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Today's Roads with Tomorrow's Dollars: Using GARVEE Bonds to Finance Transportation Projects

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In an environment of fiscal austerity and rising mobility needs, states nationwide are struggling to find the means to pay for transportation projects. Grant Anticipation Revenue Vehicle (GARVEE) bonds provide an increasingly popular method of financing highway and transit infrastructure. Pledged against future federal transportation grants, GARVEEs themselves normally don't require public votes nor increased gas taxes. However, project savings through accelerated planning and construction should remain the primary consideration for using GARVEEs rather than political expedience.

I. Introduction

Throughout the country, states are still reeling from a budget situation described as more severe than any of the past 60 years by the National Association of State Budget Officers. State revenues have plummeted, forcing policymakers to slash budgets, scavenge for funds, and shift priorities in response. Transportation spending has been particularly affected by these fiscal stresses. From fiscal year 2003 to fiscal year 2004, total state spending on transportation has decreased by about $3 billion and declined from 9 percent of total state spending to 8 percent.[1]

Despite this fiscal dilemma, states appear to be unwilling to raise gas taxes or other traditional sources of transportation revenue to make up for this shortfall in funding. This unwillingness, coupled with dramatic increases in new vehicle fuel efficiency, means that (adjusted for inflation), state gas tax revenues have steadily declined, in real terms, since 1998.[2]

But this is really nothing new. The gap between transportation needs and available funding has long been recognized. Over the years a variety of steps have been taken on the federal level to provide the states with new tools. The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), and its successor, the Transportation Equity Act for the 21st Century (TEA-21), encouraged transportation decision makers to creatively stretch transportation revenues and leverage additional funding by making use of new financing strategies. Such innovative financing strategies do not include new money but, rather, focus on state credit assistance, federal loans, federal matching flexibility, and bonding and debt instruments.

The main intent behind developing new approaches has been to allow projects to be implemented sooner. One such financing approach is the use of Grant Anticipation Revenue Vehicles ("GARVEEs") and a variety of associated instruments. Simply stated,

"GARVEEs" are bonds, notes, or other financial instruments issued based on future projections of federal-aid transportation funding. GARVEEs allow states to immediately finance projects instead of waiting for pay-as-you-go financing. In other words, states can essentially begin work on projects for which they have not received funding, but rather, *anticipate* receiving in the future funding cycles. Many governors and state officials have touted GARVEEs as a way to speed up certain projects and to avoid future inflationary costs.

Despite the increasing popularity of GARVEEs, there has been little attention paid to their use outside the insular world of transportation finance despite their connection with some potentially controversial projects. Without a doubt, the new financing tools such as GARVEEs enable states to advance projects which otherwise would be delayed until funds could be raised or otherwise secured. However, the effect of accumulating debt on state transportation budgets and future capital programs is not well understood. Are GARVEEs cost saving measures for states that enable them to respond to transportation challenges? Or are states mortgaging the future and building up what amounts to consumer credit-card debt for questionable projects?

The purpose of this paper is to describe and discuss GARVEE and GARVEE-like financing and to examine states and projects that take advantage of such resources, determining in the process if there are biases toward the type of projects being selected and the overall impact on states' capital programs.

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II. Highway and Transit Funding Related to GARVEE Financing

In order to understand GARVEEs it is important to briefly discuss how transportation projects are financed in general.

a) Traditional Revenue Sources

The most important element in terms of funding highway projects is the gas tax, which is levied both by the federal government (at 18.4 cents per gallon) and the states (average 20.2 cents per gallon).[3] Together, the federal and state gas taxes generated nearly 54 percent of all non-local revenues spent on highways in 2002.[4]

The federal gas tax is collected by the Internal Revenue Service and retained in the Highway Trust Fund (HTF), which is maintained by the Federal Highway Administration (FHWA). The HTF splits receipts into the Highway Account and the Transit Account, then distributes the funds back out to the states based on federal-aid programs with a minimum guarantee for each state. The state transportation revenue stream, which is dedicated for transportation purposes in most states, pays for costs of maintaining and operating the highway network and funding capital projects. The federal program supports capital investments, such as new highway capacity and rehabilitation of existing roadways.

For many years, the receipts from the federal and state gas taxes provided an ever-increasing revenue stream for states' departments of transportation (DOTs). As the number of vehicle miles traveled (VMT) went up, so did the gasoline consumed and taxed. However, in recent years, the increase in VMT and gasoline consumption for the country as a whole has begun to level off. During the 1960s the average yearly increase in VMT was 4.4 percent, compared to 2 percent since 2000. Similarly, the growth in gasoline consumed increased by an average of 3.8 percent in the 1970s compared to 1.7 percent since 2000.[5] So while the overall amount of VMT continues to go up, states are no longer able to rely on large increases in gas tax revenue from year to year. This impacts the federal HTF, as well.

Federal transit funding is actually quite different from highway funding in that the federal funds do not only flow directly to the state DOTs. Rather, transit funds go directly to

transit agencies or local governments. The HTF's Mass Transit Account receives 15.5 percent of the collected gas tax revenues. Funds can be "flexed" to transit from traditional highway programs and are also available through several dedicated funding programs. Most notable are the Transit Capital Investment Grants and Loan Program (Sections 5309) and the Urbanized Area Formula Grant Program (Section 5307). The nature of these grants makes it difficult to anticipate transit funds for debt service. Section 5307 grants make up about two-thirds of the major federal transit funding and are apportioned by a relatively stable and consistent formula. These funds may be used for the purchase of transit vehicles and support equipment. However, some Section 5309 funds are discretionary in nature and without guaranteed yearly funding. These funds are used for new rail systems, rail line extensions, buses, and bus facilities.[6]

Another significant revenue generator for states are bond proceeds.[7] Bonds are essentially loans incurred by governments, and others, to finance a range of projects from debt service to infrastructure such as roads and schools. Bond issuers promise to pay back the "loan" with interest at regular intervals, by a specific date. Most bonds are rated by private companies that help gauge the issuer's ability to pay back the bond by the due date.[8]

The overall incidence of bonding (apart from GARVEEs described below) is increasing rapidly as states are having to borrow to finance highway projects due to the combination of increasing needs and decreasing revenues. Since 1990, state bond "proceeds" used for highways have increased by over 300 percent from $3.2 billion to $13.2 billion in 2002. Outstanding state bond obligations totaled $70.8 billion at the end of 2001, compared to $28.4 billion in 1990.[9]

Despite this recent rapid increase, bonds have been a staple for paying for highway projects for many years. In 1893, Massachusetts became the first state to establish a highway department, and in that same year became the first state to issue bonds to borrow for highway projects. Since then, every state, except Nebraska and Wyoming, has issued such bonds.[10] Many states issue bonds to support a portion of their capital program since the investments are viewed as long term assets. Clearly, this rationale makes sense: to match the life of the asset with its payment life so that all users pay for it—not just the ones that were around when the asset was first built.

The attraction for states of financing highway projects with bonds is that they are able to pursue projects more quickly than if they had to have all the cash in hand to begin. Today, all metropolitan areas show more congestion, lasting a longer period of time, and affecting more of the transportation network. As residents and businesses complain about congestion and demand immediate action—without raising taxes— issuing bonds becomes more appealing.

