WHY DO U.S. STATES ADOPT PUBLIC-PRIVATE PARTNERSHIP ENABLING LEGISLATION?[1]

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ABSTRACT

Many U.S. states are facing severe budgetary shortfalls. At the same time, there is unprecedented demand for transportation infrastructure construction and renovation. States are turning to private firms for assistance in financing their transportation infrastructure. As of mid-2011, twenty-nine states had legislation that would better enable them to utilize public-private partnerships (PPPs) to help finance the construction of new transportation facilities and the renovation of existing facilities, such as roads, bridges, and tunnels. This legislation includes provisions regarding unsolicited PPP proposals, prior legislative approval of contracts, and the mixing of public and private funds, among others. Using key elements of PPP enabling laws, we develop an index that measures the degree to which a state's law facilitates private sector investment in a state. We explore reasons why states pass such laws, and why some states pass legislation that is more encouraging of private sector investment. We consider demand side, supply side, and political drivers of passage. We find that political sentiment, unionization rates, and traffic congestion are important predictors of both the passage of PPP legislation and of its favorability to private investment. We also find evidence that fiscal stress leads states to adopt PPP enabling legislation and little indication that traditional public finance variables are important.

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I. Introduction

A confluence of forces is placing severe stress on U.S. transportation infrastructure: rising traffic demand, aging facilities, and exhausted state and local transportation budgets. Total vehicle miles traveled (VMT) in the United States increased by 347 percent between 1957 and 2003, while total highway mileage increased only 15 percent.[2] Unsurprisingly, traffic congestion has also increased. According to the Texas Transportation Institute's 2010 *Urban Mobility Report*, annual hours of delay per peak-time traveler increased 136 percent between 1982 and 2009 in the nation's fourteen largest urban areas. A typical peak-period commuter in the Washington, DC metropolitan area, for example, can now expect to experience an average of 70 hours of delay per year, or almost three full days.[3] Vehicle emissions also increase significantly during congested periods, harming the environment. One estimate put the annual overall cost of congestion to the economy at $168 billion.[4] Additionally, many U.S. industries utilize just-in-time inventory techniques, which rely on moving goods long distances quickly.

Meanwhile, the country's transportation infrastructure is aging and deteriorating. According to the American Society of Civil Engineers, in 2009 about one in four bridges in the United States were structurally deficient or functionally obsolete and about one-third of the country's major roads were in poor or mediocre condition. In addition, traditional funding sources for transportation infrastructure construction and renovation are inadequate. This is due in part to reliance on gasoline and diesel taxes for infrastructure funding. Both inflation and the use of more fuel efficient vehicles are reducing the purchasing power of fuel tax revenues.

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[2] See John W. Fischer, "From Interstates to an Uncharted Future," in Wendell Cox, Alan Pisarski, and Ronald D. Utt, eds, *21st Century Highways: Innovative Solutions to America's Transportation Needs* (2005).
[3] David Schrank, Tim Lomax, and Shawn Turner, *Urban Mobility Report 2010* (2010).
[4] See Jack Wells, Chief Economist, U.S. Department of Transportation, "The Role of Transportation in the U.S. Economy", presentation to the National Surface Transportation Policy and Revenue Study Commission, June 26, 2006.

Moreover, other national policy goals, such as higher corporate average fuel economy (CAFE) standards, conflict directly with a fuel-tax-based funding approach.

Government officials are searching for alternatives to traditional methods of delivering and renovating transportation facilities. One important approach, particularly at the state level, is to enhance the role of private designers, construction firms, and investors through the use of public-private partnerships, or PPPs. PPPs have been utilized to deliver infrastructure projects in many foreign countries, including Australia,[5] Canada,[6] the United Kingdom,[7] France, Italy, Portugal, and Spain.[8]

The use of PPPs in the United States, however, is hindered by a lack of enabling legislation at the state level, where most PPPs occur.[9] From the private sector's perspective, it is risky to direct time, money, and effort to developing infrastructure projects that ultimately fail to receive the proper authorization. States can thus facilitate PPPs by passing enabling legislation permitting their use. In addition to removing uncertainty, enabling legislation provides a framework for contracting, promotes or prevents PPPs, and affects the risks involved for the public and private sponsors.[10]

Despite the importance of PPP enabling laws, there has been little empirical examination of them. In this paper, we examine the reasons why states choose to encourage private

[5] See, for example, Allen Consulting Group, "Performance of PPPs and Traditional Procurement in Australia" (2007); and David Czerwinski and R. Richard Geddes, "Policy Issues in U.S. Transportation Public-Private Partnerships: Lessons from Australia" (Mineta Transportation Institute Report 2010).
[6] See Aidan R. Vining and Anthony E. Boardman, "Public-private partnerships in Canada: Theory and evidence", 51 *Canadian Public Administration* 9 (2008).
[7] See Federal Highway Administration, "Public-Private Partnerships for Highway Infrastructure: Capitalizing on International Experience" (2009).
[8] See Daniel Albalate, Germa Bel, and Xavier Fageda, "Privatization and Regulatory Reform of Toll Motorways in Europe", 22 *Governance* 295 (2009).
[9] See Edward Fishman, "Legal Research Digest 51: Major Legal Issues for Highway Public-Private Partnerships," *National Cooperative Highway Research Program* (2009); and William W. Reinhardt, "The Role of Private Investment in Meeting U.S. Transportation Infrastructure Needs, *Public Works Financing*, May 2011.
[10] Hiroyuki Iseki, Jeanette Eckert, Kansai Uchida, Ryan Dunn, and Brian D. Taylor, "Task B-2: Status of Legislative Settings to Facilitate Public Private Partnerships in the U.S.," *California PATH Research Report* (2009).

investment in transportation infrastructure by enacting PPP enabling legislation and, of the states that pass laws, how favorable their law is to private participation. In order to test the favorability of PPP legislation to private investment, we use the actual content of the laws to develop what we term the PPP law's "favorability index." Rather than weighting each element of the law equally, we conducted a detailed survey of PPP experts in the United States that allows us to assign weights to various provisions.

We consider alternative theories of the enactment and favorableness to private participation of these laws. One theory suggests that states are responsive to the wishes of motorists — the customers – of transportation facilities. Another theory suggests that states are responding to a supply-side problem, which is the lack of alternative (i.e. government) sources of funds for transportation infrastructure, and are thus forced to turn to the private sector. The third posits that laws encouraging private participation are a result of a state's political predisposition, as well as non-customer pressure groups, that may oppose or support private investment, such as unions.

We use logistic regression to explore the effects of those variables on the probability that a state will enact a PPP enabling law, and ordinary least squares regression to examine how favorable a PPP enabling law is to private investment. Using a variety of samples and specifications, we find that congestion levels and a state's political disposition affect both the probability of act adoption, as well as how favorable the law is to private investment. Unionization rates reduce both measures. We also find evidence that additional federal highway funding reduces the probability of enacting a PPP law, but not its favorability once it is passed. We find some evidence that supply-side factors, such as a state's debt per capita, leads states to adopt PPP enabling legislation.

In the next section we describe public-private partnerships in more detail. Section III discusses PPP enabling laws and why they are important in facilitating private investment. Section IV discusses our data and predictions; Section V discusses our results, and section VI concludes.

II. Public-Private Partnerships

Public project sponsors have long relied on private contractors who win competitive bids to design and construct transportation projects. In the PPP approach, the private role is expanded to maintaining, operating, and financing the project. The expanded private role is an extension of the traditional approach, but also differs in that private investors bear risks that would otherwise be borne by taxpayers, such as the risk that the expected amount of traffic does not materialize if the project involves constructing a new facility (called a greenfield project). Private participation can also be used in the management, operation, and renovation of an existing facility (called a brownfield project).

