26% in purchasing power terms and will have a real value of only 13.5 cents per gallon. The association

²⁰ Direction des Routes, Mission Economie et Affaires Européennes, *L'organisation des administrations routières et le financement des routes en Europe* (Paris: DR, 2004), 29.

²¹ Ministère des Transports, de l'Équipement, du Tourisme et de la Mer, *Les comptes des transports en 2005*, Tome 1 (Paris: MTETM, 2006), 104.

²² *Ibid.*, 104.

²³ *Ibid.*, 104.

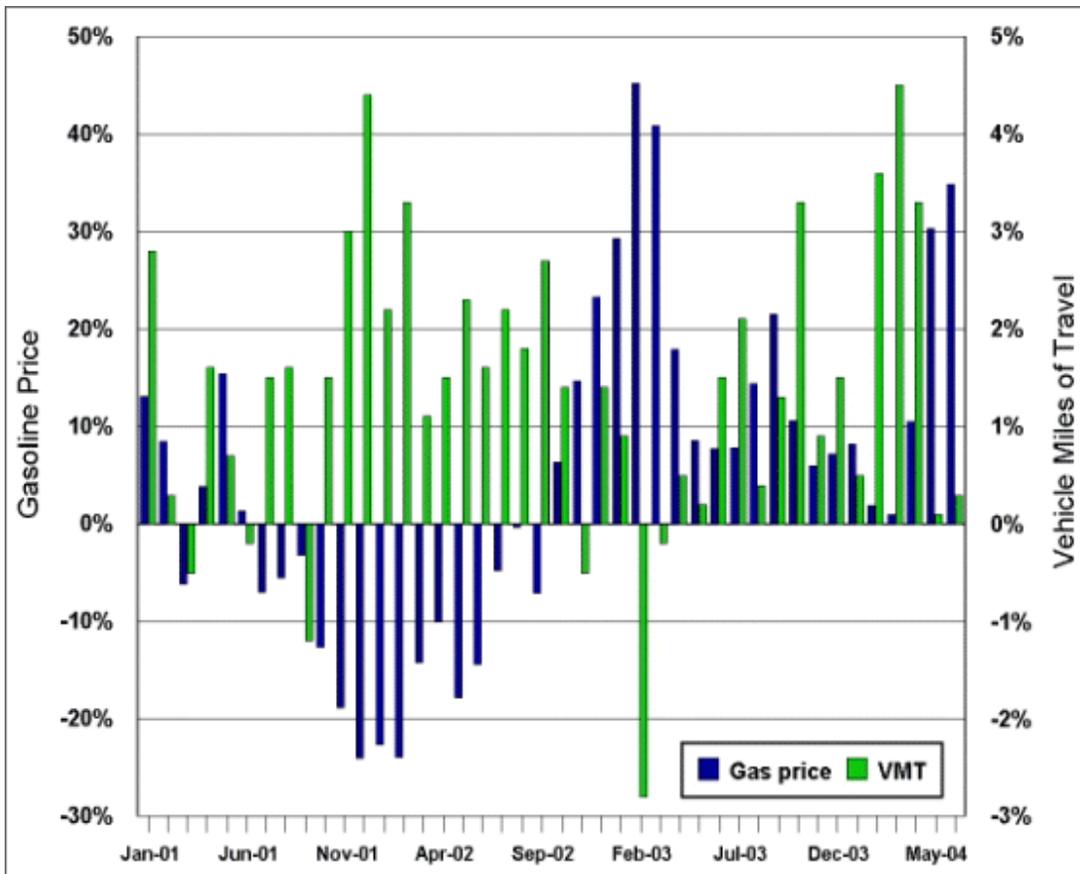
estimates that this will cancel out a projected 9% growth in gas tax revenue due to travel increase. Worse yet, a study published by the US Chamber of Commerce Foundation in 2005 predicts that without further action, the Highway Trust Fund will become bankrupt by 2010 and will run a \$41.7 billion deficit by 2015.²⁴

2. *The effects of high gas prices*

With the cost of gasoline high, fuel tax increases are even less politically popular. It probably goes without saying that politics are a factor in states' ability to raise taxes. Lawmakers may be unwilling to support funding mechanisms that could be unpopular with constituents or that are perceived to benefit only certain parts of the state. As a result, it has been extremely difficult for lawmakers to gather the political support necessary to raise gas taxes sufficiently to cover inflation. With the soar in gas prices in late 2005, the support for gas taxes has continued to erode.

Moreover, one could reasonably hypothesize that high gas prices might lead to a decrease in vehicles use and a further drop in gas tax revenues. This would nonetheless also decrease road usage and as such minimize road maintenance and improvement needs. While a decline in gas prices is clearly associated with an increase in vehicle miles traveled, it has not been the case that Americans always reduce their travels when gas prices increase. This might be because, to a certain extent, travel demand is inelastic in the context of work travels or where public transportation is not available. In a 2004 study, the FHWA examined the percentage change in vehicle miles traveled relative to a percentage change in gas prices as can be observed in the graph below.

²⁴ Matt Sundeen and James Reed, *Surface Transportation Funding, Options for States* (Washington, DC: National Conference of State Legislatures, 2006), 19.

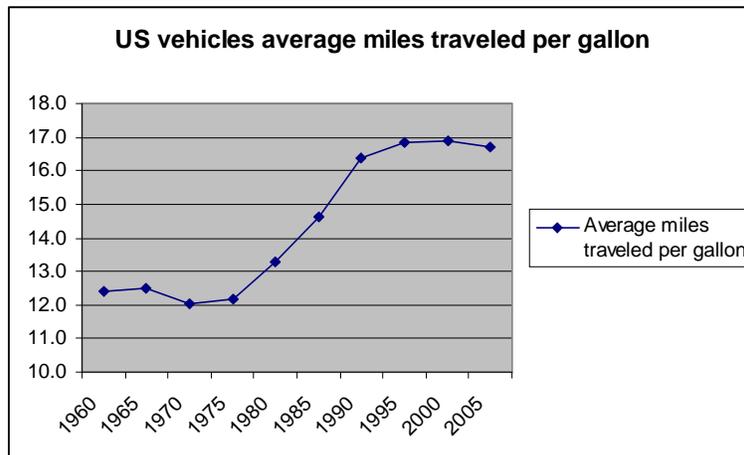


Source: FHWA

In sum, high gas prices are unlikely to reduce road usage and improvement needs and will be an additional constraint on US highways funding because they render tax increases difficult.

3. *The consequences of changing consumers' preferences*

Finally, consumer preferences are changing even in the United States where hybrid cars and alternative fuels are becoming increasingly popular. Over time, American vehicles have become more fuel-efficient as shown below.



Source: U.S. Department of Transportation, Federal Highway Administration, Highway Statistics

Although hybrid and alternative fuel vehicles are more fuel-efficient and have therefore many desirable characteristics in terms of reduced emissions and reduced fuel expenses, they could affect the amount of transportation revenue available to US states from the gas tax. According to hybridcars.com, US hybrid sales have generally doubled every year since 2000, with more than 205,000 vehicles sold in 2005. With new car sales for 2005 topping 17 million vehicles, hybrids account only for about 1% of all US car sales. If gas prices remain high however, ABI research predicts that sales of hybrid vehicles will account for 5 to 6% of all cars sold in the US by 2010.

In addition, not only do higher miles per gallon cars mean less gas tax revenues, but higher fuel-efficient cars also mean more driving with an increased impact on US roads. Indeed, the University of California Energy Institute has shown that “improving energy efficiency releases an economic reaction that partially offsets the original energy saving. As the energy efficiency of some process improves, the process becomes cheaper, thereby providing an incentive to increase its use. This ‘rebound effect’ implies that when vehicles are made more fuel-efficient, it costs less to drive a mile, so VMT increases.”²⁵

²⁵ Kenneth Small and Kurt Van Dender, “The effect of improved fuel economy on vehicle miles traveled: estimating the rebound effect using US State data, 1966-2002,” Energy Institute at the University of California, September 2005.

II. PUBLIC-PRIVATE PARTNERSHIPS: A NEW POTENTIAL SOLUTION TO US HIGHWAYS FUNDING NEEDS?

Even though recent landmark transactions could lead to think that PPPs are a new financing tool, Partnerships are not new. As discussed in the introduction, it is possible to trace the origin of Public-Private Partnerships in England back in the 13th century. Partnerships exist in different forms, with the concession model being the most prevalent in France. The rebirth of PPPs in recent decades has been due to an array of changing circumstances that will be examined in more detail. Finally, traditional alternatives to PPPs are stretched and Partnerships could become prevalent to address financing gaps in infrastructure.

A. WHAT EXACTLY ARE PUBLIC-PRIVATE PARTNERSHIPS?

1. Public-Private Partnerships are a process

According to the Federal Highway Administration, “Public-Private Partnerships refer to contractual agreements formed between a public agency and private sector entity that allow for greater private sector participation in the delivery of transportation projects.”²⁶ In the United States, the public partner is typically a state department of transportation, a local county or municipal public works department, or a local toll road, bridge or transit authority that is the owner and operator of highway facilities. As for the private sector, PPPs participants have been businesses providing services to public agencies for a fee, such as engineering and construction companies or specialized financial and legal advisors. In other parts of the world where Public-Private Partnerships are more commonly used, private entities assume full ownership-like responsibilities and “road owning” business entities are emerging. This is the case in Australia for example where Macquarie Bank is extremely aggressive in the business of developing long-term operating and

²⁶ FHWA, *Public-Private Partnerships* (accessed January 20, 2007); available from <http://www.fhwa.dot.gov/ppp/defined.htm>.

maintaining responsibility for infrastructure assets as an attractive opportunity for equity investment.

The semantic is confusingly diverse when one refers to Public-Private Partnerships. Regardless of the term used, Peter Samuel explains that all the terms describe a process that involves:

- A state-controlled process of selecting a preferred investor group and negotiating a contract for that group's right to take over an asset for a specified time under specific conditions;
- Legal title to ownership of the facility remaining with the State;
- The investor's right to the tolls in return for the obligation to maintain and operate the facility so long as they fulfill the contract conditions;
- Monitoring fulfillment of the contract's terms;
- A process for arbitrating disputes over the contract; and
- Provisions under which the facility reverts to the State at the end of the contract term or earlier if the private partner defaults on the contract.²⁷

2. Public-Private Partnerships compared to traditional procurement methods

Traditionally, private sector participation in infrastructure procurement has been limited to separate planning, design or construction contracts on a fee for service basis. Under a PPP, the private sector has an extended role in return for assuming more risks. Similar to project finance structures, project risks are allocated to the party that is best equipped to manage them. While the public sector usually retains ownership of the facility, the private party will bear additional risks and/or be given additional decision rights in the completion of the project. The United States

²⁷ Peter Samuel, *Should States sell their toll roads?* (Los Angeles, CA: Reason Foundation, 2005), 3.

Department of Transportation underlines the variety of PPPs: “the term Public-Private Partnership defines an expansive set of relationships from relatively simple contracts, such as contracts where the private sector assumes the risks of delays in schedule through financial incentives and penalties. On the other end of the spectrum, it includes very complicated and technical development projects, where the private sector builds, owns, and operates a transportation facility.”²⁸ In general Partnerships are intended to provide greater flexibility to achieve the project’s objectives by altering traditional public and private sector roles and taking better advantage of the skills and resources that the private sector can provide. No matter what the involvement of the private sector, the government will continue to play a role in granting permits, ensuring safety, or exercising its power of eminent domain to obtain land for rights-of-way.

B. THE REBIRTH OF PUBLIC-PRIVATE PARTNERSHIPS IN RECENT DECADES

The rebirth of PPPs in recent decades can be traced back to a number of changing circumstances in the provision of public services and the market for infrastructure finance in both countries. Except for the concept of user-pay which is more widely accepted in France, the change in circumstances is even more pronounced in the United States, which makes the US a potentially well-adapted ground to the development of Public-Private Partnerships.