Until 1991, states were not permitted to borrow against future federal highway funds. Therefore, they had to treat federal funds differently from their own state funds, which they have borrowed against for years because the tradeoffs made it worthwhile. Recently, as states have begun to perceive federal-aid highway dollars as "their" money, they demanded, and were granted, the same flexibility.

b) Innovative Finance Tools

In technical terms, Grant Anticipation Revenue Vehicles—GARVEEs—refer to any bond, note, certificate, mortgage, lease, or other debt financing instrument issued by a state or political subdivision whose principal and interest is repaid primarily with federal-aid funds under Section 122 of Title 23, U.S. Code.[11] For the purposes of this paper, we included all GARVEE and GARVEE-type transactions that leverage future federal funds. GARVEEs differ from standard municipal bonds or conventional state bonds that are backed by the state's taxing authority in that the principal and interest are paid back with future federal highway or transit funds.

GARVEEs can be issued for any transportation purpose as identified in TEA-21. That is, they can be used for almost any highway project, transit project, the purchase of transit vehicles, or connections to intermodal ports and stations. They cannot be used to build rail

lines for freight or for Amtrak. Nor can they be used for any transportation purpose that is solely private.[12]

Normally, to use federal transportation money a state will "request" funds from the U.S. Department of Transportation (U.S. DOT).[13] The funds are not actually transferred; rather, the state applies for reimbursement for project expenses. With GARVEEs, states take that reimbursement and use it to secure the principal and debt service of bonds for another project. The debt itself remains a state responsibility, but the source of debt service is federal transportation funds. The result is that the priority for future federal highway funds may shift to payment of debt service on these bonds. It is important to note that a GARVEE does not carry with it any guarantee for repayment from the federal government. The onus for repayment remains with the states (or the issuer).

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GARVEEs are very similar to Grant Anticipation Notes (GANs), a more generic term also referring to bonds repaid by expected grant money, usually federal. GANs are usually used to finance schools and hospitals, while GARVEEs refer specifically to instruments repaid mostly by federal highway and transit funds.

GARVEEs represent one of the new tools that Congress provided to the states primarily to facilitate the development and acceleration of highway projects. Three major changes in federal transportation policy facilitated the use of GARVEEs as a viable financing mechanism:

- First, in accordance with ISTEA requirements, Congress passed the National Highway System (NHS) Designation Act of 1995, formally establishing a network of nationally important roads, including the Interstate Highway System, that Congress felt were vital to the nation's economy, defense, and mobility.[14] This is explicitly laid out in Title 23 of the U.S. Code: it is in the "national interest to accelerate the construction" of highways since many "are inadequate to meet the needs of local and interstate commerce, for the national and civil defense"[15] To help accomplish this, the act revised the finance rules, allowing states to use federal aid funds for any expenses related to retiring debt. Historically, states were only allowed to use federal highway funds to pay the principal on bonds. Allowing states to also use federal funds to repay both the principal and interest on state-issued transportation debt opened up more financing opportunities for states.
- The second major change allowed states to begin highway projects sooner than they normally would be able to. The "Advance Construction" provisions of the NHS Act (continued and amended by TEA-21) allow states to advertise and award construction contracts for projects using state or other non-federal money to be reimbursed by federal funds later. This is helpful when states have such funding available and when existing federal appropriations have been exhausted. It is also helpful because lenders may be more confident of repayment.[16] Nearly every state has undertaken advance construction projects, totaling about $20 billion.[17]
- The third major change was in the way the federal government distributed money to the states. Within TEA-21 lies a provision, usually hotly debated come appropriations time, called the minimum guarantee. Briefly, states wanted more of a balance between funds they "generate" from the federal gas tax for the HTF and the funds they receive back. TEA-21 enabled states to receive back 90.5 percent of their share of total gas tax contributions.[18]

  A related feature is the Revenue Aligned Budget Authority (RABA) that automatically adjusts the amount of money redistributed to states based on the actual revenues in the HTF. RABA was designed, in effect, to prevent fuel tax revenue from being spent on anything other than highway purposes such as federal deficit reduction.[19] The changes were of particular importance for GARVEEs since it strengthened the predictability of federal highway funds receipts, meaning investors were more confident in getting paid back. The comments of John Hallacy, a managing director of municipal bond research at Merrill Lynch & CO illustrate this point: "Back in the 1970's …. it was very hard to get [GARVEE-type bonds] rated, structured, and sold because there

was all this uncertainty amount the timing of the revenue flow from the federal government. Now it's more scheduled and structured."[20] Several of the major rating agencies, such as Standard & Poor's and Fitch, expect large increases in the amount of GARVEE issuances in the years to come. This is primarily due to the projected activity in existing programs as well as increased interest from other states.

Although policy changes on the federal level have facilitated GARVEE use, there is very little federal policy guidance regarding the nature and amount of the bonds a state should issue.[21] There is a document entitled "GARVEE Bond Guidance" prepared by the U.S.DOT that discusses how GARVEEs work, application processes, and outlines their relationship with existing federal rules and regulation.[22] No limit has been set on GARVEE amounts and no federal regulations have been developed. However, special attention has been given to the range of innovative finance mechanisms and to GARVEEs in particular in the FHWA's quarterly newsletter.[23]

Beyond this basic guidance though, it has been left to the states and their financial advisors to determine the amount and number of GARVEEs, the level of encumbrance of future federal funds, the coverage ratios, their maturity, etc. The degree of risk to the bondholder is captured in the rating given by the rating agencies. There is no federal policy that limits or dictates the terms, or length, of GARVEE debt. Again, the market is responsible for setting these parameters. Most state debt is issued over 10 to 15 years spanning several different highway reauthorization phases. In other words, the federal government has very little authority over the level or type of debt states choose to incur. Ultimate decision making authority relies exclusively with the states. The market is responsible for the money to be borrowed.

C). Types of GARVEEs

Depending on the project to be financed, different types of GARVEEs are possible. Short term GARVEEs are those where the term of the notes do not exceed the federal reauthorization period. In other words, they are backed by obligations of federal funds that have already been authorized. As such, for short-term bonds their primary risk is referred to as an "appropriations risk": whether or not the *annual* U.S. DOT appropriations to the state will be enough to support that portion of the debt service. Many believe that the minimum guarantee and RABA provisions discussed earlier eliminate this risk.

On the other hand, long term GARVEEs go beyond current authorization periods. For this reason, they are more risky than short term GARVEEs since they depend on Congress reauthorizing the federal highway program—the "authorization risk"—as opposed to just appropriating annual funds. The chances of Congress not reauthorizing the federal highway program have historically been very low. Nevertheless, authorization is certainly not guaranteed. As such, most GARVEEs have certain provisions as "backstop" security.

Backstopped GARVEEs involve a pledge of another revenue source, such as a state's gas tax, general obligation authority, vehicle registration revenues, or toll revenues to enhance their creditworthiness by covering for any potential shortfall between the federal revenues and the existing debt. The more backstops a GARVEE has, the lower the risk for investors.

Naked GARVEEs, also referred to as stand-alone or non-recourse GARVEEs, are those where the creditworthiness of the bonds is entirely dependent on future federal funds. In other words, no backstops, other resources, or credit from the state or any other entity are involved. In order to enhance the creditworthiness of the GARVEEs, and make them marketable, bond insurance is often purchased. According to the FHWA, bond insurance is the best way to ensure high scores from the ratings agencies.[25]

In addition to security provisions, GARVEEs vary depending on what types of projects they are to finance.