If a brownfield PPP is used on an existing toll road, for example, the public sponsor can lease it to a private partner under a concession contract. The sponsor can specify in the contract how the facility will be renovated, maintained, and expanded if necessary. The contract can also state how tolls will be set, as well as the length of the lease. Other performance metrics can be included, such as safety standards and pavement quality, with transparent penalties and rewards. Once contractual details are finalized, the public sponsor can accept competing bids on the basis of an upfront concession fee. The fee can be used to undertake other transportation projects in the state, as was the case for the Indiana Toll Road lease.[11]

[11] See the Appendix for a discussion of several recent transportation PPPs.

Investors have demonstrated their willingness to invest in U.S. transportation assets. In 2005, investors paid $3.8 billion for leasing the Indiana Toll Road, and $1.8 billion for leasing the Chicago Skyway, which was about 70 percent of the City's annual budget at the time. The Illinois State Board of Investment, for example, announced plans to invest $600 million to $650 million, or 5 percent of its portfolio, in infrastructure funds over the next three years.[12] Twenty-four states and the District of Columbia have used PPPs to help finance and build at least 96 transportation projects worth a total of $54.3 billion. Private investment in U.S. transportation infrastructure is growing, with many of those projects being signed since 2008. PPPs accounted for about 11 percent of all national capital investment in new highway capacity in 2011. From 2001 through 2010, five states on average started a new transportation PPP each year.[13] While PPPs are not exclusive to highway (or even transportation) projects, we focus only on PPP enabling legislation that authorizes investment in this sector.[14]

III. Public-Private Partnership Enabling Laws

PPP enabling laws play a key role in the PPP process and are an important prerequisite to private investment. Through April 1, 2011 twenty-nine states and Puerto Rico had legislation giving explicit authority to the state, typically through an agent (such as the state Department of Transportation), to enter into PPP agreements. Figure 1 is a map of all states with significant PPP statutes, as of 2008. One can clearly see a strong regional element to adoption, a point which we return to later.

[12] Emily Thorton, "Roads to Riches," *Bloomberg Businessweek*, May 7, 2007, http://www.businessweek.com/magazine/content/07_19/b4033001.htm (accessed May 27, 2011).
[13] Reinhardt (cited in note 9).
[14] For studies of PPPs in other sectors see, e.g. Daniel Albalate, Germa Bel, and R. Richard Geddes, "The Determinants of Public-Private Partnership Contractual Choice in the United States", mimeo, University of Barcelona, Faculty of Economics and Business (2011).

(Insert Figure 1 about here)

A state that lacks PPP enabling legislation creates an unstable political environment for infrastructure investment. Legislative authority is almost always necessary in order for a state to use an alternative procurement process, such as a PPP, (insert footnote saying why legislation might not be necessary), and having that authority in place ex-ante significantly reduces political risk for the private sector. The lack of authorizing legislation prior to the initiation of the PPP procurement process inhibits private investment, as is illustrated by the failed attempt to lease the Pennsylvania Turnpike.

In May 2008 the state of Pennsylvania announced that a partnership of Citi Infrastructure Investors and Spanish Abertis Infraestructuras was chosen as concessionaire in a 75-year lease of the Pennsylvania Turnpike with a winning bid of $12.8 billion. The legislature allowed the bid to expire, however, before it passed the requisite enabling legislation.[15] While the costs of the proposal and bidding process were not great when compared with the size of the bid, there were significant opportunity costs associated with spending time and money on a project that ultimately yielded no value for the firms involved, in addition to the opportunity costs associated with holding commitments on the $12.8 billion that prevented it from being put to use while the firms waited for enabling legislation to pass the legislature. John Durbin, former executive director of the Pennsylvania Turnpike Commission, notes that "[t]here will not be another consortium that will proceed in any state where they have to put their bids in first and then gain legislative approval to lease the asset."[16]

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[15] See Peter Samuel, "Abertis-Citi likely to announce end of bid for Penn Pike early next week – Turnpike Commission wins," *TOLLROADSnews*, September 27, 2008 (available at http://www.tollroadsnews.com/node/3757, accessed December 28, 2010).

[16] See Pew Center on the States, "Driven by Dollars: What States Should Know When Considering Public-Private Partnerships to Fund Transportation," (available at: http://www.pewtrusts.org/uploadedFiles/wwwpewtrustsorg/Reports/State_policy/PA_Turnpike_FINAL_WEB.pdf., accessed June 2, 2011). Regarding the Pennsylvania Turnpike lease, one PPP expert notes the deterring effect of

In addition to reducing uncertainty, PPP legislation provides the foundation for contracting between the public and private sectors, and affects the risks involved for both parties.[17] PPP enabling legislation can reduce the cost of transacting for private partners by outlining basic contractual terms. As a result, there is only negotiation around certain provisions. In contrast, a lack of legislation can force the parties to negotiate separately over each provision, which increases costs for both parties. In addition, fewer contingencies need to be accounted for where there is a strong institutional commitment to PPPs, which can be signaled through an enabling statute. As a result, private partners will be more comfortable negotiating fewer contingencies where strong enabling legislation exists.

Enabling legislation also affects the risks involved for both the public and private sectors. As noted, political risk is a significant risk to private sector partners. Moreover, legislative approval for individual PPP agreements is a large disincentive to private sector investment.[18]

Enabling statutes can also promote PPPs in a number of ways. For example, some states allow for PPPs to be utilized on a broad range of transportation facilities, such as roads, airports, railways, and ports, while other states limit the type of transportation infrastructure that is eligible. Similarly, enabling legislation can promote PPPs by exempting the PPP procurement process from bureaucratic procurement laws, and by allowing the combination of public and private sector money. Specific legislative conditions can make PPPs more or less attractive to the private sector, which forms the basis for our PPP legislation "favorability index," where we

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such political risk on private investment: "As Karl Reichelt of the construction company Skanska notes, global firms are willing to assume all kinds of technical and other risks, but they deeply fear political risk—the possibility that their clients could do what Pennsylvania did two years ago. The state decided to privatize its turnpike, invited bidders to spend millions of dollars preparing bids for a long-term contract, and then dropped the whole idea at the last minute." See Nicole Gelinas, "The Tappan Zee Is Falling Down," *City Journal*, Spring 2011, Vol. 21, No. 2 (available at: http://www.city-journal.org/2011/21_2_tappan-zee-bridge.html, accessed May 31, 2011).

[17] Iseki et al. (cited in Note 10).

[18] See Jaime Rall, James B. Reed, and Nicholas J. Farber, "Public-Private Partnerships for Transportation: A Toolkit for Legislators," *National Conference of State Legislatures* (2010). Several states nevertheless have provisions in their enabling legislation requiring legislative approval.

quantify how attractive each state's law is to potential private investors. We discuss the favorability index in more detail in the next section.

Commentators have suggested that a lack of enabling legislation at the state level is one of the biggest impediments to PPPs in the United States,[19] and that PPP legislation is an important driver of private sector involvement in U.S. transportation infrastructure.[20] Some commentators argue that PPP transportation projects are going to the states that have workable legislation, and have created a political environment that embraces and welcomes private sector participation.[21] Moreover, preliminary evidence suggests that states with the most attractive models of PPP legislation are receiving the greatest attention from the private sector. Sixty – five percent of PPP projects since 1989 occurred in eight states – Florida, California, Texas, Colorado, Virginia, Minnesota, North Carolina, and South Carolina. All eight of these states have PPP enabling legislation, and the latest adopter, North Carolina, passed legislation in 2000.[22]

Overall, PPP enabling laws are important in injecting private sector capital and incentives into infrastructure provision and operation. When properly designed, they reduce uncertainty, establish pre-set guidelines, and lower the transaction costs associated with public-private partnerships.