1. Changing attitudes to public services delivery

There has been a marketization of the public sector in the sense that public sector activities have been downsized and can now be managed by the private sector. Darrin Grimsey argues that “PPP’s can be seen as one component of a rearrangement of the public sector with a management culture that focuses on the centrality of the citizen or customer, accountability for results,

²⁸ US Department of Transportation, *Report to Congress on Public-Private Partnerships*, December 2004, 10.

investigation of a wide variety of alternative service delivery mechanisms, and competition between public and private bodies for contracts to deliver services consistent with cost recovery and value for money.”²⁹ In sum, the government is not the direct provider of services anymore but rather the enabler, coordinating and regulating the provision of public services by the private sector. This change of attitude toward public services delivery is also present in Europe. In a green paper on Public-Private Partnerships, the European Commission explains:

Various factors explain the increased recourse to PPPs. In view of budget constraints confronting Member States, it meets a need for private funding for the public sector. Another explanation is the desire to benefit more in public life from the know-how and working methods of the private sector. The development of the PPP is also part of the more general change in the role of the State in the economy, moving from a role of direct operator to one of organizer, regulator and controller.³⁰

2. The commercialization of public services

A second factor contributing to the rebirth of Public-Private Partnerships is the recent commercialization of public services. When procuring highway projects, governments have two options for underwriting capital expenditures: they either use tax revenues or user fees. The tax-based approach has traditionally been favored in the United States, but this has recently started to change and toll roads are becoming more widely accepted. As a result, users and not taxpayers are now paying for infrastructure projects in the form of the tolls they pay when they use the infrastructure. Southern European nations such as France, Italy, Portugal and Spain have traditionally favored the use of tolls to finance their infrastructure needs. In France, the concept of user-pay is widely accepted and the majority of highways are toll roads. “France boasts one of the world’s most extensive and modern motorway networks, with a total road length of nearly 9,300 km

²⁹ Darrin Grimsey and Mervyn Lewis, *Public Private Partnerships, The worldwide revolution in infrastructure provision and project finance* (Northampton, MA: Edward Elgar, 2004), 52.

³⁰ Commission of the European Communities, *Green Paper on Public-Private Partnerships and Community Law on Public Contracts and Concessions* (Brussels: European Commission, May 2004), 3.

of which 7,000 km are under concession control. As of 1999, France counted 8,319 interurban highways, of which 7,048 were toll roads.”³¹

3. The significant growth of the project financing model

Another factor in the rebirth of Public-Private Partnerships is the significant growth of the project financing model. The reason why the rebirth of PPPs is linked to the development of project finance is because the structure of a Partnership is identical to a typical project financing. The goal of a project finance structure is to allocate the risks of the project to the party best able to mitigate it. Likewise, a PPP brings together a number of parties for an infrastructure investment, typically in the form of a special purpose vehicle (SPV) which is also the basis of every project financing. A special purpose vehicle is a separate legal entity established to undertake the activity described in a contract between the SPV and its client, or the public procurer in the case of a PPP. Financiers can turn only to the SPV for the repayment of their funds. The execution of the activity requires the involvement of a number of parties with whom the SPV enters into subcontracts. As such, the risks are spread among the different parties and the guarantee of a better execution increases. Traditionally, the contractors and service providers sponsor the SPV and take equity stakes in it as a sign of their commitment to the project. In recent years, based on the Australian model, a new financier-led approach has developed. Specialized investment banks have taken a very active role in managing the SPV, taking 100% of the equity and underwriting capital market issues and all other elements of the contract.³² Seemingly overnight, large amounts of money are being pooled into a variety of funds to solely invest in infrastructure.

³¹ Jean-Yves Perrot and Gautier Chatelus, eds., *Financing of major infrastructure and public service projects, Lessons from French experience throughout the world* (Paris: Presses Ponts et Chaussées, 2000), 145.

³² Darrin Grimsey and Mervyn Lewis, *Public Private Partnerships, The worldwide revolution in infrastructure provision and project finance* (Northampton, MA: Edward Elgar, 2004), 110.

C. THE TRADITIONAL ALTERNATIVES TO PUBLIC-PRIVATE PARTNERSHIPS ARE LIMITED

Not only have Public-Private Partnerships become increasingly used in recent decades, but the traditional alternatives to this type of financing are inherently limited. An examination of traditional alternatives and their limits leads to think that PPPs will become even more prevalent in the near future.

1. The political hurdles of tax financing

As mentioned earlier, the United States government has traditionally relied on tax revenues for the provision of infrastructure. Tax revenues offer limited prospect for the closing of the infrastructure funding gap as it is politically extremely difficult to impose tax increases. Moreover, there are arguments against raising the gas tax, even if it would be possible to do so. In an article entitled “Why Bush is right to resist raising the gas tax”, Ted Balaker argues that the fact that drivers pay for roads when they are at the gas station, not when they are actually using them, results in increasing traffic congestion. In a toll-based system, motorists instead would pay for roads only when they actually use them and would think more carefully before piling on the road at rush hour.

Besides the immediate burden that it puts on taxpayers, taxes are the most inflexible way of financing infrastructure projects and can limit the future capacity of the government to finance more projects. Moreover, taxes eliminate the use of leverage through which certain projects are made more efficient even though borrowing has disadvantages of its own.

2. The risks and disadvantages of public borrowing

Another traditional alternative to Public-Private Partnerships, bond financing, also presents inherent limits. The benefit of borrowing money is that the government can accelerate project completion since it does not have to wait to have the funds necessary for the completion of the

project. A general opposition to debt financing is that it creates a drag on future generations. Decades after the construction of a project, taxpayers will still be paying without receiving any new infrastructure. Borrowing does have implications long into the future. The funding received from a bond issue has to be repaid with interest which can potentially take funding away from other vital projects in the future. At first sight, a PPP and a bond issuance would yield the same upfront proceeds with the bonds being repaid thanks to toll revenues over time and the PPP proceeds coming from all expected future toll revenues. However PPPs eliminate the principal repayment that has to be made when the bonds mature which is an advantage of Partnerships over bonds.

Moreover, bond financing ties government's hands and state policy should ensure that adequate revenue is generated not only to pay for maintenance and operation but also for debt repayment. When accounting for debt repayment costs, every dollar spent on a given project would actually cost more than a dollar. As such, taxpayers will receive less than the taxes they contributed.

Finally, the municipal bonds market has inherent limitations. Bonds issued by state and local governments to finance transportation projects are known as municipal or public bonds. In the US, interest income from those bonds is exempt from federal income taxes and often from taxation by state and local governments. If the tax-exemption makes them attractive to investors, other characteristics of municipal bonds make them less attractive than Public-Private Partnerships. Mark Florian, Managing Director at Goldman Sachs, explains that "the tax-exempt market, where infrastructure assets are traditionally financed, imposes strict limitations on the amount of leverage that can be layered onto each asset as well as restrictive coverage requirements and additional bonds tests."³³ In a presentation to Texas Transportation Forum, Gregory Carey from Goldman Sachs

³³ Congress, House, Committee on Transportation and Infrastructure, Subcommittee on Highways, Transit and Pipelines, *Mark Florian: Testimony before the Subcommittee on Highways, Transit and Pipelines*, 109th Cong., 2nd sess., May 24, 2006.

explained that municipalities typically do not predefine multiple future toll increases and have minimal incentive to publish aggressive projections. “Municipal markets are cautious of future political risk, necessitating conservative revenue projections and debt service coverage. Moreover, tax-exempt arbitrage rules prevent borrowing unless proceeds can be spent within a set period of time.”³⁴ Unlike municipal entities that borrow to meet a set capital need, private concessionaires strive to maximize equity return which will increase the amount of financing a PPP can provide compared to a bond issue. Indiana Governor Mitchell summarizes the limits of traditional funding mechanisms for the recently leased Indiana Toll Road: “To bring in \$3.8 billion through higher fuel taxes, Indiana would have had to more than double its existing gas tax. If we had attempted to close the gap through additional bonding, we would only have been able to borrow about one third of this figure before colliding with marketplace limits.”³⁵

III. THE FRENCH CONCESSION MODEL: AN EXAMPLE OF A SUCCESSFUL PUBLIC-PRIVATE PARTNERSHIP?

The French preferred way of providing for transportation infrastructure needs is through the concession of highways to private highway operators. The concession model is a form of Public-Private Partnership and it is important to review the context in which it emerged in France so as to examine the possibilities that might exist in the US context. It will then be necessary to consider the reasons why the concession model has predominantly been used for existing toll roads before examining the model’s results in the provision of road infrastructure.

³⁴ Gregory Carey, *Current opportunities in the US PPP marketplace*, Presentation to Texas Transportation Forum, June 9, 2006.

³⁵ Associated Press, “Chicago lease deal draws criticism at House hearing,” *Chicago Business*, May 24, 2006.

A. WAS THE FRENCH CONTEXT PARTICULARLY FAVORABLE TO THE EMERGENCE OF THE CONCESSION MODEL?

1. *The concession model is a form of Public-Private Partnership*

Born in Europe, the concession model is widely used in France. In this model, private investors use a combination of their own debt and equity to finance the construction or operation of a transportation project. They use the toll income generated by the project for a specified concession period to repay the underlying debt, recuperate their equity, and earn a profit. From a legal point of view, David Seader explains that the government grants to a private firm the exclusive rights to operate, maintain and manage the entire system for an extended period of time. As a result, the basic system is still owned by the public, while the private concessionaire owns all improvements and extensions.³⁶ For the rights to operate the system, the private firm typically pays an initial and/or annual concession fee to the government. The definition of a concession offered by the French Ministry of Public Works perfectly fits the definition of a Public-Private Partnership as a process. “The concession is a process which allows associating a private partner, due to its particular competence and financing power, in the provision of a public service or in the construction and operation of public infrastructure projects over a long time period.”³⁷

2. *Public domain and strong resistance to private sector involvement*

In France, the private sector’s role in the transportation sector is limited by the prevalent notion of public domain. This concept diminishes the potential for private sector involvement in the provision of public services and in the broader economy. As opposed to the Anglo-Saxon model which downplays the public domain angle and where the project’s facilities remain subjected to a

³⁶ David Seader, “The United States’ Experience with Outsourcing, Privatization and Public-Private Partnerships,” National Council for Public-Private Partnerships, 7.

³⁷ Jean-Yves Perrot and Gautier Chatelus, eds., *Financing of major infrastructure and public service projects, Lessons from French experience throughout the world* (Paris: Presses Ponts et Chaussées, 2000), 44.

private law regime, the French system for handling infrastructure concessions incorporates a strong notion of public domain. As such, the project's facilities remain tied to the public domain and are generally subject to heavy constraints, restricting the private partner's management leeway. The French Ministry of Public Works explains how French law has to be accommodated to the prevalence of public domain:

When confronted with a complex situation involving project property rights, French law offers a panoply of tools for reaching a fair solution. A line is drawn between those facilities required to be handed over free of charge to the public entity upon contract expiration and recovery equipment, which only gets handed over should the public entity elect to exercise the option. The former belongs to the public domain whereas recovery equipment remains, up until contract termination, the concessionaire's property.³⁸

3. PPPs in the French centralized system of government

The implementation of PPPs is typically easier in a local context because each Partnership should be established on a case-by-case basis. Indeed the French Ministry of Public Works concurs that "from the public perspective, the most appropriate entity to assume the role of concession-granting authority and act as the counterpart to the private operator is typically positioned at the local level. Locally-elected officials benefit from the proximity of the consumer base and from understanding consumer needs."³⁹ In fact a study from the French Direction des Routes (Roads Ministry) reveals that many European states have transferred roads owned by the central government to local governments (*collectivités locales*). This transfer has taken place in the broader context of power decentralization with the aim to grant local governments greater autonomy.⁴⁰

One of the various forms of Public-Private Partnerships, the French concession model, has emerged in France despite a strong traditional role of the government in the provision of public

³⁸ Jean-Yves Perrot and Gautier Chatelus, eds., *Financing of major infrastructure and public service projects, Lessons from French experience throughout the world* (Paris: Presses Ponts et Chaussées, 2000), 99.

³⁹ *Ibid.*, 282.

⁴⁰ Direction des Routes, Mission Economie et Affaires Européennes, *L'organisation des administrations routières et le financement des routes en Europe* (Paris: DR, 2004), 9.

services and a centralized form of government. As such, it is possible that the United States offers an even more favorable ground to the implementation of Public-Private Partnerships.

B. EXISTING TOLL ROADS: A PARTICULARLY WELL-SUITED ASSET FOR CONCESSIONS

In Europe, Public-Private Partnerships have been formed in many different sectors that were traditionally managed by governments: waste management, water services, power generation and distribution... France has been particularly active in forming Partnerships for the development and maintenance of its roads. In fact this paper will argue that roads, in particular toll roads, exhibit certain characteristics that render them particularly proper for the formation of Public-Private Partnerships. Moreover, the French experience shows that existing toll roads are better suited than greenfield road investments for the development of Public-Private Partnerships.

1. Toll roads allow for an easy remuneration of the private operator

The provision of a public service by the private sector is problematic. Governments typically provide public goods like national defense. In economics, public goods are defined as non-rival and non-excludable goods which means that (1) the consumption of the good by one individual does not reduce the amount of the good available for consumption by others and (2) it is not possible to exclude individuals from the good's consumption. Non-rivalness and non-excludability cause problems for the production of such goods because private markets are unable to provide these goods in desired quantities as no investor would be assured of appropriate remuneration.