Direct GARVEEs are those where the federal aid directly reimburses the debt service, or directly repays the debt for a specific project. In such cases, the bonds, the project financed, and the federal reimbursements are closely tied. The projects receive prior approval from the FHWA and the debt service is paid directly with the federal funds for the

project. For a project to be eligible, it must be an Advance Construction project, as mentioned earlier, and must be identified in the state's State Transportation Improvement Plan (STIP). The STIP is a list of all projects (including debt service) for which the state is seeking federal aid over a three-year period.

Indirect GARVEEs on the other hand, do not necessarily have to support specific federal-aid projects.[26] Rather, they are repaid indirectly by federal funds from other transportation projects. These indirect bonds do not require federal approval, are free from federal requirements, and can be used to pay the debt service for any number of transportation projects. They are considered to be much more flexible than Direct GARVEEs since the funds can be applied more broadly—on state projects, for example. Technically, Indirect GARVEEs are not really GARVEEs at all since the debt service is not paid by the federal government in connection with a specific project or federal aid grant in connection with the National Highway System (NHS) Act. Rather, indirect GARVEEs are more properly referred to as RVEEs (reimbursement vehicles) since the projects are not just NHS projects and the debt service can be paid by a variety of federal sources not necessarily linked to the project being constructed.

Again, for the purposes of this brief, the term "GARVEE" is used to refer to both the direct and indirect types, including RVEEs. Several states use different terms for their specific types of issuances—including FRANS (Federal Reimbursement Anticipation Notes), TRANS (Transportation Revenue Anticipation Notes), and RANS (Revenue Anticipation Notes)—but for simplicity's sake we retain just the one common term: GARVEE. While there are distinctions between these different instruments, the purpose of this brief is not to critique the specific types but to discuss and analyze them in general.

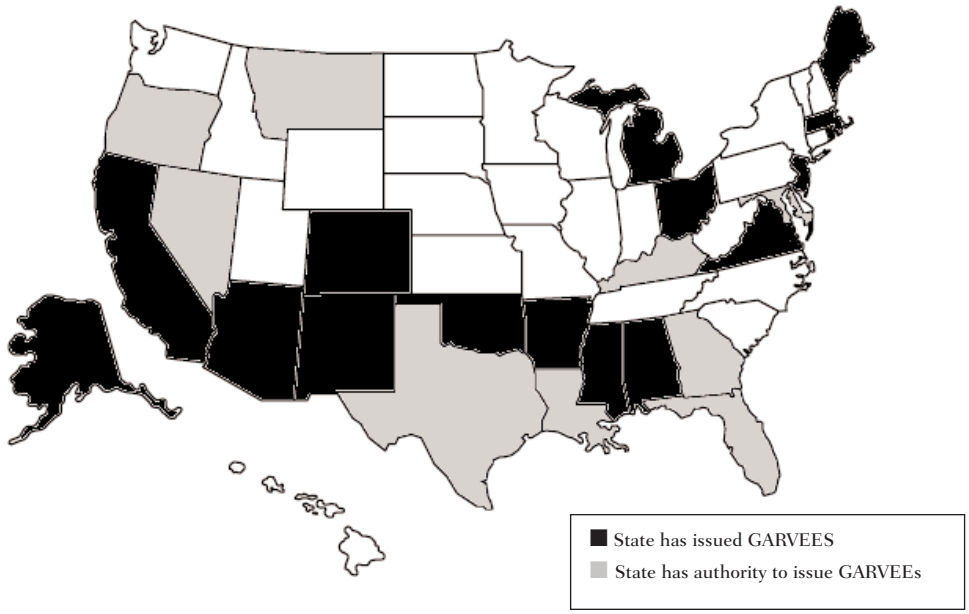
III. GARVEE Experiences to date

Although states technically had the ability to so issue GARVEEs since the passage of ISTEA in 1991, no state issued one for transportation projects until 1998. Since then, 16 different states, Puerto Rico and, the Virgin Islands have done so.[27] Nine other states have the legislative authority to issue GARVEE-type bonds, while at least two additional states—Indiana and Missouri—are currently considering granting such authority. GARVEE authorization was tabled in New Hampshire and Vermont, and in 2002 a select committee of the Wyoming legislature on financing and investments decided not to allow GARVEEs.[28]

There are no strong regional or geographic trends with regard to GARVEE issuances. States in the Northeast, Midwest, South and West have all issued GARVEEs, as have transit-intensive urban states like New Jersey and Massachusetts and rural southern states such as Arkansas and Mississippi. Slow-growing Rust Belt states Michigan and Ohio have issued GARVEEs as have and fast-growing western states like Colorado and Arizona. Anecdotally, Figure 1 does show that there appears to be a propensity for Sun Belt states to issue GARVEEs or to seek the authority to do so.

Ohio was the first state to issue a GARVEE bond which they did in May 1998—just before ISTEA expired and one month before President Clinton signed TEA-21 into law. With five, Colorado has issued the most GARVEEs of any state. In fact, eight of the 15 states that have issued GARVEEs have done so more than once (Table 2).

Figure 1. State GARVEE and Related Bonds Issuances



Note: Massachusetts, Michigan, Mississippi, and Virginia issuances are RVEEs. New Jersey's is a transit RVEE.

Table 2. Number of GARVEE Issuances by State

State	# of Issuances
Colorado	5
Arizona	4
Ohio	4
Arkansas	3
New Mexico	3
Massachusetts*	2
Michigan*	2
New Jersey**	2
Alabama	1
Alaska	1
California	1
Maine	1
Mississippi*	1
Oklahoma	1
Puerto Rico	1
Rhode Island	1
Virgin Islands	1
Virginia*	1
Total (16 states)	**35**

* - *RVEEs*

** - *Transit RVEE*

Figure 2. Total Amount of GARVEE Issuances (in $ Thousands), by Date

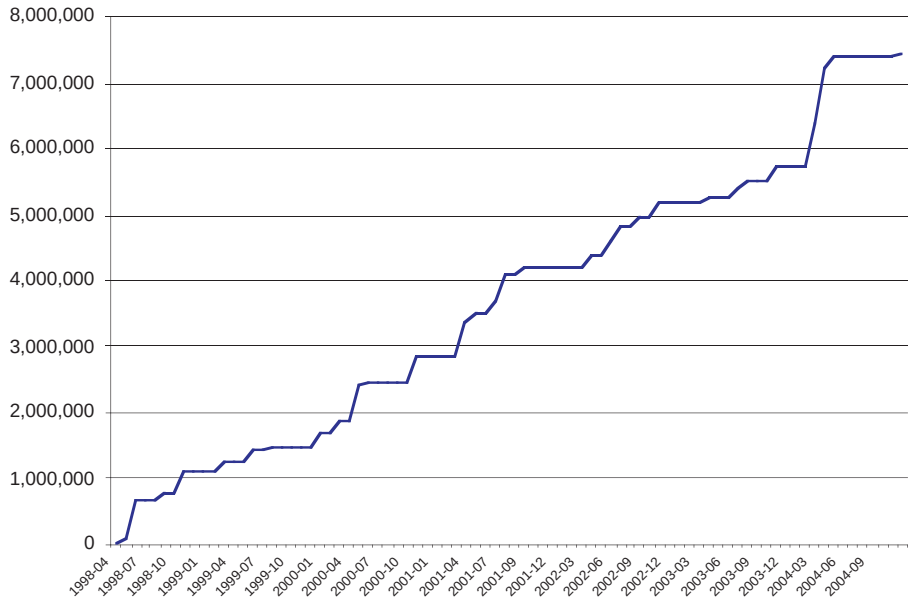


Figure 2 illustrates the steady progression of GARVEE-type issuances, along with the accumulating total amount. Through the end of 2004 the total dollar amount of GARVEE-type transactions reached $7.5 billion. Individual issuances have ranged from relatively small amounts of under $40 million in Ohio, New Mexico, and Arizona, to extremely large issuances of over a half billion in Massachusetts, Colorado, and California. A $1 billion GARVEE issuance has been proposed for a single project in Maryland.