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[19] See Fishman (cited in Note 9) at 23.

[20] In order to test for a simple correlation between the passage of PPP laws and PPP projects, we ran a univariate regression of the number of PPP projects in a state since 1988 on whether or not that state passed a PPP statute during the timeframe 1988 – 2010, which yields a dataset with 50 observations. We find that having passed a PPP statute increases the number of completed PPP projects by 0.83 projects, relative to states that have not passed laws (the t-statistic is 2.22). The average contract amount is $931 million, which suggests that states with PPP laws bring in, on average, $773 million more in private investment than states without laws. These results should be interpreted with caution, however. First, many PPP contracts are a combination of public and private sector money, so the true number is significantly less than $773 million. Second, the number of transportation PPP projects completed in the U.S. since 1988 (excluding design-build projects) is only 25 – a rather small number.

[21] Leonard Gilroy, "Modernizing and Expanding Pennsylvania's Transportation Infrastructure through Public-Private Partnerships," (Testimony before the Pennsylvania House Republican Policy Committee, available at: http://reason.org/files/testimony_pennsylvania_transportation_public_private_partnerships.pdf., accessed May 31, 2011).

[22] See Reinhardt (cited in Note 9).

IV. Data and Predictions

We utilized the Federal Highway Administration (FHWA) website[23] and several other sources[24] to determine which states currently have PPP enabling laws in place. All information was verified based on the actual state PPP statutes and traced back over time using LexisNexis. We were thus able to develop a unique dataset that indicates when a state first passed a PPP enabling law. Our study time frame begins in 1988 with the passage of Virginia's Highway Corporation Act, which is the first modern PPP law, and ends in 2008, which is the last year for which we have complete data. Although 29 states have PPP enabling laws as of this writing, one of those states (Massachusetts) passed a law in 2009, two states (Illinois and Maine) passed laws in 2010, and one state (Ohio) passed a law in 2011. As a result, only 25 states are indicated as having PPP laws in our data.[25]

The Favorability Index of PPP Legislation

As noted in the Introduction, this paper seeks to address two questions in particular: (1) what are the key factors that are important in determining whether or not a state will pass a PPP enabling law, and (2) what are the key factors in determining the favorability of that law to private investment?

In order to answer (2) we use the actual contents of the PPP laws to develop a PPP legislation favorability index. The principle behind this index is that some elements of a PPP enabling statute are enticing to potential private investors, while other elements can be quite

[23] Federal Highway Administration, "State P3 Legislation," (available at: http://www.fhwa.dot.gov/ipd/p3/state_legislation/index.htm, accessed June 2, 2011).
[24] See Michael E. Pikiel, Jr. and Lillian Plata, "A Survey of PPP Legislation Across the United States," 1 *Global Infrastructure* 52 (2008); and Rall, Reed and Farber (cited in Note 18).
[25] Twenty-six states are documented as having passed a PPP law during the timeframe 1988 – 2008 because New Jersey passed a law that expired in 2003.

discouraging. Our first step was to review the literature on PPP enabling legislation to determine which elements to look for when reading the laws.[26]

Two documents primarily guided our thinking about the types of provisions that should be included in the PPP law favorability index. In a 1993 policy brief, Robert Poole of the Reason Foundation cites a number of elements that will discourage private investment if included in PPP legislation. Among them are: (1) requiring legislative approval of individual PPP contracts; (2) prohibiting non-compete agreements; (3) not allowing the use of state and local government funds, and (4) subjecting the private sector to state procurement rules.[27] While legislative approval of PPP agreements can help protect the public interest,[28] these clauses add an element of political risk that is a strong disincentive to private investment.[29] Similarly, PPP legislation that prohibits PPP contracts from containing non-competition clauses is unfavorable from the private sector's perspective.

The second document, a 2005 report prepared by Karen Hedlund and Brian Chase, two attorneys with the law firm Nossaman LLP, is a list of twenty-eight "key elements" that should be addressed in PPP legislation.[30] Many of the provisions listed are similar to those discussed in Poole's previous article. The authors note the importance of procurement exemptions, as well as

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[26] Most of the work in the area of PPP enabling legislation comes from so-called "secondary literature," which includes government reports, working papers, white papers, etc., but does not include peer-reviewed journals.
[27] Robert W. Poole, "How to Enable Private Toll Road Development," *Reason Foundation*, 1993 (available at: http://reason.org/files/35ea7f9f3eef937371c6ce7c4db95270.pdf, accessed April 1, 2011).
[28] See, for example, Phineas Baxandall, "Private Roads, Public Costs," *Public Interest Research Group*, 2009 (available at: http://www.uspirg.org/home/reports/report-archives/transportation/transportation2/private-roads-public-costs-the-facts-about-toll-road-privatization-and-how-to-protect-the-public#3pG2XMKXeIYaFFuxlxSFiw, accessed May 8, 2011).
[29] Regarding the disincentive to invest that legislative approval requirements create, one commentator claims that "In those states whose PPP enabling acts required legislative approval of negotiated deals no such deals were ever proposed." See Robert W. Poole, "No Toll Czar: States, Not Feds, Should Protect the Public Interest in Public-Private Partnership Deals," Reason Foundation, October 26, 2009 (available at: http://reason.org/blog/show/no-toll-czar-states-not-feds-s, accessed November 25, 2010).
[30] Nossaman LLP, "Overview of Key Elements and Sample Provisions State PPP Enabling Legislation for Highway Projects," 2005 (available at: http://www.fhwa.dot.gov/ipd/pdfs/legis_key_elements.pdf, accessed May 31, 2011).

the ability to combine public and private funds. While procurement rules exist to ensure fairness in the awarding of government contracts, such burdensome "red-tape" can be a disincentive to private investment, and allowing the combination of public and private sector funds greatly expands the private sector's investment opportunities.[31] Other key elements are attractive from the perspective of the private investor. Protecting the confidentiality of trade secrets contained in PPP proposals can help prevent free riding and encourage bids[32], and allowing the public sector sponsor to receive unsolicited proposals encourages private sector creativity.

Using these two sources, among others,[33] we selected thirteen elements that would compose our PPP legislation favorability index (see Table 1). To generate weights we conducted a survey of PPP experts that asked respondents to rank each provision on a 5-point scale ranging from "very discouraging" to "very encouraging" of private investment. We then assigned each rank an integer value corresponding to:

0 = Very discouraging of private investment
1 = Somewhat discouraging of private investment
2 = No effect on private investment
3 = Somewhat encouraging of private investment
4 = Very encouraging of private investment

and calculated the mean value for each provision.[34] Next, we divided the mean value by four to produce a favorability score for each provision between 0 and 1, where a value closer to 1 indicates the provision is more favorable to private investment. The second column of Table 1 displays the survey-weighted favorability scores for each provision; the most favorable provision to private investors allows public and private sector funds to be combined on a PPP project,

[31] See Nossaman LLP (cited in Note 30), and Iseki et al. (cited in Note 10).
[32] See Iseki et al. (cited in Note 10). For a critique of confidentiality in the PPP procurement process see Matt Siemiatycki, "What's the Secret? Confidentiality in Planning Infrastructure Using Public/Private Partnerships," 73 *Journal of the American Planning Association* 388 (2007).
[33] Fishman (cited in Note 9); Iseki et al. (cited in Note 10); Rall, Reed, and Farber (cited in Note 18), and Gilroy (cited in Note 21).
[34] Fifteen respondents answered the survey.

while the least favorable provision allows the legislature (or another public body) to reject a PPP agreement.