It cannot be argued that roads are non-rival as congestion quickly proves that the consumption of the road by one motorist does reduce the portion of the road available to other motorists. Moreover, toll roads certainly solve the problem of non-excludability. The use of tolls

facilitates the establishment of a pricing mechanism that directly links the price to consumption by end users which in turn permits private sector participation. With the construction and maintenance of roads mainly financed from general and dedicated taxes, pricing of road use is largely undeveloped when “its potential for relieving congestion, for identifying where the provision of additional infrastructure would be beneficial, and for raising the financial resources for maintenance and new investment is considerable.”⁴¹

Technological changes have allowed a wider application of road pricing mechanisms. In particular, electronic toll collection has rendered tolls less visible and more widely accepted. They enable the collection of a variable toll according to traffic conditions, mileage or vehicle category and result in a much better pricing of road use. The costs for electronic road pricing have fallen dramatically, paving the way for detailed billing based on actual use. In general, as it becomes easier to set rates for a public good or service, greater private sector involvement is also easier to introduce. As such, toll roads are an appropriate public service to be provided by private investors.

2. Greenfield toll road investments are not attractive to the private sector

Start-up financing problems are a major impediment to greenfield toll road investments because of the high risk involved in planning, developing, and constructing a highway. In particular, the time and cost to obtain environmental and other regulatory approvals, together with the costs and uncertainties of land acquisition, are significant. Even if laws can be passed to expedite the environmental process and regulatory approvals, the pace of greenfield development is quite slow. Moreover, substantial risks are involved in highway construction. As Boston Big Dig demonstrated, large projects face possible unforeseen and uncontrollable design and engineering changes, which can undermine the financial feasibility of an otherwise sound project. Furthermore,

⁴¹ Darrin Grimsey and Mervyn Lewis, *Public Private Partnerships, The worldwide revolution in infrastructure provision and project finance* (Northampton, MA: Edward Elgar, 2004), 31.

the construction phase spans several years and market conditions may change, labor and material costs increase, and unexpected delays occur. Completion delays can add substantially to completion costs, defer the receipt of user revenues, and lead to debt repayment difficulties.

It follows that the most obvious advantage of developing a Partnership around an existing toll road, as opposed to a greenfield toll road, is the ability for investors to quickly close the transaction and increase their probability of earning returns sooner. Stephen Allen, CEO of Macquarie Infrastructure Group, confirms that financiers are primarily attracted by the leasing of existing transportation assets.

The leasing deals of existing assets are the ones that can happen a lot quicker and simpler so they are of obvious interest. If you can make a project work just through the toll revenue, then that is the most expeditious way to get the transaction completed. Usually, if there is any form of government or subsidized funding or tax advantage funding, there are a number of added constraints, for instance restrictions on autonomy or ownership. MIG is wide open about how we finance projects and make them work, but if we can do a transaction with an existing toll road, that is the easiest transaction to complete, and it's probably the easiest politically as well.⁴²

3. Existing toll roads have limited traffic risk

Quite evidently, attracting private investment requires the prospect of profit. A key question in highway projects is therefore whether revenues from tolls will be sufficient to repay bond holders and provide an attractive return on investors' equity. Given that Public-Private Partnerships are in essence financial transactions, they can only be used successfully on projects with the most robust financials. In the case of toll roads, this means that successful PPPs can only be developed on projects with robust traffic volumes. Revenue forecasts rely almost exclusively on traffic predictions and economists at Merrill Lynch argue that, in the case of toll roads, "the economic value of time savings and reliability resemble that of a commodity."⁴³ Commodities are inelastic

⁴² Elise Pendlebury, "An insight into Macquarie's US infrastructure team: Q&A with Stephen Allen," *P3 Americas*, August 17, 2006.

⁴³ Philip Villaluz, "US Toll Road Privatization," *Merrill Lynch Municipal Credit Research Group*, March 20, 2006.

goods. Established toll roads enjoy a price inelastic demand because motorists are willing to pay tolls that equate a perceived economic value, mostly fuel and opportunity costs. The benefit of avoiding the inconvenience of slower, more congested non-tolled roads is considered a commodity which explains why private investors can be assured a stable traffic rate and the ability to raise tolls as needed.

In France, the concept of paying tolls is seen as a fair tradeoff, where if a toll is charged, additional compensation is provided in the form of an accelerated improvement schedule or congestion-free roads. “In both France and Italy, for some fifty years now, tolls have been charged on interurban motorways. Motorists have come to recognize, and accept, that it is preferable to pay a toll and benefit from a high-quality road than to cope with saturated traffic conditions.”⁴⁴ As a result, for existing toll roads, revenue growth, which is based on annual traffic and toll rate increases, is relatively predictable. In a report on US toll roads privatization, Merrill Lynch explains why they are such attractive investments.

An established highway, especially a major toll road or river crossing, usually has many years of operational history and serves as the primary link between regional economic centers. Operating costs tend to remain stable, and in many cases provide opportunities for business-driven efficiencies. The provisions for toll increases are outlined well ahead of time, therefore reliable cash flow models can be constructed with a good deal of confidence.⁴⁵

The fact that PPPs are not adapted to the financing of new roads does not mean that they are of lesser value. If PPPs lead to better operated roads, they might be able to delay the need for additional capacity simply by more efficiently managing congestion. The paper will examine PPPs’ results in highways operation in section C of the present part.

⁴⁴ Jean-Yves Perrot and Gautier Chatelus, eds., *Financing of major infrastructure and public service projects, Lessons from French experience throughout the world* (Paris: Presses Ponts et Chaussées, 2000), 140.

⁴⁵ Philip Villaluz, “US Toll Road Privatization,” *Merrill Lynch Municipal Credit Research Group*, March 20, 2006.

4. Is tolling better left in the hands of the private sector?

It has just been demonstrated that existing toll roads are particularly attractive to private investors and hence well-suited to Public-Private Partnerships. Going a step further, it is possible to successfully argue that toll roads are better left in the hands of the private sector.

The first disadvantage of having public toll authorities that comes to mind is the danger of long-established toll authorities becoming creatures of politics. In most cases, senior officers will have been appointed by political patronage instead of being experts of toll roads management. The toll authority becomes a kind of tax agency producing surpluses of revenue, which are then allocated to support constituents' interests.⁴⁶ Toll rate-setting risks to be dictated by what is popular in public agencies, rather than what makes business sense. Given that toll rate increases are unlikely to be popular, public toll authorities will be restrained in their ability to increase those rates. In their criteria for Toll Road Revenue Bonds, Standard and Poors underlines the significance of these necessary rate increases for the maintenance of an investment-grade rating of the bonds. "The degree of autonomy enjoyed by the directors of a toll facility has an important bearing on its capacity to manage. Of particular importance is the ability and willingness of management to increase tolls as needed. When the level of a rate increase is limited by government approval, a history of being able to increase toll rates when needed to the maximum level allowed is considered a positive."⁴⁷

When public toll authorities do proceed to toll rate increases, this leads to significant disruptions. Peter Samuel from Reason Foundation demonstrates that the involvement of the private sector abolishes the phenomenon of "earthquake pricing". This refers to the tendency of state toll authorities to engage in very disruptive pricing. They typically have their rates stuck for

⁴⁶ Robert Poole, Peter Samuel, and Brian Chase, *Building for the future: Easing California's transportation crisis with tolls and PPPs* (Los Angeles, CA: Reason Foundation, January 2005), 40.

⁴⁷ Standard & Poor's, *Public Finance Criteria: Toll Road and Bridge Revenue Bonds* (The McGraw-Hill Companies, June 21, 2006).

eight to ten years, then raised 25 to 80 percent in one hit. Over time, because they erode with inflation, real tolls decline and the pressure on the toll authority budget builds up until it cannot finance much-needed maintenance or improvement projects, or worse yet it cannot pay its debt obligations. “Toll rate-setting being all politics in a government authority, it needs a crisis before management will take up the challenge of justifying the new toll rates. When the price earthquake comes there is unnecessary disruption. Traffic, particularly trucks, tends to divert onto local roads leading to great local annoyance, more accidents and reduced transport efficiency as trucks are traveling on slower roads.”⁴⁸ Private companies change prices far more regularly but in much smaller increments, thus proceeding to much less disruptive necessary toll increases. Toll road operators in Europe and Australia tend to be private sector entities following more businesslike practices regarding hiring, investment decisions, and financial management. In fact toll increases, together with increased efficiency, might be one way in which the private sector is able to extract better value of toll roads. This is examined in the following section.

C. PUBLIC-PRIVATE PARTNERSHIPS HAVE RESULTED IN BETTER OPERATED TOLL ROADS IN FRANCE AND MORE RECENTLY IN THE US

The involvement of the private sector under the concession model increases and improves the type of financing available for infrastructure projects. Moreover, through an optimal risks allocation and a better alignment of incentives, the execution of Public-Private Partnership projects is improved. Finally, through higher revenue and operating efficiencies, the private sector is able to better operate toll roads to the benefit of motorists.

⁴⁸ Peter Samuel, *Should States sell their toll roads?* (Los Angeles, CA: Reason Foundation, 2005), 20.

1. PPPs: an unmatched financing opportunity

- Is private financing necessarily more expensive than public financing?

It is first important to address the argument that governments can obtain financing at risk-free rates necessarily rendering private financing more expensive. Darrin Grimsey rightly argues that private financing is not more expensive than public financing when one includes the cost involved to taxpayers. Given that the extra cost of private sector funding vis-à-vis public borrowing is likely to be between 1 to 3 percentage points, some have argued that PPPs can never be cost effective. The question is not only whether the private sector is able to deliver sufficient cost savings to offset the higher private borrowing costs, but also whether private financing is really higher. Modigliani and Miller argued that, in a no tax environment, the true value of a firm is governed by the risk characteristics of the underlying stream of returns and is independent of how finance is raised. Instead, the cost of debt to governments and private firms is influenced by the perceived risk of default rather than an assessment of the quality of returns from the investment considered. Governments are typically considered to be free from the risk of default as they can raise taxes to meet their debt obligations. However, even if a government would indeed be risk-free, the risk would be transferred to the taxpayers who would bear the cost through the risk of higher future tax payments and different consumption outcomes. Grimsey argues that “the residual risk imposed on taxpayers is a cost, which ought to enter into any cost-benefit analysis. If this were done, the real cost of government borrowing would be the same as the private sector if the underlying risk of the projects were the same.”⁴⁹

⁴⁹ Darrin Grimsey and Mervyn Lewis, *Public Private Partnerships, The worldwide revolution in infrastructure provision and project finance* (Northampton, MA: Edward Elgar, 2004), 133.

- A better value for government assets

In a paper devoted to Public-Private Partnerships, the consulting and engineering firm HDR argues that “governments facing financial strains sometimes fail to recognize a valuable asset at their disposal to address critical infrastructure needs: government-owned real estate.”⁵⁰ The involvement of the private sector in the market for public services would allow the government to monetize its assets and receive up-front cash for their sale or concession. Peter Samuel from Reason Foundation suggests an order of priority for the spending of proceeds. According to him, the government should first pay down its debt, then reduce some taxes, improve congested or unsafe roads, and finally establish a rainy-day budget fund with an annuity. He explains that “without that debt to service in future years, there will be a stream of future benefits from the lesser debt burden being carried forward. Each year through the term of the retired debt, the state budget will benefit by the lower annual interest and repayment bill. There will be less pressure to raise taxes and less need to reduce expenditures considered vital.”⁵¹ In the case of Indiana Toll Road, adjacent counties received 34% of the net proceeds, after \$750 million was subtracted to retire outstanding bonds, pay administrative expenses to secure the lease and establish a \$500 million trust fund. Interest on the trust can be tapped every five years for transportation projects. Similarly, Mark Florian from Goldman Sachs explains that “Chicago used its proceeds to reduce debt, set up a \$500 million rainy-day fund, provide \$375 million to its annual operating budget, and help pay for some social service programs. The city also saw its bond rating upgraded a notch, to A+, which is expected to help the city save on interest when it borrows money.”⁵²

⁵⁰ HDR, *Creating Effective Public-Private Partnerships for buildings and infrastructure in today's economic environment* (2005), 9.

⁵¹ Peter Samuel, *Should States sell their toll roads?* (Los Angeles, CA: Reason Foundation, 2005), 11.

⁵² Associated Press, “Chicago lease deal draws criticism at House hearing,” *Chicago Business*, May 24, 2006.

Beyond the monetization of its assets, the government would also receive a higher and more accurate valuation of those assets if the private sector is involved. The reason why the involvement of the private sector yields a higher valuation of government assets is explained very clearly by Mark Florian: “The debt markets, which have historically supported public toll roads, rely primarily on historical growth to determine the borrowing levels for a toll road. Equity investors in PPP projects, however, are willing to pay for the expected value of future cash flows from steady revenue-producing assets such as a toll road, and they are often comfortable taking a more optimistic view on the future performance of established assets.”⁵³ In sum, the private sector is more forward-looking and more willing to include expected future cash flows in their valuation of government assets than typical lenders are. Private firms use discounted cash flows models to determine the present value of the road which is the cash the road is expected to generate over the life of the concession in today’s dollars.