GARVEEs are generally not issued for single projects. Rather they are frequently used to finance large highway programs that encompass a variety of projects throughout the state, or in a large region of the state. This is particularly true for the largest bonds. Some are for a variety of projects under the umbrella of a larger program—such as Mississippi's statewide four-lane construction program. The location of these projects varies considerably. Although there are several urban and rural projects, it appears that most GARVEE-funded projects are located in suburban and exurban areas on the metropolitan fringe.

Further, while GARVEEs are used to finance a wide range of projects throughout the U.S.—they are mostly going to new roads and capacity increases. This is not wholly surprising since the very nature of GARVEEs lend itself to very expensive endeavors—whether single projects, or part of a larger program due to economies of scale. GARVEEs are also helping to finance very large projects like Ohio's Maumee River Bridge project—the largest project ever undertaken by the Ohio Department of Transportation—and Arizona's Hoover Dam bypass, one of the largest concrete arch bridges in the world. California issued over $615 million in GARVEE bonds to help fund a variety of high-occupancy vehicle toll (HOV) lanes and related infrastructure throughout the state.

GARVEEs and State Indebtedness

But in addition to the types of projects a GARVEE will help fund, there is the issue of a state's general disposition toward debt and the risk that accrues when public entities borrow money. Some states have taken steps to ensure that GARVEE liabilities are less burdensome and risky. In order to issue GARVEE debt, each state must pass the requisite enabling legislation. California's policy limited their GARVEE transactions to 15 percent of annual federal revenues (state code previously allowed up to 30 percent) and limits the term of the debt service to no more than 12 years.[29] Other state debt limits include: 10 percent in Florida, 50 percent in Colorado, and 13 percent in Maryland. Arkansas limits the term of GARVEE debts to 12 years, Mississippi to 10 years, Maryland to 15 years, and Nevada to 20 years.

The percentage of overall project funds that come from GARVEE debt also varies. The $680 million in GARVEE bonds will finance about 41 percent of the $1.67 billion Southeast Corridor Project (T-REX) in Colorado, while almost 30 percent of New Mexico's $375 million SR 44 project is financed by GARVEEs. Estimates for the amount of GARVEE debt used to finance Boston's Big Dig range from 6 to 14 percent.[30]

For many states, GARVEEs (as well as standard bonding) represent a departure from the pay-as-you-go (PAYGO) system of financing federal-aid highway projects. That is, projects are completed, maintained, and administered when the money is available—whether from state, federal or other sources. The PAYGO method became part of the culture of highway finance after it was endorsed by President Eisenhower when the federal highway act was signed into law in 1956.[31] In addition, some states historically are averse to accumulating debt and have long warned against the dangers of borrowing. However, as transportation demands have increased, and revenues have spread over larger areas and among more projects, and as state budget crises continue, states are changing the way they fund transportation projects.

Virginia presents a classic example. Former Sen. Harry F. Byrd was a vocal proponent of an expansive highway system. However, he was a firm believer in pay-as-you-go systems of financing "with a nearly pathological hatred of debt."[32] As a result, for many years, Virginia was considered a model for responsible transportation finance. In the late 1990's borrowing increased and later GARVEE-type bonds were issued to pay for a variety of transportation projects and to address gaps in available funding. A comprehensive review of Virginia's transportation program found that while GARVEE-style debt "provides a significant increase in available funds in the years the state DOT issues the notes, the effect of debt service payments partially counteracts this increase and reduces the amount of funds available for construction in subsequent years."[33] A 2001 report card on Virginia's finances pointed out that the state DOT's "ongoing problems represent a significant departure from what has been a strong record."[34]

Other states appear to be going against their philosophical leanings when it comes to debt issuance. Colorado was historically conservative when it came to issuing debt. In deciding whether to issue GARVEEs, the state's deputy treasurer pointed out that "the fundamental issue is that one Legislature must not bind future ones."[35] Since 2000, Colorado has issued $1.5 billion in GARVEE debt alone. The legality of GARVEEs was questioned in Georgia and Oklahoma when they were sued on the grounds that GARVEEs created state debt and thus subject to a public vote. Both states' Supreme Courts rejected that argument and ruled that GARVEE debt is technically paid with federal money, not state money. In Colorado, however, the courts ruled that since GARVEEs "would constitute a multiple-year direct or indirect debt or other financial obligation" that voter approval was required.[36]

The controversy is also boiling over in Maryland, where payment of the bonds proposed for the $2.4 billion InterCounty Connector is projected to consume up to 20 percent of the state's future federal highway dollars. The debate over the project has focused in large part on the GARVEE financing component. State officials have asked to issue $1 billion in GARVEE debt which would be, by far, the largest issuance anywhere in the country. The Maryland state legislature, however, has limited the issuance to $600 million, citing concern over overall indebtedness.[37]

IV. Pros and Cons of GARVEEs

GARVEEs are receiving considerable attention because they represent another financing mechanism for states and agencies operating in a constrained budget environment. For that reason, much of the conversation about GARVEEs focuses on positive aspects of getting projects built, addressing transportation challenges, and coming up with innovative financing solutions.

Competing demands for scarce public resources has forced state and local governments to address the inadequacy of current funding to meet growing transportation needs. In today's environment, critical projects may face years of delay before funding is available. State and local transportation entities understand the costs associated with project delays and have sought ways to get projects built faster by utilizing innovative finance techniques, sometimes in the absence of new revenues. Below are the key benefits associated with the issuance of GARVEEs:

"GARVEEs only make sense when the costs of delay outweigh the costs of financing."

Benefits of GARVEEs:

1) Accelerated project delivery

Obviously, the main benefit proponents argue is that issuing GARVEE-type instruments allows projects to get built more quickly than they would otherwise with pay-as-you-go financing. According to the Federal Highway Administration, the Arkansas interstate reconstruction and rehabilitation project was accelerated by up to nine years while the Spring-Sandusky Interchange project in Ohio will be accelerated by 25 years.[38] Both are funded in part by GARVEEs. By speeding up this process, transportation agencies are able to react to "quick fix" transportation problems, and policymakers are able to demonstrate action.