(Insert Table 1 about here)

We next read each law in order to determine which of the 13 provisions listed in Table 1 each law contained. We then summed the survey-weighted favorability scores for each law, and divided the total by 13 to generate a favorability index for each law between 0 and 1. States without laws received favorability index scores of zero. A particular advantage of this variable is that it is able to measure the favorability of PPP laws over time. Using LexisNexis we were able to track the progress of PPP laws from their inception, and any resulting changes that affect the favorability index will be incorporated into this variable. In addition, a number of states replaced older laws with newer ones during the time span 1988 – 2008, and the resulting change in favorability creates additional variation. Table 2 gives summary statistics for all variables, and indicates that the mean favorability index score (when all states are included in the sample) is 0.0949.

(Insert Table 2 about here)

Table 3 indicates when each state first passed a PPP statute, as well as the value of its favorability index in 2008 (the last year of our sample), and its corresponding rank. Our favorability index aligns with conventional beliefs about which states have private-sector friendly laws, and which states have laws that are less attractive to private investors. For example, Texas, Virginia, Georgia, and Florida are commonly cited as examples of states with favorable enabling legislation. One commentator notes, "[s]tates like Texas, Virginia, Georgia, and Florida are generally regarded as offering the best models [of PPP legislation], as evidenced

by the fact that they are reaping the most private sector interest and investment."[35] Texas and Virginia had the two highest favorability index ranks in 2008, Georgia had the fifth, and Florida had the seventh.

(Insert Table 3 about here)

Figure 2 shows the trend in the PPP favorability index over time. The solid line displays the sum of all favorability scores per all fifty states. This measure rises over time. The dashed line displays the favorability index divided by the number of states having PPP laws in that year, and thus shows average PPP law favorability. This line indicates that average PPP law intensity is also rising over time. This can happen because one of two things is happening. Either states are replacing existing PPP laws with more favorable laws, or new states are passing more favorable laws on average, or both. There is some evidence that states are learning from themselves, for instance by starting out with a "pilot" or "demonstration" program that limits the number of projects and then removing the demonstration status, or learning from each other's experiences with PPPs. We next discuss some theories of why governments privatize services that led to our choice of independent variables.

(Insert Figure 2 about here)

Infrastructure Demand

There is good reason to believe that a higher demand for travel corresponds to an increased likelihood of using the PPP approach as supply (transportation facility construction) cannot meet the increased travel demand using traditional financing approaches. A number of studies cite rapid population growth, increased VMT, and worsening traffic congestion as

[35] See Gilroy (cited in Note 21) at 14.

reasons why states have turned to the PPP approach.[36] In addition, legislators themselves tend to cite such demand characteristics as reasons why they are passing PPP legislation. For example, this excerpt is taken from Indiana's House Bill (HB) 1008, passed in 2006:

> There is a public need for timely development and operation of transportation facilities in Indiana that addresses the needs identified by the department, through the department's transportation plan and otherwise, by accelerating project delivery, improving safety, reducing congestion, increasing mobility, improving connectivity, increasing capacity, enhancing economic efficiency, promoting economic development, or any combination of those methods.[37]

If the public sector seeks to increase private participation in response to increased travel demand, then these variables will positively affect both the probability of passing a PPP law and the favorability of PPP laws. Our demand variables include year-to-year population growth, motor vehicle registration growth, VMT growth, and the travel time index, which is a measure of congestion calculated by the *Texas Transportation Institute*.[38] A travel time index of 105, for example, indicates that a trip in the peak period takes five percent longer than a trip during the free flow period.[39]

Infrastructure Supply

Another theory suggests that governments privatize as a response to a lack of traditional sources of supply for public service provision, and are thus forced to turn to the private sector. Bel and Fageda conducted a meta-regression of what drives local government privatization, analyzing four hypotheses most commonly tested in the literature. One hypothesis focused on

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[36] See Fishman (cited in Note 9); Kathleen Brown, "Are Public-Private Transactions the Future of Infrastructure Finance, 12 *Public Works Management and Policy* 320 (2007); Lei Zhang, "Welfare and Financial Implications of Unleashing Private Sector Investment Resources on Transportation Networks," 2079 *Transportation Record: Journal of the Transportation Research Board* 96 (2007); and Jeffrey N. Buxbaum and Iris N. Ortiz, *Public Sector Decision Making for Public-Private Partnerships* (2009).

[37] Burns Ind. Code Ann. §8-15.7-1-1(1).

[38] Because congestion data are at the city level, but an observation in the dataset is at the state level, a mechanism was needed to aggregate city level data to the state level. Two problems arose. First, many states have more than one city listed in the *Urban Mobility Report*. Each state's total TTI was calculated by weighting each city's TTI by the proportion of VMT that city contributed to the total state VMT. Second, some states do not have a city large enough to be included in the *Urban Mobility Report*. For these states we used a conservative estimate of traffic congestion, the average TTI for all small urban areas included in the report, defined as those areas with a population under 500,000 people.

[39] The actual travel time index is 1.05, but we multiply by 100 for easier interpretation of coefficients.

fiscal constraints, as many early studies included variables measuring municipal fiscal stress in their regressions. A positive relationship was found between fiscal constraints and privatization.[40] While the evidence on cost savings from privatization at the local government level is inconclusive,[41] asset monetizations, such as the long-term lease of the Indiana Toll Road, provide states with large upfront payments and remove operations and maintenance from government balance sheets, which can provide a short-term boon to states' fiscal woes. Along those lines, recent analyses have found fiscal motivations to be one of the main drivers of privatization through asset sales.[42] Bel and Fageda found that fiscal constraints do not seem to impact privatization in Europe, but they do influence privatization in the United States.[43]

We consider supply-side effects using two variable groups: those measuring a state's general fiscal health, and those measuring a state's alternative sources of infrastructure financing (which we call traditional finance variables for brevity). Fiscal health variables include a state's debt outstanding per capita and its bond rating, while traditional finance variables include federal aid to highways per capita, gas tax receipts per capita, and the fraction of a state's total expenditures it uses for highway purposes.[44]

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[40] Germa Bel and Xavier Fageda, "Why do local governments privatise public services? A survey of empirical studies," 33 *Local Government Studies* 517 (2007).

[41] See, for example, Germa Bel, Xavier Fageda, and Mildred Warner, "Is Private Production of Public Services Cheaper than Public Production? A meta-regression analysis of solid waste and water services," 29 *Journal of Policy Analysis and Management* 553 (2010).

[42] See George Yarrow, "A Theory of Privatization, or Why Bureaucrats Are Still in Business," 27 *World Development* 157 (1999); and Bernardo Bortolotti and Valentina Milella, "Privatization in Western Europe: Stylized facts, outcomes, and open issues," in Gerard Roland, ed, *Privatization: Successes and Failures* (2008).

[43] Germa Bel and Xavier Fageda, "Factors explaining local privatization: a meta-regression analysis," 139 *Public Choice* 105 (2009).

[44] Legislators themselves tend to cite a lack of traditional finance as a reason the state is considering using PPPs. For example, this excerpt is taken from California's Assembly Bill (AB) 680, passed in 1989:

> Public sources of revenues to provide an efficient transportation system have not kept pace with California's growing transportation needs, and alternative funding sources should be developed to augment or supplement available public sources of revenue (Stats 1989, Ch. 107, Sec. 1).