- The higher flexibility of bank financing under the project finance model

In addition to not being more expensive, private sector lending through the banking system is typically more flexible. In an article entitled “Banks often more flexible in P3 deals”, Elizabeth Albanese from the Bond Buyer explains that banks provide flexibility to these projects that bond financing does not. In particular, bank financing can be done for sub-investment grade assets where this is prohibited in the tax-exempt municipal bonds market. Moreover, “projects that might not be considered investment-grade by the rating agencies are considered investment-grade in some cases by banks.”⁵⁴

⁵³ Congress, House, Committee on Transportation and Infrastructure, Subcommittee on Highways, Transit and Pipelines, *Mark Florian: Testimony before the Subcommittee on Highways, Transit and Pipelines*, 109th Cong., 2nd sess., May 24, 2006.

⁵⁴ Elizabeth Albanese, “Banks often more flexible in P3 deals,” *The Bond Buyer*, October 23, 2006.

The structure of the financing can also be negotiated directly with the bank which is not possible in the case of a bond issue since lenders are spread out and typically even unknown. With toll roads, where traffic risk is crucial, the flexibility of bank financing lies in the fact that a fixed payment schedule is not the norm. Bonds can also be structured so that more is repaid at future times but the feature will be less easily changed than with a bank.

After the project has gained operational track records, banks typically expect refinancing and structure the deal accordingly from the very beginning. The loans are often converted to bond issues or into a combination of bank loans and bonds with the goal of decreasing financing costs. The flexible features mentioned above add to the number of financing options available for a project and therefore provide more liquidity. Ultimately, more liquidity will bring down the cost of financing the project.

In a presentation about the Indiana Toll Road deal,⁵⁵ Cintra highlights the flexibility of the financing put into place by the strong syndicate of eight top project finance banks. The financial structure of the deal was as follows:

SOURCE	(\$ Mn)	%	USES	(\$ Mn)	%
Bank debt	3.279	81,0%	Purchase price	3.850	95,1%
Equity	770	19,0%	Reserves	100	2,5%
			Other expenses	99	2,4%
TOTAL	4.049	100%	TOTAL	4.049	100%

Source: CINTRA

The non-recourse bank financing consisted of \$3,279 million for the acquisition costs, as well as an additional \$100 million facility for liquidity purposes and \$700 million for capital expenditures. The three tranches have a 9-year maturity which implies regearing assumptions as the concession

⁵⁵ Cintra, *Indiana Toll Road Presentation* (accessed March 31, 2007); available from <http://www.cintra.es/index.asp?MP=20&MS=0&MN=1&TR=A&IDR=1&iddocumento=155>.

term is 75 years. Cintra mentions refinancing options both in the bond and in the bank markets through subordinated debt. Like the Chicago Skyway deal, it is expected that Indiana Toll Road will be refinanced. Skyway was refinanced by the private consortium through an innovative \$1.4 billion securitization with an issue of bonds whose proceeds were used to repay the existing bank loan, fund various reserve accounts and required capital improvements, and make payments in connection with swap transactions at close. Indeed the interest rate on all bonds was swapped to a fixed rate, thus deferring the majority of fixed payments to 2019 and enabling the sponsors to achieve a lower rate of financing.⁵⁶

- The benefits of long-term equity infusion

More than simply increasing the financing available, the PPP model leads to the provision of equity which will be key in the development of long-term infrastructure projects. In fact equity is referred to as “patient capital” because equity investors are willing to wait for their return in the out years, in contrast to toll revenue bondholders who must be paid on schedule from year one. Peter Samuel explains that most government-owned toll roads are too leveraged and therefore default on their bonds if traffic is lower than in the business plan. Roads typically have a more robust financial profile if they are financed by investors partly with debt and partly with equity capital.⁵⁷

In a statement before the House Committee on Transportation and Infrastructure, Karen Hedlund, a partner at a law firm explains that until recently, long-term equity investments were discouraged by US tax laws. With SAFETEA-LU, the transportation act passed in 2005, more projects are developed using the concession model, with project sponsors’ equity at risk to the long-term performance of the project. In the US, the demand for the infrastructure asset class is booming

⁵⁶ Gregory Carey, *Current opportunities in the US PPP marketplace*, Presentation to Texas Transportation Forum, June 9, 2006.

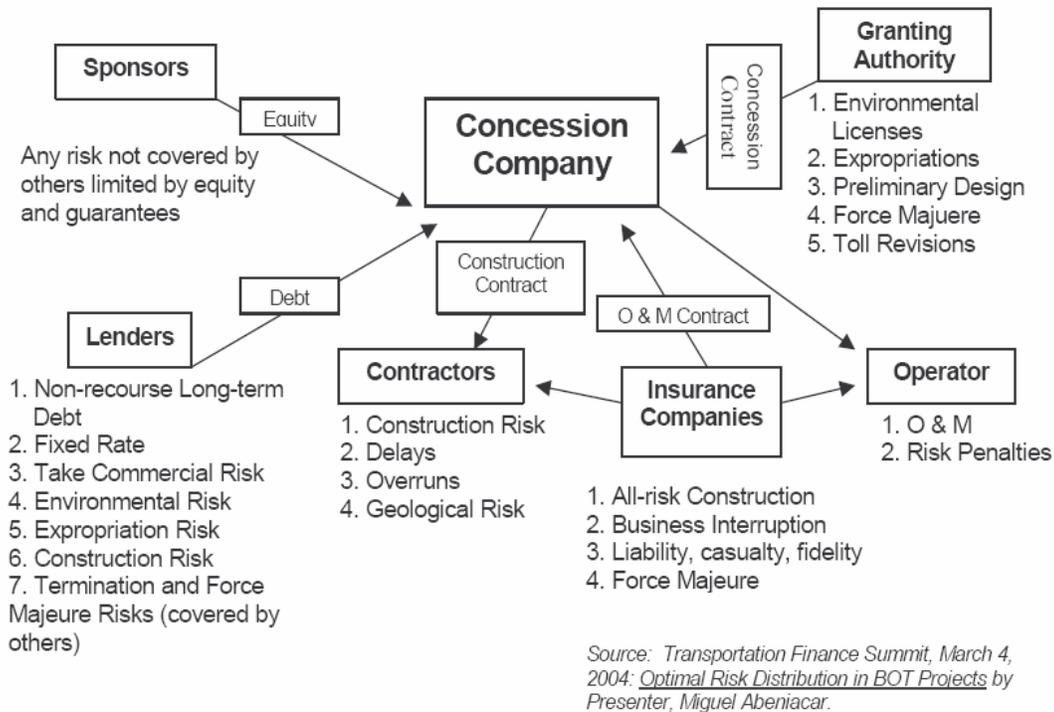
⁵⁷ Peter Samuel, *Should States sell their toll roads?* (Los Angeles, CA: Reason Foundation, 2005), 25.

and many infrastructure funds have been created which offer a significant amount of financing to the US government. In addition, with equity at risk the sponsors have a greater incentive in the successful realization of the project.

Finally, classic capital structure theory articulates the need for equity in the financial structure of a project. Although debt provides cheaper financing because interest payments are tax-deductible, the benefit of adding more debt to the capital structure of a project decreases with the increasing likelihood and costs of financial distress. The more debt is added to the capital structure, the more residual equity holders are and therefore require higher compensation. It follows that an equilibrium exists between the amount of debt and equity to obtain the cheapest financing possible.

2. An optimal allocation of risks between the private and public sectors

As was already mentioned, PPPs are structured like project finance transactions where risks are spread out among the parties according to their capacity to manage them. Indeed a Public-Private Partnership is a risk-sharing relationship between the public and the private sectors to deliver transportation infrastructure which involves the transfer of risks to the partner who is best able to manage it. Risk allocation will vary according to the type of project and location, as well as the stage of the project development. Generally, the state is totally protected because all of the money is paid upfront. If there are cost overruns and/or inadequate revenues, the contractor is on the hook for any losses, not the state. Additionally, the concession agreement can be very detailed and protects the public interest. Performance levels are typically well-defined and the contractor is required to meet them or face penalty. Below is a diagram describing typical PPP players and the types of risks they may undertake between various phases of the project.



By allocating risks to the parties who have an incentive to reduce negative impacts, the PPP model creates a better alignment of incentives among the parties involved and ultimately leads to a better execution of the project.

3. A better alignment of incentives in the realization of the project

The traditional design-bid-build procurement method is a two-step process which involves governments retaining the services of private sector engineers to design a project and then organizing a second procurement to award a construction contract to the qualified private contractor submitting the lowest bid to build the project. The main intent of the low-bid approach is to save costs and protect the public interest. Contractors nonetheless benefit from this approach as well because it eliminates most unknown conditions by defining all requirements of the project in the request for proposals issued by the state. Any errors and omissions in the plans or unforeseen work are the responsibility of the state. In practice, the traditional procurement model for public services

puts the major risks of cost overruns and miserable traffic onto the shoulders of taxpayers. If taxpayers are picking up the tab, the contractors have no incentive to anticipate problems and change orders and the total risks and costs of a project are likely to increase. Under this approach, the design contractor will do only a straightforward job of design with little concern for buildability or operation costs.

The PPP model however completely changes incentives. The responsible agency does a preliminary design and a feasibility study before it goes out to bid for a private firm to design, finance, build, operate, and maintain the project for a long period of time, often 25 to 50 years. The design-builder is responsible for any necessary changes as the project develops and has therefore a stronger incentive to control the timing and cost of completion. The chosen firm will subcontract the different tasks but will ultimately be solely responsible to cover all the costs of building, operating, and maintaining the project out of user-fees. In this model, it is very likely that the private firm will design a project facilitating buildability, avoiding cost overruns, and making sure that toll revenues begin to flow on time in order to be able to make the required debt-service payments. Furthermore, since the team that develops the project will also be the one to operate and maintain it, it will have strong incentives to use innovation to build the project in ways that minimize its life-cycle costs and make it more durable to minimize maintenance expenses.⁵⁸

In France, the PPP tender process is based on a dialogue that allows the public authority to hold preliminary discussions with private sector candidates to determine the terms and conditions of a particular transaction, rather than establishing specifications unilaterally.⁵⁹ The request for proposals (RFP) is only established at the end of this discussion. French authorities award a Public-Private Partnership contract to the candidate with the “most economically advantageous” proposal,

⁵⁸ Robert Poole, Peter Samuel, and Brian Chase, *Building for the future: Easing California’s transportation crisis with tolls and PPPs* (Los Angeles, CA: Reason Foundation, January 2005), 37.

⁵⁹ Caroline Porcher-Marquis and Davis Syed, “French PPP Legislation: An opportunity for the financing of public investments,” *Project Finance Magazine*, Legal Advisers Review, 2004/2005.

as determined in accordance with criteria set forth in the RFP. Both mandatory and permissive criteria exist. Mandatory criteria include the overall cost, proposed performance objectives and the portion of the project that will be performed in association with small and mid-size companies. Permissive criteria include technical and functional capabilities, appearance and innovation.⁶⁰ Technology enterprise Battelle reports that PPPs can result in as much as a 50% time reduction in project duration when compared to the traditional design-bid-build approach.⁶¹ The firm also reports that Public-Private Partnerships can result in cost savings ranging from 6 to 40 percent.⁶²

4. Toll roads exhibit better operating performance under the concession model

In addition to the higher up-front value that the private sector is willing to pay for government assets, private investors are able to realize a higher value from the assets and in turn spend more on improvements, to the benefit of motorists. Thanks to its expertise, the private sector is better able to use operating leverage and explore value drivers from infrastructure assets. There are two main ways in which the private sector improves operating performance: 1) through revenue growth and 2) thanks to operating efficiencies which will hold down expenses and increase margins, but also result in better service to motorists.