When projects result in measurable economic and safety improvements, those benefits are realized sooner. For example, Alabama issued GARVEEs to help fund its county bridge program which will replace some 1,600 county bridges that were weight-restricted and could not be used for school bus traffic. Without the replacement bridges, school buses were traveling miles out of the way for safe roads.

2) Speeding up projects may result in cost savings

A related benefit is that when projects are accelerated some cost savings may be realized. When rights-of-way, real estate, materials, and services are purchased sooner, savings accrue by short-cutting inflation. Of course, this occurs only if the costs of debt financing are offset by the savings from avoiding inflation, making borrowing more cost-effective. So, a basic tenet of GARVEEs is that they only make sense when the costs of delay outweigh the costs of financing. Alaska found that GARVEE-funded projects in 2003 would save nearly $40 million in construction costs by avoiding inflation.[39] In 2001, the Texas department of transportation (TexDOT) estimated that if $1.1 billion in GARVEEs were issued to begin projects that would otherwise take 15 years to complete they would "economically benefit the state some $1.7 billion more than pay-as-you-go. This even takes into consideration debt payments."[40]

Another cost saving may result from project acceleration on rehabilitation projects. According to the FHWA, it is "typically much less expensive to maintain, operate, and rebuild roads in better condition."[41] In other words, by waiting until roadway projects are in functional disrepair before rehabilitation projects begin, costs are higher due to the amount of work that may need to be performed. In addition roads and bridges may also have to be closed if repair is postponed for too long. Asset management is a key GARVEE issuance criterion. Part of New Mexico's GARVEE issuance for reconstructing and widening State Route 44 included an up front warranty with the contractor to maintain a minimum pavement quality for 20 years.[42]

The FHWA has also identified additional costs that can be imposed from "delaying"

projects including "lost driver times, freight delays, wasted fuel, or deferred economic development."[43] Of course, these savings are highly dependent on the precise nature of the project being funded.

3) GARVEEs can fund large projects that need a variety of financing tools
Throughout the country, there seems to be a burgeoning interest in some very large, very expensive projects that go beyond the scope of traditional highway investments. Beyond laying down asphalt or building bridges, these "transformative investments" can radically alter the urban landscape by fundamentally rethinking the role of infrastructure in the built environment. One clear example is Boston's Central Artery Project (the Big Dig), considered the nation's largest public works project. By tearing down its elevated roadway (the Central Artery), Boston reclaimed nearly 30 acres of open space and reconnected cross streets that had been severed by the freeway. Boston Harbor is visible from downtown Boston for the first time in 50 years and museums, public parks, and development opportunities are planned for this "new " land.[44] Projects such as this require different funding allocation methods, different planning processes, and a different framework for evaluation and accountability.

GARVEE mechanisms can help secure financing from a variety of sources to fund such projects which would otherwise be very difficult to do on a pay-as-you-go basis given the challenges of raising a sufficient amount of up-front capital. Using GARVEEs the price tag of the project is spread over a longer time and beyond the construction period.

4) Possible avoidance of state debt limits
Because GARVEEs have their own sources of repayment—the anticipated federal transportation funds—they often do not count against states' statutory limits on how much debt they can accumulate as with general obligation debts. Therefore, past GARVEE issuances have not been considered in calculations by rating agencies on how much debt a state can afford.[45] Technically the debt of a GARVEE bond is an advance of future federal revenues and therefore not debt in the traditional sense. However, many states do place limits on how much GARVEE debt they can accrue to ensure that the issuance of GARVEEs is not part of an effort to sidestep state legislature authority.

5) Avoiding bond referenda
Unlike traditional municipal bonds for transportation, in many states GARVEE issuances are not subject to public referendum. Such ballot measures can require considerable time, expense, wrangling with state legislatures, outreach campaigns, and other hurdles. Given the nature of GARVEE debt, such public votes are generally not required. This could be considered attractive to state agencies and advocates of GARVEE-funded projects since it avoids the delay and cost required to bring these issues before voters, although it does eliminate some public input common for other transportation investments.

In addition to the vote in Colorado, Arkansas and Alaska are exceptions here. In 1999, Arkansas voters departed from the state's history of avoiding debt by approving a comprehensive road program that includes the issuance of GARVEEs. In 2002, voters in Alaska authorized the state to issue over $100 million in GARVEE bonds for a variety of state projects.

However, not all discussions about GARVEEs are positive. An array of anti-tax advocates, controllers, and new governors have criticized decisions to issue GARVEEs and accumulate debt. Others have condemned GARVEEs as a financing tool because they oppose a particular project the issuances would fund. Below are the key criticisms associated with GARVEEs:

Criticisms of GARVEEs:

1) Interest and other debt related costs

It is critical to remember that the use of GARVEEs (like traditional bonds) produce no new revenues and add to debt service costs. Since GARVEE bonds only borrow from the future rather than produce new money, it is likely that a state's capital program will be subject to significant swings in size—with sharp front-end increases to absorb the additional projects due to the use of GARVEE bonds and sharp declines as debt service costs absorb a portion of the revenue stream in the future. Long term commitment for repayment means that future federal funds (and in some instances future state funds beyond the standard required match) must be used for debt payment many years into the future. This may jeopardize the state's ability to meet changing transportation needs. If debt service becomes too onerous, operations and maintenance funding could be affected.

The debt service associated with GARVEE bonds could then affect current capital projects, operating and maintenance activities, and the ability to match federal funds. If a state's revenues decline, bond referenda fail to pass, or no new resources are available, a state could be forced to remove projects from capital programs and reduce staff, affecting both capital projects and operating programs. SThis arises particularly during periods of economic weakness.

The revenue source for debt service for indirect GARVEES is the federal reimbursement from unrelated projects in the capital program. If a state becomes unable to match federal funds, and, hence, generate federal reimbursements, it could be short of the debt service requirements for its GARVEE bonds. In that case, the likely step would be to reduce other expenses, either by delaying other projects or by cutting operating programs to produce the cash to cover its obligations.

Allowing states to get into a situation where they are unable to match their federal funds defeats the purpose of the innovative finance program: to provide for investment in transportation infrastructure. Front loading a capital program could produce damaging impacts if other projects have to be delayed or operating programs have to be cut to meet debt service requirements.

While the responsibility for GARVEE bonds rests with the states, the federal interest is affected if states become unable to match federal resources and the program fails its intended purposes.