If a state utilizes the PPP approach in response to poor fiscal conditions, then greater per capita debt will increase the probability and favorability of a PPP law. Similarly, a reduction in the state's bond rating will increase both the probability of law enactment and its favorability. That is, the worse a state's bond rating, the more expensive it will be to use traditional municipal bond financing, and the more likely a state will be to use the PPP approach.[45] One reason to believe that a state will use the PPP approach in response to a poor bond rating is evidenced by Chicago, whose debt was upgraded when it used proceeds from the lease of the Chicago Skyway to pay down existing debt.[46] Traditional finance variables should have a negative effect the passage and favorability of PPP legislation.

Political Factors

Both of Bel and Fageda's two meta-regression studies of local government privatization consider political interests and ideology important factors in the privatization decision. Pressure groups seek to extract rents by either favoring or opposing privatization, and variables measuring unionization rates were found to be common in many studies of local government privatization. In addition, the presence of political interests was an important predictor in many of the papers they reviewed.[47] Ideology was not found to be an important factor in privatization decisions, but because our paper studies the passage of laws that enable privatization rather than privatization itself, it is plausible that ideology will have an important impact. McGuire, Ohsfeldt and Van Cott found non-monetary constraints, such as unionization and strike activity, to be much more influential than monetary constraints in the decision to privatize, supporting their hypothesis that

[45] Bond rating data come from Standard and Poor's. A higher numerical value corresponds to a better bond rating. For example, AAA = 21, AA+ = 20, AA = 19, etc.
[46] See Brown (cited in Note 36).
[47] See Bel and Fageda 2007 (cited in Note 40) and Bel and Fageda 2009 (cited in Note 43).

bureaucrats act as utility maximizers.[48] Some studies have emphasized the importance of beliefs and ideology,[49] while others have focused on the institutional arrangements of decision making processes.[50]

Variables measuring political and ideological factors include the fraction of Democrats in the state House of Representatives and state unionization rates. We expect the percentage of Democrats to have a negative effect on the passage and favorability of PPP legislation, as right-wing parties are more associated with pro-business policies, while left-wing parties are more associated with public values.[51] If unions (especially public sector unions) oppose PPPs in favor of a traditional approach that is more likely to involve heavy use of union labor, then the union variable will have a negative impact on both the passage and favorability of PPP enabling legislation.[52] In addition, if privately operated roadways are more likely to employ electronic tolling, then toll collectors unions are likely to oppose PPP legislation as well.[53]

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[48] Robert A. McGuire, Robert L. Ohsfeldt, and T. Norman Van Cott, "The determinants of the choice between public and private production of publicly funded service," 54 *Public Choice* 211 (1987).
[49] Keith Poole and Howard Rosenthal, *A Political-Economic History of Roll-Call Voting* (1997).
[50] See, for example, Douglass North, "A Transactions Cost Theory of Politics," 2 *Journal of Theoretical Politics* 355 (1990); Avinash Dixit, *The Making of Economic Policy: A Transactions Cost-Politics Perspective* (1996); and Douglas Irwin and Randall Kroszner, "Interests, Institutions, and Ideology in Securing Policy Change: The Republican Conversion to Trade Liberalization after Smoot-Hawley," 42 *Journal of Law and Economics* 643 (1999).
[51] Albalate, Bel, and Geddes (cited in Note 14).
[52] Regarding the influence of unions on highway PPPs, one expert notes: "Two different groups of unionized workers may have problems with a private tollway program: state highway department engineers and private sector construction trade unions…State-employed engineers view the design work done by the consortia as work that would otherwise be done in-house…The same approach could be used to frame the issue with construction trade unions." See Robert W. Poole (cited in Note 27) at 15.
[53] One variable that we recognize could have an impact on a state's decision to adopt a PPP enabling statute is the power of lobbying interests in that state. Cadot et al. (2006) use the number of large industrial establishments (i.e. over 500 employees) in certain regions of France as a proxy for lobbying. Their main assumption is that large firms with sunk investment costs and high quantities ship their goods to more distant markets, which makes for a vested interest in the condition of highways and railways. They also note that most of these large firms are headquartered in Paris. We think this variable is innovative, but in the end inappropriate for application to the United States for the following reasons: (1) their paper is primarily concerned with the political process involved in public infrastructure spending, not private; and (2) the U.S. has a federalist system of government while France does not, which affects where infrastructure spending decisions are made. We were unable to develop a good proxy for the power of organized interests in a state.

Controls

Two of our four basic controls include per capita income and per capita income growth. It is difficult to predict ex ante the effect income will have on the likelihood of passing a PPP law and on the favorability of that law. One hypothesis is that states with higher incomes pay more in taxes and have more money from traditional sources of revenue, which suggests a negative effect. Alternatively, private investors might favor wealthier states over poorer states. Private investors may then work towards the passage of PPP laws, suggesting a positive effect. We also include as a control the percentage of bordering states that have a law, which measures a possible diffusion effect across states from law passage.[54] Walker suggests that new policies are partly influenced by developments in other states, as a result of both imitation and competition.[55] If states are learning from one another, and feel more comfortable passing PPP laws if other states have passed them, then this variable will positively affect PPP law passage. We also include the percentage of all states that have a law in a given year, which will pick up a general time trend, as well as a possible diffusion effect. Lastly, we include a dummy variable for states in the U.S. census region designated as "northeast". Since the northeast has a long history of public toll roads/turnpikes (the Pennsylvania Turnpike - 1940, Maine Turnpike - 1947, New Jersey Turnpike - 1952, New York State Thruway - 1954, Mass Pike - 1957, and Connecticut Turnpike – 1958 [tolls removed in 1988] are all a part of the Interstate System), it is reasonable to believe there is some time-invariant, unobservable characteristic about the northeast that makes it predisposed to favor public ownership and operation of transportation facilities over private.

[54] If a state has no borders (Hawaii and Alaska), this variable takes on a value of zero, even though the denominator is technically zero.
[55] Jack L. Walker, "The Diffusion of Innovations among the American States," 63 *The American Political Science Review* 880 (1969).

V. Empirical Approach and Estimation Results

Table 3 reports differences in means between states with PPP laws and states without PPP laws for our independent variables. Almost all differences in means are in the expected direction. For example, states with PPP laws have (on average) higher population growth, higher travel time indices, fewer Democrats in the state house, lower percentages of union membership, less federal aid, less money from gas tax receipts, and higher per capita income. We next explore the robustness of these relationships within a regression framework.

(Insert Table 4 about here)

Determinants of the Passage of PPP Legislation

We first estimate the effects of our independent variables on the probability that a state has passed a PPP law in a given year. We use the following empirical specification, where for any state *i* in year *t*:

$$(1) \qquad \hat{y}_{it} = \alpha + X_{it}\beta + v_i + \varepsilon_{it} \qquad i = 1, \ldots, 50;\ t = 1988, 1989 \ldots . 2008$$

$$y_{it} = 1 \text{ if } \hat{y}_{it} > 0$$
$$= 0 \text{ if } \hat{y}_{it} \leq 0$$

where $\hat{y}_{it}$ equals the unobserved legal response variable for state *i* in year *t*, y_{it} is the observed state law variable which equals 1 if the state has a PPP law in year *t* (and equals 0 if not), $\mathbf{X}_{it}$ is a row vector of exogenous variables including a constant, $\boldsymbol{\beta}$ is a column vector of unknown coefficients, v_i is a regional-specific fixed-effect, ε_{it} is a state-specific error term, and n is the number of states (50) in the sample. We use a logit model to estimate (1). Because observations within a state are correlated across time, we cluster standard errors at the state level in all specifications.