- Exploring the potential of future revenue growth

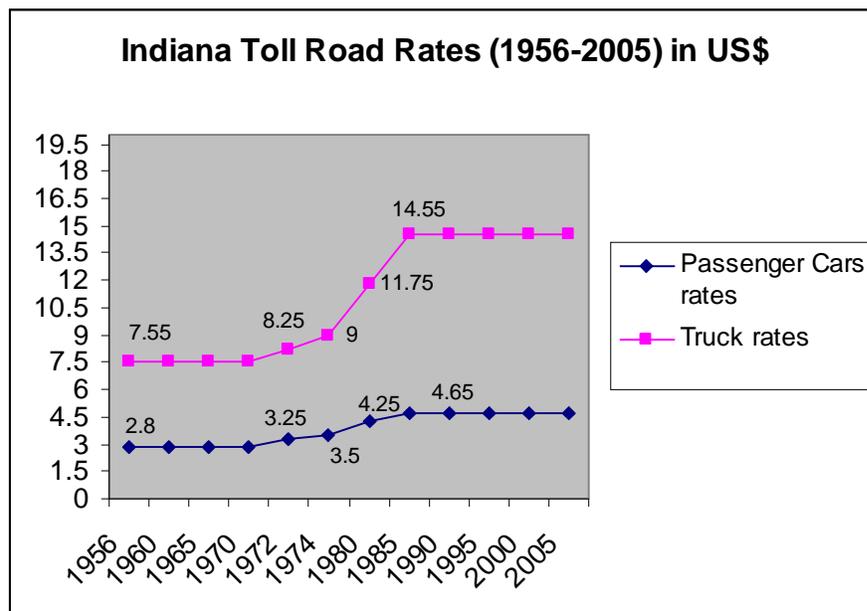
Under a Public-Private Partnership, the private company provides a service of such value that motorists will be attracted to pay more than that service costs to provide. For Peter Samuel from Reason Foundation, it is fundamental that “management be free to take initiatives to market the toll road, hire and fire staff, and adjust services provided according to what customers are

⁶⁰ Caroline Porcher-Marquis and Davis Syed, “French PPP Legislation: An opportunity for the financing of public investments,” *Project Finance Magazine*, Legal Advisers Review, 2004/2005.

⁶¹ US Department of Transportation, *Report to Congress on Public-Private Partnerships*, December 2004, 48.

⁶² *Ibid.*, 42.

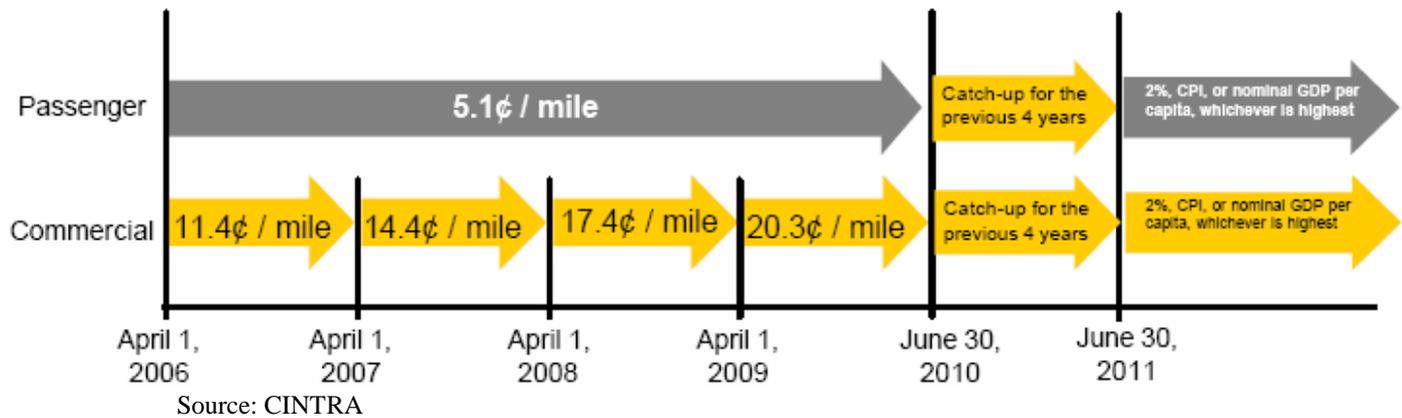
prepared to pay for.”⁶³ As was mentioned previously, the private sector is able to increase tolls as needed and use variable pricing to better link the price of the road to the motorist’s consumption. After the leasing of Indiana Toll Road to a private consortium, the state of Indiana announced the first toll increase since 1985. As can be seen in the graph below, toll increases had been rare since the opening of the toll road in 1956 and tolls had remained unchanged since 1985.



Source: Wilbur Smith Associates

Under the concession agreement, rates will be increased according to a rather complex pre-defined schedule. In 2006, the toll for passenger vehicles increased from 3.0 cents per mile to 5.1 cents per mile and the toll for commercial vehicles from 9 to 11.4 cents per mile. Until 2010, tolls will be increased as shown in the figure below. In 2010, tolls will be adjusted again after which they will be increased based on one of the following three rules, whichever is highest: 2%, the rise in the CPI, or the increase in gross domestic product per capita.

⁶³ Peter Samuel, *Should States sell their toll roads?* (Los Angeles, CA: Reason Foundation, 2005), 18.



This toll rates schedule will allow the private concessionaires to unlock value from the toll road that the state of Indiana had forgone because of its inability or unwillingness to raise tolls.

In addition, the private concessionaire often has to agree to mandated capital expenditures. The Indiana Toll Road agreement contains an obligation to expand up to three lanes each way on certain sections of the road, together with an obligation to widen the road when certain congestion criteria are met. The ability of the private sector to increase road capacity will generate more traffic volume and more demand, thus tapping additional revenue. Moreover, the private sector will be able to increase operating efficiencies and drive margins higher both because of its expertise and the performance requirements of the concession agreement.

- Toll road expertise and the performance requirements of the concession agreement

Thanks to its toll road expertise, the private sector will be able to create operating efficiencies and reduce costs, thus unlocking some additional value from infrastructure assets. Moreover, the performance requirements embedded in the concession agreement will force the private concessionaire to maintain road quality and carry capital expenditures. As a result, the toll road will be run more efficiently and provide better service to motorists.

One of the first changes that experienced toll road operators carry in the operation of infrastructure assets is the installation of electronic tolling. Electronic toll collection allows for streamlined operations and a reduction in operating costs. As such, even if electronic tolling is typically required in the concession agreement, the concessionaire would undoubtedly do it anyway because it pays off rapidly in lower costs. It is also beneficial to motorists who will save time at the toll booth and often get a reduction for subscribing to a monthly highway pass. As a result, electronic tolling might also create a price/demand inelasticity and higher revenue. Electronic tolling was established shortly after the leasing of Indiana Toll Road. The table below illustrates projections made by Goldman Sachs for the toll road and shows expected margin improvements:

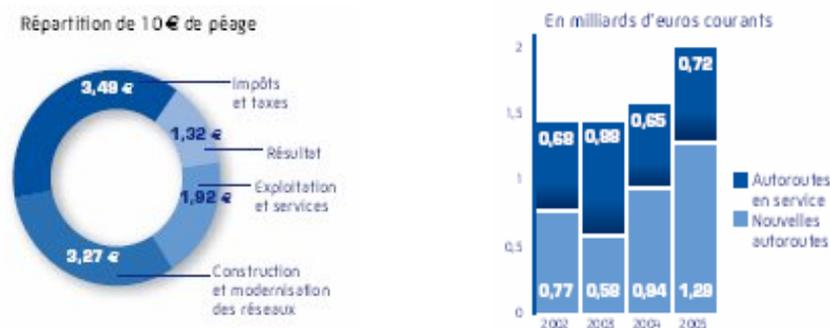
Key Historical and Estimated Financials				
(in millions \$)	2004 A	2005 A	2006 E	2007 E
Commercial revenue	49.6	53.3	NA	NA
Passenger revenue	35.3	34.4	NA	NA
Total toll revenue	84.9	87.7	90.3	126
% growth	3.5	3.3	2.6	39.5
EBITDA	59.7	60.6	63.9	98
% margin	65	63.3	63.5	71.8

Source: Goldman Sachs

In France, the concession agreement is the most central piece defining the Partnership between the government and the private sector. David Seader explains that the operating requirements placed on the private firm are contained in the concession agreement which details all of the performance expectations that need to be met in order to maintain the concession in effect.⁶⁴ The concession model is often cited as the reason for the good condition of French highways. The association of French highways companies (Association des Sociétés Françaises d'Autoroutes, ASFA) reports a total of 1.6 billion euros of investments in 2004 which represents a quarter of highway revenues. Those investments are distributed between 940 million euros of new highways

⁶⁴ David Seader, "The United States' Experience with Outsourcing, Privatization and Public-Private Partnerships," National Council for Public-Private Partnerships, 7.

construction and 660 million euros of highways improvements. ASFA adds that this level of investment allows French highways' pavement to be redone approximately every ten years.⁶⁵ The graph below (left) shows how 10 euros of tolls are used by French highway companies, with 3.27 euros going to the construction and modernization of the network. The graph on the right shows the repartition of investments between new highways (bottom bar) and improvements to the existing network (top bar) from 2002 to 2005.



Source: ASFA Annual Report 2005 (in billion Euros)

A common objection to PPPs is that private companies will always sacrifice quality for the sake of profit. The consulting firm HDR argues on the contrary that Partnerships will actually increase the quality of service received by the public because performance standards can be clearly defined in the concession agreement. In structuring a Partnership agreement, through carefully procured contracts and effective oversight, the public sector has the power to clearly define and control the levels of quality and service required of its private sector partners.⁶⁶ In the Indiana Toll Road case, every year the concessionaire must provide the state with a traffic study by an independent traffic consultant. The study will describe the existing levels of service on the road and

⁶⁵ ASFA, *Rapport d'Activités 2005*, (accessed February 16, 2007); available from <http://www.autoroutes.fr/publications/institutionnelles.php?lng=1&idpublication=52>.

⁶⁶ HDR, *Creating Effective Public-Private Partnerships for buildings and infrastructure in today's economic environment* (2005), 5.

project levels for the next seven years. If the annual study shows a level of service below a certain level, the concessionaire will have 180 days to submit a plan of improvement.⁶⁷ The private company is not only bound by the agreement but also by the fact that it may be difficult to later be selected if it fails to deliver on its obligations made in the Partnership agreement.

Finally, the public sector typically maintains the right to terminate the Partnership for non-performance. In the case of the Indiana Toll Road, a detailed 263-page concession agreement was signed to protect public interests. The agreement spells out well-defined performance levels that the contractor is legally required to meet or face penalty. Dead animals, for example, need to be cleared off the road within eight hours and potholes need to be filled within 24 hours. These standards often go beyond traditional Indiana Department of Transportation requirements, something that could not have been done except through a private-lease agreement.⁶⁸

- Customer focus is increased under Public-Private Partnerships

Traditionally, toll roads are financed and built by government toll authorities. Those authorities are constituted merely to finance and build the road and to collect tolls over a number of years to pay off the original debt. They finally disband after handing the road over to a state department of transportation. As a result, toll authorities are mainly seen as toll collectors while operational decisions are made by top elected officials. It follows that operations and customer service are not the top priority in a state toll authority.

The use of a Public-Private Partnership introduces private sector concepts of marketing and increases customer focus. Toll roads typically have active programs to attract users and provide a travel experience that is superior to the surrounding non-toll roads. The engineering firm KCI Technologies explains: “In most P3 projects, the facilities are portrayed as offering a faster and

⁶⁷ “Concession contract for Indiana Toll Road detailed,” *Toll Roads News*, February 2, 2006.

⁶⁸ Geoffrey Segal, “Bottom-Line on Indiana Toll Road deal,” *Indiana Policy Review*, July 10, 2006.

more pleasant ride. Drivers are viewed as customers with a high priority placed on customer satisfaction.”⁶⁹ In a testimony before the Indiana Senate Appropriations Committee, Geoffrey Segal from Reason Foundation cited some of the benefits of the involvement of the private sector in toll roads operation. “Private toll operators have first-rate programs to assist broken down customers. They have also developed customer guarantees if the road fails to meet expectations or save time as pioneered by the 91 Express Lanes in California. Toll roads can and should be operated as a real business. Cost cutting measures are put in place and quality is the highest priority.”⁷⁰

- Superior accountability of the private sector to the driving public

Finally, because the private sector operator has superior accountability to the driving public, roads are operated better under a Public-Private Partnership. It seems possible to argue that private entities are less accountable to the public than governments. In reality however any private company entering a Public-Private Partnership faces numerous levels of accountability and is therefore made more accountable to the driving public than the government itself would be. In fact the private company is answering not only to the government agency that hires it, but also to various federal and state regulators and legislative oversight committees, as well as to the public at large, the financial community and the media.⁷¹ Adopting a long-term perspective, private contractors must maintain a high quality of service as well as the confidence of their public agency and the public itself if they want to repeat P3 business. Darrin Grimsey offers a strong argument to counter concerns that private sector participation in infrastructure will dilute accountability and

⁶⁹ KCI Technologies, *Current practices in Public-Private Partnerships for Highways* (July 2005), 47.

⁷⁰ Indiana Senate, Appropriations Committee, *Geoffrey Segal: Testimony before the Appropriations Committee*, February 9, 2006.

⁷¹ HDR, *Creating Effective Public-Private Partnerships for buildings and infrastructure in today's economic environment* (2005), 5.

erode public interest. He argues on the contrary that PPPs offer an opportunity to expand the level of public interest protection.