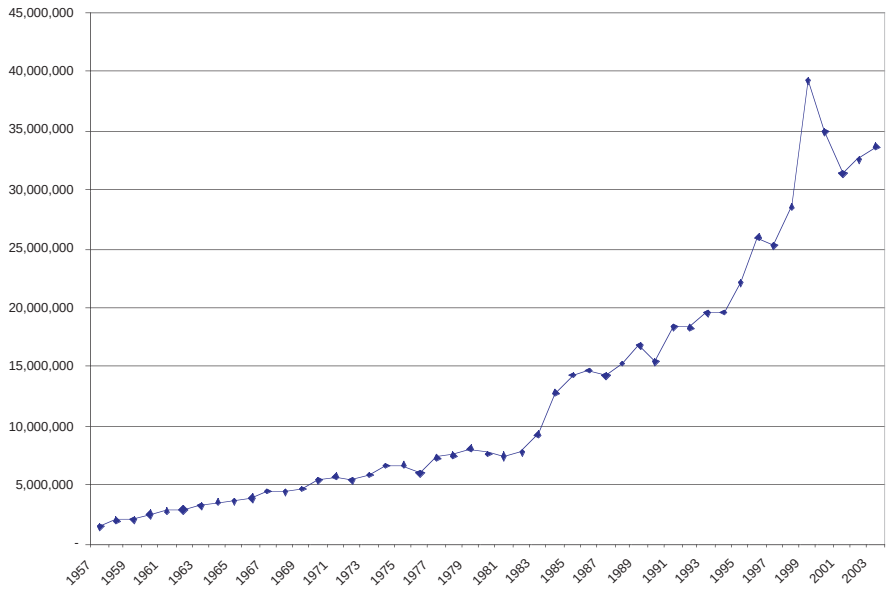
2) Risks regarding federal reauthorization

GARVEE debts are intended to be repaid by future federal funds, as mentioned. The source of those funds is the existing federal aid highway program, a long standing source of transportation revenue. The most distinguishing feature of GARVEEs is that investors are accepting the risk that Congress will continue to authorize highway funds for the full term of the bonds. If, for any reason, federal dollars are not forthcoming, the states are nevertheless solely responsible for repayment.[46]

Federal transportation law, specifically TEA-21, governs annual appropriations for the program. TEA-21 was due to be reauthorized by Congress in September 2003. Instead, the existing law has been extended several times despite a variety of proposals for its reauthorization. Congress' inability to pass a new law has mostly been due to wrangling over the ultimate size of the new law and how that money will be distributed among the states. In the year since TEA-21 expired, very little progress has been made in moving toward an agreement.

The uncertainties and the risk surrounding reauthorization illustrate what Standard & Poor's calls a key credit weakness with GARVEE issuances because the value of GARVEEs in the private market depend on the predictability of the revenue streams.[47] Of course, most observers do acknowledge that the chance that federal transportation funds will not be available is remote and, so far, there have been no defaults since TEA-21 expired.[48] It is nonetheless a substantial concern to the risk-averse. Standard & Poor's also expressed con-

Figure 3. Status of the Federal Highway Trust Fund (net income in thousands)



Source: Federal Highway Administration, "Highway Statistics 2003" (U.S. Department of Transportation, 2004) Table FE-210.

cern about congressional efforts in the late 1990s to eliminate the federal role in most surface transportation activities and devolve all responsibility to the states.[49] And with the current ambiguity regarding the future federal role in transportation, policy experts are once again beginning to question the need for federal transportation program.

There is also concern that annual appropriations of federal dollars could fall short of what is expected. This "appropriations risk" was supposedly addressed by RABA, as discussed earlier. RABA ensured that federal transportation trust fund dollars could only be spent on transportation programs. However, RABA proponents assumed that trust fund dollars would continue their usual yearly increase. And indeed, Figure 3 shows that for many years, the receipts in the federal transportation trust fund (the source for federal transportation spending) experienced dramatic and regular increases. However, since its peak in 1999, receipts in the trust fund declined and then began to rise slowly. There are several reasons for this, including fluctuating proceeds generated by the federal gas tax.[50]

This volatility can affect GARVEE-financed projects directly. For example, the October 2001 finance plan for Boston's Central Artery project assumed that Massachusetts would receive $486 million in transportation funding each year from 2003 through 2005, of which over $200 million was to go to the Central Artery project. However, these receipts wound up much lower than originally projected. To make up for this shortfall—about $100 million each year—the statewide transportation program was slashed by almost one-fifth, and $22 million in other state funding had to be secured to cover the state's existing transportation commitments.[51] Congress ultimately restored this funding shortfall but this highlights the volatility inherent in the existing finance system.

Another consideration related to the federal bill is that most GARVEE issuances extend over more than one authorization period. The last two federal laws both had six-year terms. However, the terms of some GARVEE issuances extend well over 12 years. Obviously, reauthorization risk is compounded when the debt extends across these periods.

3) GARVEEs may be used to avoid increasing taxes or tapping other traditional transportation revenue sources

GARVEEs and other debt instruments could be used to avoid increasing the resources to meet transportation needs. Recently, officials in Maryland, Rhode Island, Kentucky, and Oklahoma have also espoused GARVEE issuances as preferable to raising taxes—specifically, the state fuel tax. This is not uncommon, as states in recent years have been on something of a borrowing spree to pay for transportation projects instead of directly raising revenues. From 1995 to 2003 the amount of transportation revenue "generated" by state borrowing (apart from GARVEEs) increased by 120 percent.[52] And from 1982 to 2001, highway funds from long-term debt increased 273 percent in real terms.[53] Nearly every state has recommended an increase in bonding authority for state highway improvement programs of late.

Certainly, legislative discussions or public referenda to raise transportation resources—such as through the gas tax—are often contentious. So, to some extent, GARVEE debt represents a way for policymakers to avoid acrimonious debate. Ironically, the refusal of some states to increase gas taxes hurt its ability to issue GARVEEs as it jeopardizes an important backstop provision.

"To some extent, GARVEE debt represents a way for policymakers to avoid acrimonious debate over transportation funding."

4) GARVEEs are tools generally only useful for states

GARVEEs are only useful tools for state DOTs and state legislatures. Since the repayment of GARVEEs hinges on receipt of future federal funds, only those that receive those funds are eligible. In other words, since states continue to receive the vast majority of federal transportation funds, generally only states can issue GARVEEs. Metropolitan planning organizations (MPOs), for example, received only 5.8 percent of all highway apportionments between 1998 and 2002, or about $8 billion over 4 years divided among over 110 MPOs.[54] As the FHWA points out, although GARVEE projects may benefit local governments and MPOs and are often chosen from their plans or with their approval, local governments and MPOs are not able to use GARVEE financing to accelerate transportation projects.[55] California MPOs are an exception since, starting in 1998, the state has suballocated all of the funds from the federal Congestion Mitigation and Air Quality (CMAQ) program as well as 75 percent of the remaining program funds to the metropolitan level. In other states, however, even where metropolitan suballocation exists, it is generally not enough to leverage the future funds.

5) GARVEEs do not make bad projects better

Finally, it is worth noting that in many states the biggest controversy with GARVEEs seems to stem from the projects themselves. Securing funding for a project should not preclude good planning. In the end what matters more than the finance tool used to support a project is the project itself. A good project that will provide direct and tangible benefits and cannot wait for pay-as-you-go financing should be a candidate for the accelerated delivery that GARVEEs provide. Although GARVEEs are sometimes cited as an element of project justification, they are simply financing mechanisms and as such, do not enhance the quality of a project itself.