Table 5 presents the results from our logistic regressions. The first specification contains controls and demand variables; the second specification adds fiscal health variables, and the third and final specification adds political variables and traditional finance variables, as well as the dummy for the Northeast. In the third specification, when all variables and dummies are included, demand variables are important in predicting the passage of enabling legislation at the state level. Motor vehicle registration growth has a positive and significant impact on the passage of enabling legislation, as does the travel time index (TTI), which is a measure of congestion. The marginal effect for TTI indicates that a one-unit increase in the travel time index leads to an increase in the probability of adopting a PPP law by 2.3 percent, where a one-unit increase in TTI is a one-percent increase in travel time in the peak period relative to the free flow period. This estimate is robust to all three specifications, and substituting similar measures of congestion, such as annual hours of delay per peak period traveler, yields similar results.

Private investment can be seen as a solution to a state's congestion problems for a few reasons. For one, states can use PPPs as a way to alleviate congestion on existing routes. In addition, PPPs are more likely to utilize tolls, automated tolling technology, and congestion pricing relative to tax financed and publicly provided transport infrastructure. Many states are embracing the concept of managed lanes and HOT lanes, and private financing and operation seems to be the preferred delivery method. Projects are completed or underway in Minnesota on I-394 and I-35W, in Virginia on I-495, in Texas on the I-635 LBJ Freeway, and in Florida on I-595, among others. An alternative hypothesis is that the most congested areas present the greatest profit opportunities for the private sector, and that it is private companies who are pushing the government to adopt legislation where they see good business prospects. Second, states can use

PPPs to add new capacity to alleviate congestion on existing routes, as is being done with construction of the Port of Miami Tunnel.

(Insert Table 5 about here)

The political variables look like they have the strongest effect on determining whether or not a state will adopt PPP enabling legislation. A negative and significant effect is found for the variable measuring the composition of the state House of Representatives.[56] This is consistent with the logic that the Republican Party is more market oriented than the Democratic Party, and is more likely to favor privatization.[57] Higher rates of unionization also negatively impact the adoption of PPP enabling legislation. The marginal effect in brackets shows that a one percent increase in the percentage of the working population that belongs to a union leads to a 1.9 percent decrease in the probability of act adoption. In a recent example of union opposition to a PPP, state highway engineers in California recently filed a lawsuit in an attempt to stop the Presidio Parkway in San Francisco.[58] These results suggest that both political interests and ideology affect the passage of PPP enabling legislation, whereas many studies of the determinants of local government privatization found that only political interests were important. One explanation is that we are studying the passage of laws that facilitate private investment, and not the actual decision to privatize, which is less likely to be ideologically determined.

[56] Nebraska drops out of the sample when political variables are included because of the unicameral nature of their legislature. However, Nebraska only had three observations being used in the regressions because of missing state bond rating data.

[57] A recent newspaper article about the passage of PPP legislation in Ohio helps substantiate this result. The author writes, "Partnerships were not a part of the bill when the House voted on it the first time. Rep. Ron Amstutz, R-Wooster, chairman of the House Finance Committee, said the inclusion of public-private partnerships by the Senate caused House Democrats to vote against the bill." See J. Vardon, "New transportation bill has public-private option," *The Columbus Dispatch*, March 31, 2011 (available at: http://www.dispatchpolitics.com/live/content/local_news/stories/2011/03/31/copy/new-transportation-bill-has-public-private-option.html?adsec=politics&sid=101, accessed April 1, 2011).

[58] See J. Dugan, "In California, A Road to Recovery Stirs Unrest," *The Wall Street Journal*, December 1, 2010 (available at: http://online.wsj.com/article/SB10001424052748704526504575635111807229380.html, accessed March 30, 2011).

There is some evidence that supply-side variables impact the adoption of PPP legislation as well. Debt per capita is positive and marginally significant in the third specification, which suggests that states with more debt are more likely to utilize the PPP approach. In addition, states that spend a greater fraction of their budgets on highways are less likely to adopt PPP legislation. The last thing to observe from Table 5 is that states in the Northeast are 21 percent less likely than the rest of the country to pass PPP legislation, which one can clearly see from looking back at Figure 1.

Determinants of PPP Legislation Favorability

We use ordinary least squares (OLS) regression to determine the effect of our variables on the favorability of PPP enabling legislation. In order to reduce the variation between states with laws and states without laws and focus more on the variation in favorability, we estimate two reduced samples. The first reduced sample consists of all states that passed a law at some point during the span 1988 – 2008, and the second reduced sample drops all observations where the state has not yet passed a law. To clarify, the first reduced sample still contains zeroes for those states that have not yet passed a law, but will at some point during the study period. The second reduced sample drops all observations that have a favorability index value of zero. Table 6 presents the results from the first reduced sample. We hope to sharpen our analysis by excluding states that have never passed a PPP enabling law, since there may be systematic differences in states that have passed versus those that have not. The specifications are the same as in the logit models, and all standard errors are clustered at the state level.

In this sample, demand variables do not positively or negatively affect PPP enabling law favorability. Both political variables, however, negatively impact the favorability of PPP

(Insert Table 6 about here)

legislation, as they did the passage of PPP legislation. Debt per capita is also positive and significant, as it was in the logit models.

Two variables that appear to affect favorability that did not affect passage are federal aid to highways per capita and per capita income, and both are in the expected direction. Of PPP law states, those that receive more fuel tax money back from the federal government (i.e. "donee" states), tend to pass less legislation that is less favorable to private investment. This suggests that federal aid is a substitute for PPP use rather than a complement. Finally, the per capita income variable confirms the finding that wealthier states are more encouraging of private investment, perhaps because private investors prefer to put their money in wealthier states.

Table 7 presents the results from the second reduced sample – that is, observations with positive favorability index values. The smaller sample size eliminates the accuracy of many of the predictors, but there are still certain effects that stand out. For one, the coefficient on the union variable is again negative and significant, suggesting that higher levels of union membership reduce both the passage of PPP legislation and the favorability of that legislation to private involvement. The coefficient on the travel time index is positive and marginally significant, and the Northeast has less favorable legislation than the rest of the country. Lastly, the positive coefficient on the bond rating variable suggests a similar story to the per capita income variable from the first reduced sample. That is, states with higher bond ratings are likely to be wealthier states with larger tax bases that are preferred by private investors.

VII. Summary and Conclusions

In this paper, we have outlined why PPPs are important for the development of transportation infrastructure, and why PPP enabling laws are a crucial element in introducing more private investment. We develop two models: a logit model that uses a variety of factors to

(Insert Table 7 about here)

determine why states pass legislation, and an OLS model using those factors to predict how welcoming a state will make its legislation towards private investment. Our results indicate that the passage of PPP enabling legislation is largely driven by political interests (i.e. unions) and ideology, which was not found to be important in studies of local government privatization. In addition, states with higher levels of congestion were found to be more likely to adopt PPP legislation, and a state's fiscal health, as measured by debt per capita, marginally impacts PPP law adoption. Political variables were found to affect the favorability of PPP legislation in addition to law passage, while traffic congestion seemed to only affect law passage. A state's fiscal health and its political disposition are important factors in the passage of PPP legislation. We did not find much evidence of a diffusion effect of other states' passage on the passage or favorability of legislation, although there is some evidence that states are learning from themselves and learning from each other. It also appears that PPP law favorability is affected by resources available from traditional sources of finance, such as federal aid for highways. Overall, our estimates suggest that PPP legislation, not surprisingly, is driven primarily by political factors.