The traditional system of public sector accountability relies on political accountability via a chain of relationships through which authority flows from citizens to MPs, MPs to ministers, ministers to civil servants, and civil servants to service providers. Too often in practice this line was blurred, administrative coordination was flawed, and decisions were made in secret and were not disclosed. The framework of a PPP relies instead on a transparent and open process of consultation with affected parties in which there are many points at which public interest concerns can be aired and resolved.⁷²

As a result, Public-Private Partnerships offer a much more direct channel of responsibility from the private company to the driving public.

The fact that PPPs are not adapted to the financing of new roads does not mean that Partnerships are of lesser value. The involvement of the private sector provides increased financing for the maintenance of roads and the structure of PPPs commands an optimal risk allocation and a better alignment of incentives among the parties. By bringing in the private sector, the operation of toll roads will improve and congestion could decrease thanks to the introduction of streamlined operations. Indirectly, PPPs will bring a solution to the capacity issue without necessitating the construction of new roads. Since US roads are in need of pressing maintenance, the involvement of the private sector as an experienced business partner to the government makes Public-Private Partnerships the perfect tool to respond to US highways maintenance funding needs. As a result, the paper now turns to the question of whether the concession model could be successfully exported to the United States.

⁷² Darrin Grimsey and Mervyn Lewis, *Public Private Partnerships, The worldwide revolution in infrastructure provision and project finance* (Northampton, MA: Edward Elgar, 2004), 248.

IV. CAN THE CONCESSION MODEL BE SUCCESSFULLY EXPORTED TO THE UNITED STATES?

After describing the French concession model and the context in which it emerged, this paper demonstrated that it was particularly well-suited to existing toll roads. Moreover, the improvements in project realization and toll road performance that can be traced to the use of the concession model in infrastructure provision make it attractive to other countries. The paper now examines whether Public-Private Partnerships would be applicable in the US economic, social and political contexts.

A. THE UNITED STATES HAS A LONG TRADITION OF PRIVATE SECTOR INVOLVEMENT IN ITS ECONOMY

One question one might ask is: what is the role of the private sector in infrastructure provision? Darrin Grimsey believes the answer in the United States lies in the historical background of privatism that has dominated thinking in the United States since the early 19th century. “Privatism is the presumption that economic activity should be left to the market; a belief that private institutions are intrinsically superior to public institutions for the delivery of goods and services, and a confidence that market efficiency is the appropriate criterion of social performance in virtually all spheres of community activity.”⁷³ Under this presumption, the role of the government is limited to the creation of coalitions among the diverse interests that exist in its pluralist system. In Europe however, and certainly in France in particular, the government is seen as a political and economic actor in its own right. It is the custodian of public interest and is seen as the only legitimate provider of most public services. The fact that Public-Private Partnerships have

⁷³ Darrin Grimsey and Mervyn Lewis, *Public Private Partnerships, The worldwide revolution in infrastructure provision and project finance* (Northampton, MA: Edward Elgar, 2004), 15.

nonetheless successfully been carried out in France shows that the ground is even more favorable in the United States.

The US transportation industry in particular has a long history of private sector involvement which dates back to the beginning of road construction and operation in the United States. As was already mentioned, many of the earliest major roads in the United States were private toll roads—in fact, there were more than 2,000 private toll roads in operation in the 19th century. The great expansion westward in the late 19th century was driven by a major Public-Private Partnership between the federal government and the private railroads. The government provided the right-of-way and related development property while the railroads used private capital to build rail facilities and rolling stock. Over time, private involvement declined as states and the federal government increased the pace of road construction. A major shift in US policy occurred during the Great Depression of the 1930s when private providers went bankrupt and were taken over by governments that needed to maintain those vital services. The federal government adopted an activist role in spurring the economy through public works and public payrolls. The command-control mentality during World War II and beyond cemented the government’s role as the provider of preference for the public sector and governments at all levels expanded their size, scope and level of control.⁷⁴ However, financing and construction were not keeping pace with demand. In the late 1980s some states began exploring the potential for the private sector to augment highway construction programs. The modern era of Public-Private Partnerships began during the Reagan Administration who took an ideological cue from Britain’s Prime Minister Thatcher and made the discussion of privatization a legitimate part of public policy decision-making. Major toll bridges in San Francisco and Detroit, using a concession model as it existed in Europe, marked a reemergence of the private sector involvement in the late 20th century.

⁷⁴ David Seader, “The United States’ Experience with Outsourcing, Privatization and Public-Private Partnerships,” National Council for Public-Private Partnerships, 1.

B. A CLEAR RECENT TREND TOWARDS MARKET-BASED SOLUTIONS IN HIGHWAYS OPERATION

This paper has demonstrated that existing toll roads are well-suited for Public-Private Partnerships. Tolls allow the private operator to be easily remunerated for the provision of road services and introduce the concept of user-pay, a market-based concept widely accepted in France.

US drivers however are traditionally opposed to tolls. The American public resists toll projects and opposes the tolling of pre-existing tax-supported roads because they view the roads as free. From their point of view, the construction and maintenance of roads has already been paid for through federal and state gas taxes. The commitment of state and federal officials to free roads has a long history in the United States. As early as 1916, the federal aid highway program prohibited the use of tolls on federally funded roadways. After World War II, President Eisenhower Federal Highway Act of 1956 appropriated \$25 billion to construct over 68,000 kilometers of interstate highways. While the authority to continue user-fees on existing toll roads was grandfathered, by law tolls were not allowed on the new Interstate Highways System.⁷⁵ The program was instead funded by a national fuel tax as has already been explained. As of 2000, the Interstate Highways System was a 912,000-mile network of highways, of which 93% were untolled.

Since the 1980s however, the increasingly limited availability of federal funds has forced state and local governments to take greater responsibilities for funding transport which has led to a renewed interest in toll-based finance. In 1987, the US Congress approved a pilot program authorizing 35% federal funding of government-sponsored toll road projects in nine states.⁷⁶ Moreover, the US Department of Transportation reports that “recent experience with toll roads suggests that motorists are willing to pay tolls if they see a clear benefit such as having additional capacity available that enables them to avoid congestion and save time getting to their destinations.

⁷⁵ Benjamin Perez and James March, “Public-Private Partnerships and the Development of Transport Infrastructure: Trends on both sides of the Atlantic,” Institute of Public Economics at the University of Alberta, August 2, 2006, 9.

⁷⁶ *Ibid.*, 9.

Local polls suggest that the public opposition to the use of tolls to finance transportation improvements may be diminishing.”⁷⁷ In their last report on surface transportation funding, the National Conference of State Legislatures gives an update on the state of tolling in the US. The report establishes that today more than 30 states collect toll revenue in some form, either through roadway or bridge tolls or ferry fares. In the last five years, as other revenue sources have declined in purchasing power, states have taken more interest in tolls as a way to finance transportation projects. From 1998 to 2004, revenues from tolls grew by 36.6%, from \$4.1 billion to \$5.6 billion.⁷⁸ Peter Samuel from Reason Foundation rightly argues that the declining resistance to tolls is also and mainly due to the introduction of electronic tolling. He writes:

Toll road customers just aren’t as conscious of tolls as they used to be. These days the regulars fly through the toll plazas using their electronic toll transponders. The bill pops up just once a month on their bank statement, one of many items. It’s very different from ten years ago. Then motorists had to assemble their toll with cash or a token every time, roll down the window, and pay. Often they had to queue and creep along behind others before paying. All this focused the mind of motorists very sharply on the toll, causing crabby feelings and resentment.⁷⁹

Furthermore, the decreasing resistance to tolls has enabled the implementation of a second market concept for the use of roads: value pricing. The first time value pricing was introduced in the United States was in 1991 with the enactment of the Intermodal Surface Transportation Efficiency Act (ISTEA). The Act established a pilot program allowing the implementation of variably priced tolls on the Interstate Highways System in up to 15 states. Toll prices can be designed to manage the number of vehicles using the facility so that free flow conditions are maintained at all times, including peak periods. Tolls vary by hour of the day, day of the week, and direction of travel. The value pricing model also encourages carpooling as high occupancy vehicles (HOV lanes) with three or more passengers can use express lanes at no cost. In other situations,

⁷⁷ US Department of Transportation, *Report to Congress on Public-Private Partnerships*, December 2004, 79.

⁷⁸ Matt Sundeen and James Reed, *Surface Transportation Funding, Options for States* (Washington, DC: National Conference of State Legislatures, 2006), 53.

⁷⁹ Peter Samuel, *Should States sell their toll roads?* (Los Angeles, CA: Reason Foundation, 2005), 2.

vehicles with less than three passengers are allowed to use the express lane after paying a toll (High Occupancy Toll lane). The value pricing pilot program has been continued since 1991, both in the Transportation Efficiency Act for the 21st century (TEA-21) which authorized transportation funding from 1996 to 2003 and in the most recent appropriation act, SAFETEA-LU, which was voted in 2005. The variable pricing pilot program, in which 14 states are participating, is funded at \$59 million through 2009.⁸⁰

C. THE US MARKET FOR INFRASTRUCTURE IS GROWING AND INCREASINGLY COMPETITIVE

Competition is key for the implementation of Public-Private Partnerships which is clearly explained by Grimsey: “Efficient private financing rests on competition between potential operators and keeps a lid on costs. Partnerships provide a framework in which these competitive processes are enacted.”⁸¹ Greg Carey, Managing Director at Goldman Sachs, believes that “because of the Indiana and Chicago deals, project finance and PPP is an alternative that everyone now has to look at. I think Indiana proves Chicago was not a one shot deal; that the market is really there.”⁸² He further explains that the level of competition is important for the investment community. “In terms of competition, you are going to see deals can get done if the economics seem to make sense. If the economics seem to make sense, these deals are going to get done because of competition and people are going to bring it out.”⁸³

Given the volatility of stock markets over the last 10 years, pension funds and other investment pools are searching for steady returns. With concession terms extending 70 years or

⁸⁰ Matt Sundeen and James Reed, *Surface Transportation Funding, Options for States* (Washington, DC: National Conference of State Legislatures, 2006), 54.

⁸¹ Darrin Grimsey and Mervyn Lewis, *Public Private Partnerships, The worldwide revolution in infrastructure provision and project finance* (Northampton, MA: Edward Elgar, 2004), 249.

⁸² *Panel Discussion: US Toll Road Preview 2006* (New York: P3 Americas, 2006).

⁸³ *Ibid.*

more, infrastructure investments are viewed as a long duration, consistent return portion of an overall portfolio. Elizabeth Albanese reports that many US investment banks have created infrastructure funds in preparation for entry into the P3 market.⁸⁴ Goldman Sachs is raising an infrastructure fund of more than \$3 billion, the Carlyle group is targeting a \$1 billion-fund and numerous other firms are contemplating funds of similar magnitudes. These funds are driven by the significant demand for the infrastructure asset class and the higher margins offered by project finance. In his last speech as US transportation Secretary, Norman Mineta said in July 2006: “Virtually every major financial institution on Wall Street has created, or is in the process of creating, an infrastructure fund with transportation as a major component. They correctly recognize the enormous potential in American infrastructure.”⁸⁵ The number of new entrants into the US market, foreign and domestic, continues to grow at an outstanding pace.

D. THE ADVANTAGES OF A FEDERAL SYSTEM FOR THE DEVELOPMENT OF PUBLIC-PRIVATE PARTNERSHIPS

The implementation of Public-Private Partnerships in a federal system presents some peculiarities, in particular when compared to PPPs implemented in the French context of relatively strong centralization. In a federal system, each state retains a great level of autonomy, particularly in government procurement and contractual practices. As a result, Richard Norment explains that there is a wide range of approaches to PPPs, with little or no guidance from the federal government. Accordingly, there is no equivalent of a Minister of Private Finance Initiatives at the US federal level like it exists in the United Kingdom.⁸⁶ As the paper has already explained, Public-Private Partnerships are better implemented locally. As such, the United States presents a favorable ground for the model.

⁸⁴ Elizabeth Albanese, “Banks often more flexible in P3 deals,” *The Bond Buyer*, October 23, 2006.

⁸⁵ Eddie Baeb and Justin Baer, “Goldman’s conflicts of interest convulse Chicago,” *Bloomberg*, July 17, 2006.

⁸⁶ Richard Norment, “PPP’s American Style,” *PFI Journal*, no. 39 (October 2002).

In addition, the high degree of political and functional independence of US state governments from the federal government leads to a fragmented bureaucracy. By contrast, European governments and especially France are much more centralized. This results in large, professional, and unitary bureaucracies at both a central and local level, with strong linkages between the levels.⁸⁷ It follows that American state and local governments are less dependent on the federal government, but by the same token they are more dependent on private capital for the realization of their projects. The federal system is thus not only favorable to the use of PPPs but renders them almost indispensable.