V. Recommendations

As policymakers at the state level consider financing options to pay for transportation projects, they should be careful to consider both positive and negative aspects of GARVEE-type debt instruments. As this report illustrates, using GARVEEs as a financing tool to accelerate development and construction of needed projects where the cost of inflation outweighs the debt costs makes sense. However, caution should be exercised if GARVEEs are being considered as a device to advance projects that might have difficulty getting approved, or to advance projects to avoid consideration of raising user fees. Following are some policy recommendations for the state and federal government to consider as discussions about GARVEEs continue:

- **Federal guidance should be strengthened.** The lack of detailed federal guidelines on the use of financing mechanisms like GARVEE bonds has left the states in a situation of having to learn on their own how to apply these tools. It is in the federal interest to provide state DOTs and transit agencies careful guidance on the use of GARVEEs and to serve as a clearinghouse to lessons learned. In this regard the existing guidance should be strengthened to provide a comprehensive assessment of the use of GARVEEs to date. At a minimum, the information and work collected by the FHWA and reported in *Innovative Finance Quarterly* should be used as a starting point for enhancing existing guidance. Federal guidance should strive to tighten the criteria for GARVEE-financed projects by requiring applicants to demonstrate cost savings and benefits from project acceleration (including safety, mobility, economic development, etc.), require maintenance and operations costs be considered, and improve non-federal backstops. Special emphasis could be placed on transformative projects that radically enhance the urban landscape.
- **State authorizing legislation for GARVEEs should also establish criteria.** Several state legislatures and other policymakers have gone to great lengths to ensure GARVEE debt is not overly burdensome. At a minimum, states should specify project eligibility beyond federal rules and define their own basic set of selection criteria. Yet states must also set limits on the percentage of federal funds that may be obligated to GARVEE debt at any given time. They should also set limits as to the maximum terms of the bonds and identify at least one stable provision for backstops.[56] GARVEE use decisions should be made in the context of an overall state debt management plan. States should establish procedures on when and if to issue GARVEEs that consider the amount of any proceeds remaining from previous GARVEEs, the readiness of projects to use the funds, and the impact the issuance has on current and future revenue streams.
- **States and the federal government should help local and regional authorities take advantage of GARVEEs.** Since states are the direct recipients of federal funds, GARVEEs are a tool only they can use. However, now that the programs have been tested at the state level, they should be made available to MPOs. MPOs should be given greater resources and flexibility to tailor transportation solutions to the distinctive realities of individual metropolitan areas. To do this, federal funds suballocated to the metropolitan level should be substantially increased as that is where most transportation challenges remain and where most transportation funds are generated.

VI. Conclusion

GARVEEs are one of a handful of interesting and innovative ideas for financing transportation projects. Nationwide, as additional transportation needs continue to be identified and as finding revenues to pay for those needs becomes more competitive, more states will increasingly look to them to pay for a range of projects.[57]

While the collateral that backs GARVEE debt is different than traditional borrowing, it is debt all the same. And with tremendous uncertainty around the future role of the federal government in transportation, prudence should hold sway over governors, state legislators, and other officials eager to demonstrate action in dealing with transportation challenges in a constrained budget environment. The onus, as always, is on the projects themselves and not simply the financing mechanism.

Methodology

Information for this research is derived from a variety of sources. Most prominently were the FHWA and the contributors that make up its informal Innovative Finance Division. This group is made up mostly of FHWA staff throughout the nation. They publish FHWA's *Innovative Finance Quarterly,* which provides a wealth of information about GARVEE bonds and other innovative financing tools (**www.fhwa.dot.gov/innovativefinance/ifpubs.htm**). Also notable is the American Association of State Highway & Transportation Officials' Innovative Finance for Surface Transportation website (**www.innovativefinance.org**). The Bond Buyer is also a tremendous source of current information and in-depth stories for the municipal bond industry.

Appendix Table: GARVEE and RVEE Transactions to Date

State	Date of Issuance	Amount	Brief description	Type	Backstop Provisions	Term
Alabama	April 2002	$200,000,000	County bridge replacement program	Naked Direct	None. Bond insured obtained.	15 years
Alaska	April 2003	$102,800,000	Eight road and bridge projects.	Backstopped Direct	Full faith and credit of state, plus state motor fuel taxes	10 years
Arizona	June 2000	$39,400,000	First of three issuances for accelerated completion plan for the Maricopa Freeway System, including reconstruction/expansion of Superstition Highway (U.S. 60) and construction of Red Mountain Freeway (Loop 202).	Naked Direct	None. Not insured.	4 years
Arizona	May 2001	$142,900,000	Second of three for Maricopa freeway projects.	Naked Direct	None. Not insured.	7 years
Arizona	July 2003	$125,200,000	Third of three for Maricopa freeway projects.	Naked Direct	None. Bond insurance obtained.	12 years
Arizona	May 2004	$51,000,000	Arizona's share of the cost to construct the Hoover Dam Bypass Bridge.	Naked Direct	None. Bond insurance obtained.	10 years
Arkansas	March 2000	$175,000,000	First of three issuances for interstate repaving project	Backstopped Direct	State diesel tax, and pledge of full faith and credit of state.	14 years
Arkansas	July 2001	$185,000,000	Second of three issuances for interstate repaving project	Backstopped Direct	State diesel tax, and pledge of full faith and credit of state.	5 years
Arkansas	July 2002	$215,000,000	Third of three issuances for interstate repaving project	Backstopped Direct	State diesel tax, and pledge of full faith and credit of state.	5 Years
California	March 2004	$615,000,000	A variety of highway and high occupancy vehicle (HOV) expansion projects around San Diego, San Jose, and Riverside.	Naked Direct	None. Bond insurance obtained.	10 years
Colorado	May 2000	$537,000,000	First of four issuances to fund 28 highway projects throughout the state, including the widening of interstates 25 and 225 in metropolitan Denver.	Backstopped Direct	State highway users trust fund and 10% of state sales tax. Uninsured short–term and insured long term.	15 years
Colorado	April 2001	$506,400,000	Second of four issuances to fund state highway projects.	Backstopped Direct	State highway users trust fund and 10% of state sales tax. Uninsured short–term and insured long term.	15 years
Colorado	June 2002	$208,300,000	Third of four issuances to fund state highway projects.	Backstopped Direct	State highway users trust fund and 10% of state sales tax.	15 years
Colorado	August 2003	$100,000,000	Fourth of four issuances to fund state highway projects.	Backstopped Direct	State highway users trust fund and 10% of state sales tax. Uninsured short–term and insured long term.	15 years
Colorado	May 2004	$134,600,000	Major reconstruction and widening of I-25 through Colorado Springs	Backstopped Direct	State highway users trust fund and 10% of state sales tax	12 years
Maine	December 2004	$50,000,000	Bridge replacement project	Naked Direct	None. Bond insurance obtained.	11 years

Appendix Table: GARVEE and RVEE Transactions to Date (continued)