Table 1 – Survey-Weighted Enabling Scores for Key Provisions of PPP Laws

Provision	Survey-weighted enabling score
1. The law allows multiple modes of transportation and types of transportation facilities to be eligible for a PPP.	0.90
2. Roads and highways are not eligible for PPPs under the statute.	0.08
3. The law allows existing transportation facilities, as well as new transportation facilities, to be PPP-eligible.	0.88
4. The law allows the responsible public entity to receive both solicited and unsolicited proposals.	0.77
5. The statute exempts PPPs from the state's procurement laws.	0.80
6. The law explicitly permits revenue sharing in PPP agreements.	0.80
7. The law does not allow revenue sharing in PPP agreements.	0.21
8. The law explicitly permits the state to make payments to the private entity in lieu of direct user fees (e.g. availability payments).	0.91
9. The law explicitly grants authority to entities other than the primary public sponsor (i.e. counties, municipalities) to enter into PPP agreements.	0.83
10. The law exempts the private entity from paying property taxes on the land required to operate the facility.	0.73
11. The law explicitly allows PPP agreements to contain non-compete clauses or compensation clauses.	0.78
12. The law explicitly prohibits the PPP agreement from containing non-compete clauses or requires the state to maintain a free, alternative route.	0.27
13. The law allows both public and private sector money to be combined in the financing of a PPP project.	0.95
14. The law requires the private sector to put up all of the financing for a PPP project (i.e. no public sector funds allowed).	0.18
15. The law protects the confidentiality of proprietary information contained in a private entity's proposal.	0.89
16. The law includes a provision that allows the state legislature (or another public body) to reject a PPP agreement.	0.05
17. The law does not include a provision that allows the state legislature (or another public body) to reject a PPP agreement.	0.88
18. The law puts a limit on the number of projects that can be developed under the PPP approach.	0.23
19. The law does not put a limit on the number of projects that can be developed under the PPP approach.	0.89

Table 2 – Descriptive and Summary Statistics, 1988 - 2008

Variable	Minimum	Maximum	Mean	Standard Deviation	No. Obs.
PPP_ACT (=1 if state has act)	0	1	0.2771	0.4478	1050
PPP_INDEX (enabling index)	0	0.7515	0.0949	0.1763	1050
Per capita income (2008 dollars, in hundreds)	115.61	562.48	261.60	76.54	1050
Per capita income growth (%)	-9.58	33.19	4.50	2.36	1050
Population growth (%)	-5.60	7.82	1.06	1.02	1050
Motor vehicle registration growth (%)	-53.74	28.28	1.57	4.52	1050
Vehicle-miles traveled growth (%)	-14.14	41.20	2.16	2.99	1050
Travel Time Index	102	135	113	7.38	1050
State debt outstanding per capita (2000 dollars, in hundreds)	1.66	165.01	23.53	17.36	1050
State bond rating	13.00	21.00	19.20	1.35	948
Democrats in state House of Representatives (%)	13.00	95.00	54.03	16.26	1029
Union membership (%)	2.30	30.50	12.98	5.98	1050
Federal-aid for highways per capita (2000 dollars)	0.22	542.78	113.03	76.15	1050
State gas tax receipts per capita (2000 dollars)	29.78	216.62	121.07	30.48	1050
State highway expenditures as a percent of total expenditures (%)	2.69	17.91	8.30	2.68	1050

Table 3 – Dates of First Passage of PPP Laws and 2008 Enabling Index Scores

State	First Passed	Enabling Index (Rank)	State	First Passed	Enabling Index (Rank)	State	First Passed	Enabling Index (Rank)
AK	2006	0.16 (22)	LA	1997	0.66 (3)	OH[D]	---	---
AL	1996	0.33 (17)	ME[B]	---	---	OK	---	---
AZ	1991	0.30 (18)	MD	1997	0.34 (16)	OR	1995	0.61 (6)
AR	---	---	MA[A]	---	---	PA	---	---
CA	1989	0.39 (15)	MI	---	---	RI	---	---
CO	1995	0.65 (4)	MN	1993	0.28 (19)	SC	1994	0.14 (24)
CT	---	---	MS	2007	0.48 (10)	SD	---	---
DE	1995	0.59 (8)	MO	2006	0.42 (12)	TN	2007	0.16 (23)
FL	1991	0.62 (5)	MT	---	---	TX	1991	0.75 (1)
GA	1998	0.60 (7)	NE	---	---	UT	1997	0.52 (9)
HI	---	---	NV	2003	0.28 (21)	VT	---	---
ID	---	---	NH	---	---	VA	1988	0.72 (2)
IL[A]	---	---	NJ[C]	1997	---	WA	1993	0.28 (20)
IN	2006	0.46 (11)	NM	---	---	WV	2008	0.40 (14)
IA	---	---	NY	---	---	WI	1997	0.14 (24)
KS	---	---	NC	2000	0.42 (13)	WY	---	---
KY	---	---	ND	---	---			

Source: Author's compilation

[A] Passed PPP statute in 2009

[B] Passed PPP statute in 2010

[C] Law expired in 2003

[D] Passed PPP statute in 2011

Table 4 – Mean values for states with and without PPP laws, 1988 - 2008

Variable	Act = 1	Act = 0	Difference
Per capita income (2008 dollars, in hundreds)	297.67 (374.67)	247.78 (277.70)	49.89 [9.88]**
Per capita income growth (%)	4.21 (0.16)	4.61 (0.08)	-0.40 [2.45]**
Population growth (%)	1.5006 (0.05)	0.8878 (0.04)	0.6128 [9.07]**
Motor vehicle registration growth (%)	1.9937 (0.31)	1.4101 (0.15)	0.5836 [1.88]*
Vehicle-miles traveled growth (%)	1.8288 (0.15)	2.2804 (0.11)	-0.4516 [2.20]**
Travel Time Index	120.06 (0.42)	111.52 (0.22)	8.54 [19.62]**
State debt outstanding per capita (2000 dollars, in hundreds)	18.80 (0.68)	25.33 (0.67)	-6.53 [5.53]**
State bond rating	19.5620 (0.09)	19.0534 (0.05)	0.5086 [5.34]**
Democrats in state House of Representatives (%)	49.7595 (0.70)	55.7181 (0.64)	-5.9587 [5.36]**
Union membership (%)	10.8430 (0.33)	13.7975 (0.22)	-2.9545 [7.35]**
Federal-aid for highways per capita (2000 dollars)	88.4987 (2.80)	122.4286 (3.00)	-33.93 [6.59]**
State gas tax receipts per capita (2000 dollars)	112.4106 (1.39)	124.3944 (1.16)	-11.9839 [5.79]**
State highway expenditures as a percent of total expenditures (%)	7.3047 (0.11)	8.6864 (0.10)	-1.3817 [7.69]**

Notes: standard errors are in parentheses. T-statistics are in brackets. All variables except state bond ratings and percent Dems in state House have 759 observations for states without PPP laws and 291 observations for states with PPP laws; the bond rating variable has 674 observations and 274 observations, respectively; and the percent Dems in state House variable has 738 observations and 291 observations, respectively.