E. A CONSTANT INCREASE IN FAVORABLE REGULATIONS

The United States Congress has increasingly passed regulation encouraging the use of Public-Private Partnerships in the provision of public services. Moreover, a number of state legislatures have been particularly active in promoting PPP-enabling regulations. Since Public-Private Partnerships are primarily a state undertaking, the paper starts by describing state enabling laws relative to PPPs. Federal regulations and the role of federal agencies are described subsequently.

At the state level, the modern use of Public-Private Partnerships in the transportation arena originated with the adoption by the state of Virginia of its Public-Private Transportation Act of 1995. This Act serves as the basis to most other states' enabling laws. Today, over 21 states have adopted legislation authorizing the use of PPPs for the design, construction, financing and operation of transportation facilities. In 2005, the Nossaman law firm was asked by the Federal Highway Administration (FHWA) to survey those state enabling laws and provide a report. The law firm established that most states authorize the responsible public entity to solicit requests for PPP

⁸⁷ Darrin Grimsey and Mervyn Lewis, *Public Private Partnerships, The worldwide revolution in infrastructure provision and project finance* (Northampton, MA: Edward Elgar, 2004), 15.

proposals, including many states that authorize unsolicited proposals, which enable the private sector to offer projects that the public entity might not have considered. Statutes generally afford the public entity considerable flexibility in the types of agreements they may enter into and the specific procurement process so that they can easily select the one that is most appropriate for a particular project. Contracts are awarded on the basis of “best value”, which has already been demonstrated to yield superior results. State laws outline what should be incorporated in a responsive proposal even though the agency can ask for additional requirements. Generally, when and by how much tolls can be modified by the private operator is left to contract negotiation. The states vary in the extent to which the state legislature is involved in project selection. Some laws require submission of projects to the state transportation committee but few require legislative approval of final agreements as it would create political risk for the private company.⁸⁸

At the federal level, the rebirth of private sector participation can be traced back to the early 1990s, when ISTEA established a new vision for transportation in 1991. For the first time, private entities were allowed to own toll facilities. Since then, the US Federal government has consistently encouraged private sector activities in the provision of transportation infrastructure. The most encompassing federal regulation is found in the latest transportation Act, the “Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users” (SAFETEA-LU), passed by the House and the Senate on July 29, 2005. This Act authorizes \$286.5 billion in funding for surface transportation projects through 2009 and introduces numerous provisions that will facilitate the use of Public-Private Partnerships. First, the Act provides states with increased flexibility to use tolling, not only to finance infrastructure improvements, but also to manage congestion with the value pricing pilot program that was mentioned previously. Second, SAFETEA-LU expands bonding

⁸⁸ Congress, House, Committee on Transportation and Infrastructure, Subcommittee on Highways, Transit and Pipelines, *Karen Hedlund: Hearing before the Subcommittee on Highways, Transit and Pipelines*, 109th Cong., 2nd sess., May 24, 2006.

authority for private activity bonds by adding highway facilities to the list of activities eligible for those tax-exempt bonds. This will provide the private sector with access to lower-cost bond financing and should permit much greater private sector involvement and risk-taking in highway projects. Finally, the Act conserves the Transportation Infrastructure Finance and Innovation Act (TIFIA) program that was established by the previous appropriation Act. TIFIA provides direct loans, loan guarantees and lines of credit to states and local governments to finance transportation projects. Under SAFETEA-LU, the definition of eligible projects has been expanded to include private facilities providing public benefit for highway users, which again encourages the private sector to get involved.

Finally, the Federal Highway Administration plays an important role in promoting Public-Private Partnerships through a variety of workshops, conferences, and reports, including some reports directly addressed to Congress. From a regulation viewpoint, the FHWA has put into place Special Experimental Project No. 15 (SEP-15). SEP-15 is a new experimental process within FHWA to encourage Public-Private Partnership approaches to project delivery. All SEP-15 applications must come from a State Department of Transportation and provide a brief description of the project, the experimental techniques proposed, and the reasons why the experiment is sought. If the project is adopted and upon completion, the public-private sponsors will be responsible for submitting a report summarizing lessons learned and recommending regulatory changes to improve the delivery of the Federal Aid Highway program. As such, SEP-15 will allow the FHWA to identify current FHWA laws, regulations, and practices that inhibit greater use of Public-Private Partnerships and private investment in transportation projects.⁸⁹

⁸⁹ FHWA, *Manual for using Public-Private Partnerships on Highway Projects*, (accessed February 14, 2006); available from <http://www.fhwa.dot.gov/ppp/resources.htm>.

V. THE OPPOSITION TO PUBLIC-PRIVATE PARTNERSHIPS: CORRECTING MISCONCEPTIONS

The opposition to the involvement of the private sector in the provision of public services is rooted in a variety of fears on the consequences of the privatization of the economy. In France in particular, the government has traditionally been considered in charge of providing essential social services to its citizens and maintaining an infrastructure network favorable to economic growth. While the US is traditionally more open to the participation of the private sector in public services, oppositions to Public-Private Partnerships have also been voiced. In both cases, the opposition to the involvement of the private sector in the provision of public services can be traced back to misconceptions about the way PPPs are formed and how they work. As a result, it is crucial to correct those misconceptions and show that the opposition to Public-Private Partnerships can easily be addressed.

A. PUBLIC-PRIVATE PARTNERSHIPS DO NOT LEAD TO THE PRIVATIZATION OF PUBLIC ASSETS

1. Public-Private Partnerships: between outsourcing and privatization

This paper has already highlighted that Public-Private Partnerships are not a full-fledged privatization of governments' assets. There is inevitably some confusion on defining PPPs as they include a wide range of possibilities but it is possible to situate them between outsourcing and privatization. The table below summarizes the whole range of potential private sector involvement in the provision of public services.

	Operation and Maintenance	Capital Investment	Commercial risk	Ownership	Duration of contract
Direct Administration	Public	Public	Public	Public	No contract
Outsourcing	Public/Private	Public	Public	Public	1 to 2 years
Management Contract	Private	Public	Public	Public	3 to 5 years
Leasing	Private	Public/Private	Public/Private	Public	8 to 15 years
Concession	Private	Private	Private	Public	20 years +
BOT	Private	Private	Private	Private/Public	20 years +
Full Privatization	Private	Private	Private	Private	Unlimited

Outsourcing is on the lower end of the involvement of the private sector in the provision of public services. Indeed outsourcing is “the contracting out to private sector firms for the supplying of government goods or services while the public entity remains fully responsible for their provision.”⁹⁰ At the other hand of the spectrum, privatization is the shifting of whole functions and responsibilities from a public entity to a private firm. With privatization, the ownership, management, financing, operation, indeed all aspects of the facility, are handed over to the private sector in perpetuity. The concession model lies precisely in between those two extremes. “PPPs are contractual arrangements where public and private entities share goals, pool resources and divide responsibilities to achieve common as well as independent objectives.”⁹¹ With a PPP, ownership eventually returns to the public sector. In sum, the three approaches fundamentally differ in the level of risk-sharing that exists between the public and the private entity.

⁹⁰ HDR, *Creating Effective Public-Private Partnerships for buildings and infrastructure in today's economic environment* (2005), 1.

⁹¹ *Ibid.*, 1.

2. *Public-Private Partnerships or the government in its most traditional role*

Based on the above description of the repartition of responsibilities and risks between the public and private entities, it is reasonable to go a step further and argue that PPPs actually allow the government to fulfill its most traditional role. In a study from the French Ministry of Public Works, Transport and Housing, the authors explain:

By relieving the public authority of its role of service operator, the Public-Private Partnership gives the authority the opportunity to pursue its regulatory mission exclusively, which may consist of more accurately identifying public service demands and their corresponding costs. In this manner, the authority is in a position to effectively assess the optimal level of service provision desired by society, along with the associated cost, in order to reach an appropriate tradeoff between economic and social efficiency.⁹²

In sum Public-Private Partnerships refocus the government on its quintessential regulatory mission. The government thus is able to promote efficient demand-oriented services of better quality while concentrating its resources on social welfare issues.

B. PUBLIC EMPLOYEES ARE A VALUABLE ASSET TO PRIVATE SECTOR OPERATORS

1. *Statistics do not validate the hypothesis of massive job losses*

As would be expected, public employees unions are among the harshest critics of Public-Private Partnerships and argue that the shifting of traditional government functions to private companies inevitably result in significant numbers of public employees losing their jobs. The National Council for Public-Private Partnerships explains that by any statistical measure, those massive job losses simply have not happened. In a 2001 report, the US Labor Department examined Partnerships in 34 cities and counties and found that virtually all affected public

⁹² Jean-Yves Perrot and Gautier Chatelus, eds., *Financing of major infrastructure and public service projects, Lessons from French experience throughout the world* (Paris: Presses Ponts et Chaussées, 2000), 23.

employees were either hired by private contractors or transferred to other government positions.⁹³

There are two main explanations for the retention of public employees in the development of Public-Private Partnerships that will now be discussed successively.

2. *Public employees offer significant know-how to private operators*

The public employees are usually hired by the private company to take advantage of their institutional knowledge and expertise. As a result, in the cases where PPPs have led to reductions in public employees, this has mainly happened through attrition rather than layoffs. Indeed even if most concessionaires are likely to want the freedom to hire their own workers, former employees of the state toll authority will have advantages in getting hired.

3. *The protection of public employees by the concession agreement*

Moreover, the National Council for PPPs explains that most concession contracts call for downsizing only through attrition, and the assumption of the public payroll at salaries and benefits that are comparable to those that existed in the public sector before the takeover.⁹⁴ In fact the public sector has the power to protect the futures of public employees when the private sector would be unlikely to retain them. “Increasingly, public officials are sharing information with each other about how to structure effective Partnerships, with the result being officials who work harder to ensure their employees retain equal or better compensation and benefits packages.”⁹⁵ Sophisticated requests for proposals can outline a city’s expectations for how employees are to be transitioned, often including a minimum period of time during which the entire staff must be retained. In any

⁹³ National Council for Public-Private Partnerships, *Critical choices: the debate over Public-Private Partnerships and what it means for America’s future* (Washington DC: NCPPP, September 2003), 12.

⁹⁴ David Seader, “The United States’ Experience with Outsourcing, Privatization and Public-Private Partnerships,” National Council for Public-Private Partnerships, 3.

⁹⁵ National Council for Public-Private Partnerships, *Critical choices: the debate over Public-Private Partnerships and what it means for America’s future* (Washington DC: NCPPP, September 2003), 12.

case, the argument that Public-Private Partnerships lead to job losses among public employees has to be dismissed and cannot be used to oppose PPPs.

C. THE UNFOUNDED FEAR OF UNREASONABLE TOLL INCREASES

The third most common argument used to oppose Public-Private Partnerships is that when the private sector is involved in the provision of public services, citizens will end up paying more. In the case of toll roads, motorists fear that the private operator will proceed to unreasonable toll increases in order to augment its profits. This fear is for many reasons unfounded.

1. Rate-setting controls in the concession agreement

As has already been discussed, toll rate increases are typically addressed in the concession agreement between the public and private entity. The most common concession agreements allow increased toll rates on an annual basis, typically in line with inflation. European and Australian toll franchises generally provide for tolls to be adjusted upwards on an annual basis by a formula contained in the contract documents, usually related to some national statistical index such as the Consumer Price Index.

Clearly private investors are happiest when no controls at all exist on their ability to raise tolls. In addition, one must admit that wherever variable-rate tolls are to be used as a tool to ensure smooth traffic flow, pricing freedom is essential. The French A86 West in the vicinity of Paris is an example of variable pricing. Toll rate ceilings were established during the concession negotiations and are set for the first five years. After that, the private company Cofiroute may make its case for an increase to a government adjudicator based on the trend of traffic versus capacity.⁹⁶ Hence Cofiroute would need a high volume-to-capacity ratio in order to be able to raise tolls. This proves

⁹⁶ Robert Poole, Peter Samuel, and Brian Chase, *Building for the future: Easing California's transportation crisis with tolls and PPPs* (Los Angeles, CA: Reason Foundation, January 2005), 43.

that limits will be established on the ability of private operators to raise tolls. Furthermore, since increases will be warranted by deteriorating traffic conditions, motorists can be reassured that they will be used toward upgrading or expanding the network as it is in the operator's best interest to guarantee the highest level of service to motorists.

2. The power of competition on rate-setting

The economic concept of elasticity of demand highlights that competition alone will keep toll rate increases under check. Robert Poole from Reason Foundation summarizes this argument nicely:

Just because the ceilings in the agreement permit a toll of \$X says nothing about whether anyone, let alone a revenue-maximizing fraction of potential customers, would be willing to pay that toll. In fact, Chicago Skyway faces significant free competition, and the concession agreement contains no non-compete clause. The private operator is entirely at risk for traffic and revenue. In such circumstances, the only reason to include price caps in the concession agreement is for political cover. Competition in the highway market would suffice quite nicely to keep the Skyway toll rates at reasonable levels in the absence of any price caps.⁹⁷

As a result, some contracts are premised on the notion that no toll rate controls are needed since motorists will not be attracted to the road in sufficient numbers if the toll rates are too high, leaving market competition as the best price setter. This is the case of the M6 toll road in Birmingham England which has no contractual limits on toll rates. It does compete however with the free M6 to which it is connected and with many free local roads.

⁹⁷ Robert Poole, "Responding to critics of long-term toll road leasing," *Public Works Financing*, May 2006.

VI. THE WAY FORWARD FOR AMERICAN PUBLIC-PRIVATE PARTNERSHIPS IN HIGHWAY INFRASTRUCTURE PROVISION

If the numerous benefits of Public-Private Partnerships have been proven in France and more recently in the United States, this paper has also demonstrated that they were not a panacea to any government's funding needs. More specifically, the United States presents a particularly favorable ground for Public-Private Partnerships in the development of existing toll roads. The future of Partnerships in the US will nonetheless depend on a continuing favorable regulatory trend, their combination with other financing mechanisms, and sufficient political will.

A. A CALL FOR MORE FAVORABLE REGULATORY CHANGES

According to the US Department of Transportation report on Public-Private Partnerships, at the end of 2004 only 21 states had legal authority to allow private sector participation in highway projects. In addition, legislation places significant limitations on their ability to implement these Partnerships in all but a few of these states. Twenty-nine states are unable to enter into Public-Private Partnerships because they lack the statutory authority to do so.⁹⁸ As a result, a case can clearly be made for the creation and distribution of a model legislation that demonstrates the provisions required for a clear, flexible, and functional PPP program statute.

Moreover, even among US states with the legal authority to engage in Public-Private Partnerships for transportation projects, several passed enabling legislation years ago and have yet to implement a single PPP project. As was already mentioned, Virginia was one of the first states to enact a comprehensive Public-Private Partnerships law. The Public-Private Transportation Act of 1995 enables Virginia to enter into contracts authorizing private entities to acquire, construct, improve, maintain, and operate transportation facilities; it could serve as the model legislation

⁹⁸ US Department of Transportation, *Report to Congress on Public-Private Partnerships*, December 2004, 75.

referenced to above. The Act is accompanied by implementation guidelines that state the intent of the legislation in the following words: “encourage public/private ventures for transportation facilities which may result in the availability of facilities in a more timely or less costly fashion and facilitate to the greatest extent possible the federal and private pooling of funding mechanisms to the end that transportation financing be expanded and accelerated and have the greatest possible flexibility in contracting between private and public entities.”⁹⁹ This leads directly to the second condition of successful Public-Private Partnerships in the future: the need to combine them with other funding mechanisms.

B. THE NEED TO COMBINE PUBLIC-PRIVATE PARTNERSHIPS WITH OTHER FINANCING MECHANISMS

If the traditional alternatives to infrastructure finance like bonds and taxes are stretched, a number of innovative financing mechanisms exist that the US can promote in combination with Public-Private Partnerships. Indeed Partnerships will be much more attractive to private sector partners if the public entity has committed funds to the realization of the project. Some of the public sector finance vehicles have already been mentioned but are reemphasized here as they will be crucial to the successful implementation of PPPs.

SAFETEA-LU has expanded the use of federal credit programs and state credit assistance. The two major federal credit programs are the Transportation Infrastructure Finance and Innovation Act (TIFIA) and Grant Anticipation Revenue Vehicles bonds (GRAVEE bonds). TIFIA was enacted in 1998 and is administered by the US Department of Transportation to provide federal credit assistance to major transportation programs. The program is intended to leverage federal resources and stimulate public and private investment by providing projects with supplemental or subordinated debt. TIFIA assistance can be provided through direct loans for construction and

⁹⁹ US Department of Transportation, *Report to Congress on Public-Private Partnerships*, December 2004, 76.

capital costs, loan guarantees for project investors, and standby lines of credit.¹⁰⁰ GRAVEE bonds are issued by states and backed by anticipated federal aid funding. They allow states to receive up-front capital for major projects. Future federal aid funds can be used to service the debt associated with the up-front costs on highways and can be used to make interest payments, retire principal, and pay any other costs associated with the bond issue.¹⁰¹ Finally at the state level, State Infrastructure Banks (SIB) are state or multi-state revolving loan funds that provide loans, credit assistance and enhancements, and other financial assistance for transportation projects. Those banks are established with initial seed capital from states and administrated by states. Revenue from borrowers eventually goes back to the SIB to help fund future projects.¹⁰²

In the European Union, the co-mingling of public and private funds has been a hallmark of infrastructure Partnerships, and the most successful PPPs have included European, national and private monies. The TIFIA program is very similar to the European Investment Bank's Trans-European Networks (TENs) investment facility. The TENs are large infrastructure networks of transport, energy and telecommunications underpinning the developmental and integration goals of the European Union. Those networks receive dedicated funding from the European Investment Bank to facilitate the economic and social integration of the Union, the free movement of people and goods, and the development of less favored EU areas. However, with only \$610 million worth of funding allocated to TIFIA from 2005 to 2009, it will only be able to leverage a fraction of the investment that the \$50 billion strong TENs investment facility will generate over the same approximate period.¹⁰³ French highway concessionaires have already benefited from these European co-financings.

¹⁰⁰ Matt Sundeen and James Reed, *Surface Transportation Funding, Options for States* (Washington, DC: National Conference of State Legislatures, 2006), 44.

¹⁰¹ *Ibid.*, 45.

¹⁰² *Ibid.*, 45.

¹⁰³ Benjamin Perez and James March, "Public-Private Partnerships and the Development of Transport Infrastructure: Trends on both sides of the Atlantic," Institute of Public Economics at the University of Alberta, August 2, 2006, 16.

C. WILL POLITICAL WILL BE SUFFICIENT?

Even if a favorable regulatory context exists for the development of Public-Private Partnerships and US laws provide for the possibility of combining PPPs with additional funding mechanisms, the successful development of Partnerships will remain subordinated to the political will existing at all levels of government to introduce the private sector in the provision of public services.

In the United States, the most prevalent impediment to political support for Public-Private Partnerships is the fact that they often lead to foreign investments. The debate over concessions with foreign-owned entities intensified in March 2006 when DP World, a company owned by the government of Dubai in the United Arab Emirates, purchased the Peninsular and Oriental Steam Navigation Company (P&O) of the United Kingdom. The fourth largest ports operator in the world, P&O operated major US port facilities in New York, New Jersey, Philadelphia, Baltimore, New Orleans, and Miami. After the deal was secured, the arrangement was reviewed by the Committee on Foreign Investment headed by the US Treasury Department and including the Departments of State, Commerce, and Homeland Security. Even though it was given the green light, Democratic and Republican members of Congress soon expressed concern over the potential negative impact the deal would have on port security. President Bush threatened to veto any legislation passed by Congress to block the deal, and after much debate on Capitol Hill, Dubai Ports World eventually sold P&O's American operations to American International Group's asset management division for an undisclosed sum.

If toll roads are unlikely to be as politically sensitive as ports where tons of foreign goods enter the United States daily, or tunnels and bridges which typically do not have alternative routes, the leasing of the Indiana Toll Road proved difficult. The House passed the measure 51-48 and the Senate passed it 31-19 just before the midnight deadline. The South Bend Tribune explains that the

opposition turned for months on several issues raised by the bill and the lease. This included the length of the lease, foreign operation of an irreplaceable state asset and the operator's right to boost tolls a minimum of 2% per year after 2016.¹⁰⁴

Following the P&O debacle, a number of bills have been introduced in different US states seeking to put restrictions on concessions with foreign-owned entities. In an article in the *International Financial Law Review*, the authors highlight the significance of the issue. "This issue takes on particular significance given that, not only did Australian Macquarie and Spanish Cintra win both the Chicago Skyway and Indiana Toll Road tenders, but in each case they outbid all rivals by a wide margin. One would expect state and local governments to be reluctant to chill a heated bidding process by removing the hottest contenders. It is not surprising, therefore, that a reading of the different bill proposals can leave the impression that it is more interested in mollifying political constituencies than restricting foreign participation in public infrastructure."¹⁰⁵ In addition, the lack of experienced toll operators in the US will leave state and local governments with little choice if they want to be able to both finance and operate their road networks.

CONCLUSION

In both France and the United States, the participation of the private sector in the provision of infrastructure is increasing in the face of similar budget challenges. The United States in particular faces pressing needs to improve its road network if it is to maintain economic growth and security. In most countries around the world, government budgets are increasingly constrained and traditional alternatives for the financing of infrastructure are limited. In recent decades, the century-old concept of Public-Private Partnership has reemerged as a potential solution to infrastructure

¹⁰⁴ "Indiana Toll Road lease approved," *South Bend Tribune*, March 15, 2006.

¹⁰⁵ Elena Millerman, David Reynolds, Robert Gibbons, and Ivan Mattei, "US projects look to private finance," *International Financial Law Review*, Vol. 25, Issue 5 (May 2006):36-37.

financing. PPPs are contractual agreements formed between a public agency and private sector entity that allow for greater private sector participation in the delivery of transportation projects. The concept has been widely used in France since the 1789 revolution under the model of concessions.

The French concession model emerged in a context of relatively strong resistance to the involvement of the private sector in public services provision and a centralized government system. This context would not seem to be particularly adapted to the development of Public-Private Partnerships. In comparison, this paper has demonstrated that the United States offers a more favorable ground for Public-Private Partnerships. The private sector has traditionally been involved in the US economy and a recent trend has emerged towards market-based solutions in the provision of road infrastructure. The US market for infrastructure exhibits strong growth and is extremely competitive which is favorable to the development of PPPs. Finally, a federal system presents certain advantages in the implementation of Partnerships, together with increasing favorable regulations voted at the federal and state level.

The French experience also reveals that PPPs are not adapted to the provision of any public service. France has successfully applied the concession model in the operation of its toll roads. In France, and more recently in the US, the PPP model has increased and improved the type of financing available for the operation of infrastructure projects. Moreover, through an optimal risk allocation and a better alignment of incentives, Public-Private Partnership projects are better executed. Finally, PPPs have resulted in better operated toll roads, thanks to the expertise brought by the private sector and stringent performance requirements included in the concession agreement.

Existing toll roads, rather than greenfield investments, are particularly well-suited for the development of PPPs. Indeed the attraction of private investment requires that the private entity be easily remunerated for taking a measured risk in a sufficiently robust infrastructure project.

Existing toll roads exhibit these necessary characteristics and have been at the center of an investing frenzy in infrastructure assets. In October 2006, a recurring theme at the US Infrastructure Investing Summit was that infrastructure is being touted as a new, long-term, inflation-linked asset class that sits alongside private equity and real estate and offers hard assets and visible long-term earning streams.¹⁰⁶ The summit also recognized the “Foreign Feeding Frenzy in the US Market” where foreign investors are seeing value in the US market that US investors as of yet have been unable to see and are paying a premium for US infrastructure assets.

This leaves the United States with the challenge of addressing the political resistance that exists against allowing the operation of strategic infrastructure assets by foreign companies. As of today, international toll road concessionaires such as Macquarie and Cintra are dominating the US market but a domestic industry will certainly grow. Several institutions have raised infrastructure funds and are ready to put money to work. According to estimates from the US Bureau of economic analysis, US local and state governments oversee about \$1.7 trillion of roadways nationwide. Less than 4% of the 5,244 miles of US toll roads are now privately run, a figure that may jump to 32% based on the number of deals being considered.¹⁰⁷ Murray Bleach, Macquarie’s head of infrastructure banking in North America, estimates that an additional \$50 billion of US toll-road projects will be won by private developers in the next three to five years.¹⁰⁸

If the Public-Private Partnerships market is to continue its development in the United States, common misconceptions about the concept will have to be addressed through increased communication to the American public. Moreover, additional regulatory changes will be needed to encourage the use of the PPP model. Still, Public-Private Partnerships alone will be unable to

¹⁰⁶ Collaboratory for Research on global projects at Stanford University, Global Projects Blog, October 30, 2006 (accessed February 17, 2007); available from

http://crgp.stanford.edu/news/global_projects_trip_report_us_infrastructure_investing_summit_new_york.html

¹⁰⁷ Eddie Baeb and Justin Baer, “Goldman’s conflicts of interest convulse Chicago,” *Bloomberg*, July 17, 2006.

¹⁰⁸ *Ibid.*

satisfy US infrastructure funding needs. PPP agreements will have to be combined with other financing mechanisms to guarantee the involvement of the private sector and expand the availability of funds. SAFETEA-LU, the latest US transportation Act, has expanded the use of federal credit programs and state credit assistance for the realization of infrastructure projects. As such, it has laid the ground for an increasing participation of the private sector in infrastructure funding and Public-Private Partnerships could become the preferred way of providing for US transportation infrastructure needs just like the concession model is in France.

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