** Significant at 5 percent level

* Significant at 10 percent level

Table 5 – Logit Estimates of the Probability of Adoption of PPP Enabling Laws

Dependent Variable: PPP_ACT

Variables	Specification (1)	Specification (2)	Specification (3)
Demand			
Pop growth	0.5315 (1.12)	0.3870 (0.96)	0.0576 (0.20)
Registration growth	0.0249 (1.18)	0.0194 (0.66)	0.0422 (1.85)*
VMT growth	-0.0491 (-1.56)	-0.0466 (-1.37)	-0.0441 (-1.24)
Travel Time Index	0.1857 (3.22)** [0.026]	0.1770 (3.81)** [0.025]	0.2312 (4.68)** [0.023]
Fiscal Health			
Debt per capita	---	-0.0059 (-0.17)	0.0398 (1.71)*
Bonds	---	-5.6265 (-3.12)**	-2.5089 (-0.81)
Bonds-squared	---	0.1566 (3.09)**	0.0690 (0.82)
Political			
Dems in House	---	---	-0.0579 (-2.48)** [-0.009]
Union membership	--- 	--- 	-0.1835 (-2.78)** [-0.019]
Traditional Finance			
Federal aid per capita	---	---	-0.0032 (-0.50)
Gas tax receipts per capita	---	---	-0.0002 (-0.02)
Pct. highway expenditures	--- 	--- 	-0.2975 (-1.69)* [-0.030]
Regional Variables			
Northeast	--- 	--- 	-3.9001 (-2.54)** [-0.214]
Controls			
Per capita income	-0.0108 (-1.30)	-0.0095 (-1.26)	0.0015 (0.19)
Per capita income growth	0.0197 (0.42)	0.0138 (0.33)	-0.0154 (-.040)
Neighbors	0.0173 (1.99)**	0.0147 (1.40)	0.0080 (0.82)
Pct. states with laws	0.0839 (2.28)**	0.0873 (2.70)**	-0.0013 (-0.03)
Intercept	-23.1803 (-4.02)**	27.6877 (1.67)*	1.8027 (0.06)
No. Observations	1050	948	945
Pseudo R-squared	0.3797	0.3971	0.5119
Log-likelihood	-384.45	-343.65	-277.71
Wald (Chi-squared)	65.17**	108.01**	161.70**

Note: t-statistics are in parentheses. Marginal effects are in brackets.

** Significant at 5 percent level

* Significant at 10 percent level

Table 6 – OLS Estimates of the Favorability of PPP Enabling Laws
Reduced Sample: States that passed laws during the period 1988 – 2008
Dependent Variable: PPP_INDEX

Variables	Specification (1)	Specification (2)	Specification (3)
Demand			
Pop growth	0.0211 (0.93)	0.0116 (0.51)	-0.0158 (-1.58)
Registration growth	-0.0002 (-0.10)	-0.0009 (-0.40)	-0.0002 (-0.18)
VMT growth	-0.0027 (-1.01)	-0.0027 (-0.87)	-0.0026 (-0.87)
Travel Time Index	0.0053 (1.22)	0.0045 (1.12)	0.0060 (1.67)
Fiscal Health			
Debt per capita	---	-0.0002 (-0.26)	0.0017 (1.78)*
Bonds	---	-0.0644 (-0.33)	0.2519 (1.53)
Bonds-squared	---	0.0019 (0.36)	-0.0070 (1.56)
Political			
Dems in House	---	---	-0.0037 (-3.47)**
Union membership	---	---	-0.0111 (-2.93)**
Traditional Finance			
Federal aid per capita	---	---	-0.0007 (-2.79)**
Gas tax receipts per capita	---	---	-0.0005 (-1.19)
Pct. highway expenditures	---	---	0.0064 (0.73)
Regional Variables			
Northeast	---	---	-0.3032 (-5.45)**
Controls			
Per capita income	0.0003 (0.41)	0.0005 (0.54)	0.0014 (2.28)**
Per capita income growth	0.0085 (2.56)**	0.0069 (2.03)**	0.0038 (1.65)
Neighbors	-0.0001 (-0.14)	-0.0000 (-0.02)	-0.0003 (-0.43)
Pct. states with laws	0.0059 (1.96)*	0.0053 (1.72)*	-0.0005 (-0.25)
Intercept	-0.7381 (-1.81)	-0.1329 (-0.07)	-2.6792 (-1.67)
No. Observations	546	507	507
R-squared	0.4051	0.4097	0.5674

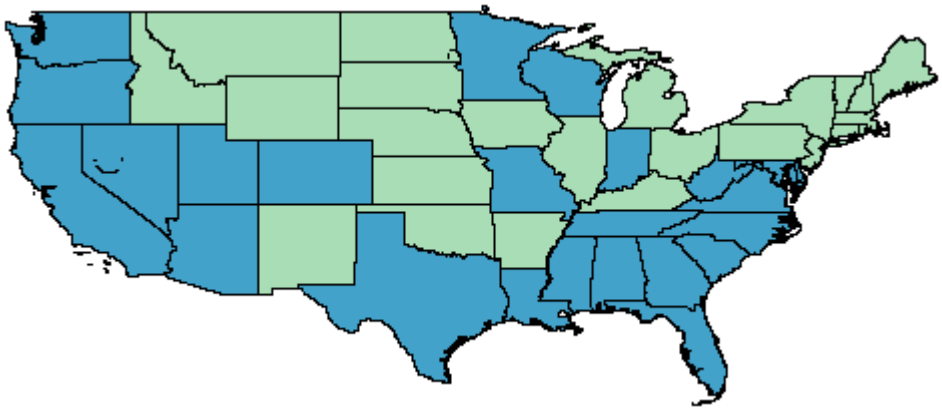
Note: t-statistics in parentheses.
** Significant at 5 percent level
* Significant at 10 percent level

Table 7 – OLS Estimates of the Favorability of PPP Enabling Laws
Reduced Sample: States with positive index values
Dependent variable: PPP_INDEX

Variables	Specification (1)	Specification (2)	Specification (3)
Demand			
Pop growth	0.0382 (1.90)*	0.0260 (1.18)	-0.0015 (-0.09)
Registration growth	-0.0032 (-2.90)**	-0.0043 (-2.68)**	-0.0025 (-1.60)
VMT growth	-0.0009 (-0.22)	-0.0017 (-0.44)	-0.0038 (-1.18)
Travel Time Index	0.0005 (0.08)	0.0007 (0.16)	0.0074 (1.74)*
Fiscal Health			
Debt per capita	---	-0.0004 (-0.12)	0.0051 (1.46)
Bonds	---	0.1318 (0.68)	0.4574 (2.17)**
Bonds-squared	---	-0.0033 (-0.60)	-0.0122 (-2.13)**
Political			
Dems in House	---	---	-0.0014 (-0.83)
Union membership	---	---	-0.0127 (-2.35)**
Traditional Finance			
Federal aid per capita	---	---	-0.0008 (-1.36)
Gas tax receipts per capita	---	---	-0.0006 (-0.76)
Pct. highway expenditures	---	---	0.0143 (1.13)
Regional Variables			
Northeast	---	---	-0.1989 (-2.26)**
Controls			
Per capita income	0.0008 (0.95)	0.0007 (0.90)	0.0006 (0.76)
Per capita income growth	0.0079 (1.66)	0.0066 (1.30)	0.0040 (0.94)
Neighbors	-0.0011 (-1.22)	-0.0009 (-1.03)	-0.0011 (-1.75)*
Pct. states with laws	0.0033 (0.81)	0.0035 (1.08)	0.0029 (1.00)
Intercept	-0.0970 (-0.16)	-1.4081 (-0.77)	-4.8514 (-2.46)**
No. Observations	291	274	274
R-squared	0.2255	0.2337	.4030

Note: t-statistics are in parentheses.
** Significant at 5 percent level
* Significant at 10 percent level

Figure 1 – States with PPP Legislation, 2008



Notes: States in blue have legislation. Alaska (not pictured) has PPP legislation specific to one project, the Knik Arm Bridge. New Jersey's law expired in 2003. Massachusetts passed legislation in 2009, Maine and Illinois passed in 2010, and Ohio passed in 2011.

Figure 2 – U.S. Mean PPP Legislation Favorability Index, 1988 – 2008