State	Date of Issuance	Amount	Brief description	Type	Backstop Provisions	Term
Massachusetts	June 1998	$600,000,000	First of two issuances for Central Artery Project.	Backstopped indirect (Rvee)	Ten cents per gallon from state's gas tax receipts.	15 years
Massachusetts	November 1998	$321,700,000	Second of two issuances for Central Artery Project.	Backstopped indirect (Rvee)	Ten cents per gallon from state's gas tax receipts.	15 years
Michigan	July 2001	$400,000,000 $200,000,000	First of two issuances for the "Build Michigan II" program to fund rehabilitation and maintenance projects throughout the state	Naked, indirect (Rvee)	None. Bond insurance obtained.	7 years
Michigan	November 2002		Second of two issuances for "Build Michigan II"	Naked, indirect (Rvee)	None. Bond insurance obtained.	7 years
Mississippi	June 1999	$200,000,000	Statewide four-lane construction program.	Backstopped indirect (Rvee)	Various state transportation revenues.	10 years
New Jersey	March 1999	$151,500,000	Mass transit. To purchase rolling stock and buses	Naked Transit	None. Bond insurance obtained.	9 years
New Jersey	January 2000	$234,000,000	Mass transit. To purchase rolling stock.	Naked Transit	None. Bond insurance obtained.	15 years
New Mexico	September 1998	$100,230,000	To widen 121 miles of State Route 44 (now US 550).	Naked Direct	None. Bond insurance obtained.	18 years
New Mexico	February 2001	$18,500,000	Reconstruct US 70 within the Lincoln National Forest.	Naked Direct	None. Bond insurance obtained.	15 years
New Mexico	April 2004	$700,000,000	To fund the first phase of Governor Richardson's Investment Partnership (GRIP) , a variety of projects throughout he state. Also refunds all prior GARVEEs.	Naked Direct	None. Bond insurance obtained.	20 years
Ohio	May 1998	$70,000,000	First of three issuances for the Spring-Sandusky highway and bridge project.	Backstopped Direct	Moral obligation pledge to use state gas tax funds and seek general fund appropriations in the event of federal shortfall. Also using toll credits as the state matching share for reimbursements to maximize transportation resources.	10 years
Ohio	August 1999	$20,000,000	Second of three issuances for the Spring-Sandusky highway and bridge project.	Backstopped Direct	Moral obligation pledge to use state gas tax funds and seek general fund appropriations in the event of federal shortfall. Also using toll credits as the state matching share for reimbursements to maximize transportation resources.	10 years

Appendix Table: GARVEE and RVEE Transactions to Date (continued)

State	Date of Issuance	Amount	Brief description	Type	Backstop Provisions	Term
Ohio	September 2001	$100,000,000	Third of three issuances for the Spring-Sandusky highway and bridge project.	Backstopped Direct	Moral obligation pledge to use state gas tax funds and seek general fund appropriations in the event of federal shortfall. Also using toll credits as the state matching share for reimbursements to maximize transportation resources.	10 years
Ohio	September 2002	$135,000,000	Maumee River Bridge project.	Backstopped Direct	Moral obligation pledge to use state gas tax funds and seek general fund appropriations in the event of federal shortfall. Also using toll credits as the state matching share for reimbursements to maximize transportation resources.	9 years
Oklahoma	March 2004	$47,575,000	A variety of state projects	Naked Direct	None. Not insured.	15 years
Puerto Rico	April 2004	$136,000,000	A variety of state projects	Backstopped Direct	Mix of tax and fee revenue.	17 years
Rhode Island	November 2003	$217,000,000	Several statewide projects , including relocation of I-95 through Providence and Seconet River bridge	Naked Direct	None. Bond Insurance obtained.	12 Years
Virgin Islands	October 2002	$20,800,000	Two port projects	Naked Direct	None. Bond Insurance obtained.	8 Years
Virginia	November 2000	$400,000,000	Various state projects	Backstopped Indirect (Rvee)	Legally available transportation trust fund revenues and other funds designed by the General Assembly.	10 years
TOTAL		**$7,470,705,000**				

Endnotes

1. National Association of State Budget Officers, "The Fiscal Survey of States, November 2002 and December 2004" (Washington: 2004).

2. Robert Puentes and Ryan Prince, "Fueling Transportation Finance: A Primer on the Gas Tax" in B. Katz and R. Puentes, *Taking the High Road: A Metropolitan Agenda for Transportation Reform* (Brookings Press forthcoming).

3. Some localities also levy taxes on gasoline and some revenue sources like property taxes and general revenue sources are important for funding local projects. However, this paper focuses on the state and federal revenue flows.

4. Puentes and Prince, 2005.

5. Ibid.

6. Merle Hackbart, "Innovative Financing Options for Kentucky's Transportation Infrastructure," University of Kentucky Transportation Center: Lexington. KTC-01-08/U11-00-1F (2002).

7. Although the federal highway data presents it as such, it is questionable whether bond proceeds should be included here as "revenues." Bond proceeds must be repaid in the future, along with the interest payments, presumably by other sources of revenue—such as the state gas tax revenue or from general funds.

8. There is also burgeoning interest in private sector bonds to finance transportation projects. The Internal Revenue Service (IRS) allows states and local governments to issue tax exempt private activity bonds to finance a wide variety of infrastructure projects but generally not highway or freight transfer facilities.

9. Federal Highway Administration, "Highway Statistics Summary to 1995" (U.S. Department of Transportation, 1997) FHWA-PI-97-009, Table SB-202; and "Highway Statistics 2002." Table SB-2.

10. Tom Howard, "Highway Bonds: An Emerging Option for Increasing Highway Financing," *Public Roads,* U.S. Department of Transportation, Turner-Fairbank Highway Research Center, McLean, VA: Volume 58, No. 4 (1995).

11. Jennifer R. Mayer, "Tools in the Toolbox: Strategies for Effective Application," Federal Highway Administration U.S. Department of Transportation. 27 October 2002.

12. William Ankner, "Financing Intermodal Transportation" (Reconnecting America and the Center for Neighborhood Technology, 2003).

13. It must be noted that the U.S. DOT does not "award" these funds but merely distributes funds to the states. Congress' multi-year authorizations create categories of funding and specify formulas and procedures that determine how much of each funding category goes to each state. Although the exact amount of the authorizations that may be obligated in a single year is limited by the annual budget process, the multi-year funding allows states to estimate and plan their capital program. States normally choose projects, and request authorization from U.S. DOT to proceed. The federal government does not choose the projects, but ensures that the projects selected fit the category of funds to be used, and follow federal requirements. This is important in terms of credit risk because (since funds are typically not project-specific) states can prioritize debt service funding. Also, since the limitations on obligations are not typically category-specific, states have a greater ability to direct funding towards their priorities.

14. Nancy Bennett, "The National Highway System Designation Act of 1995," *Public Roads,* U.S. Department of Transportation, Turner-Fairbank Highway Research Center, McLean, VA: Volume 59, No. 4 (1996).

15. See U.S. Code Title 23 "Highways" §101(a) "Definitions and Declarations of Policy," 37 (b).

16. Congressional Budget Office, "Innovative Financing of Highways: An Analysis of Proposals" (1998).

17. Washington State Department of Transportation, "Transportation Finance Options" (2002).

18. See U.S. Code Title 23 "Highways" §105 "Minimum Guarantee."

19. Surface Transportation Policy Project, "TEA-21 & RABA: Why is There Less Money?" Washington, DC (2002).

20. David Hoffman, " NJ Transit Still Ahead of the Rest With Second GARVEE Sale," *The Bond Buyer,* November 5, 1999, No. 30763, Vol. 330; Pg. 3

21. GARVEEs do not actually appear in federal legislation, although the program is codified in the U.S. Code (Code of Federal Regulations 23, sec. 122).

22. Federal Highway Administration, "GARVEE Bond Guidance," U.S. Department of Transportation, 2004, **http://www.fhwa.dot.gov/innovativefinance/garvee.htm**.

23. See: **http://www.fhwa.dot.gov/innovativefinance/ifpubs.htm**

24. Federal Highway Administration, "Innovative Finance Primer," U.S. Department of Transportation, 2002. FHWA AD-02-004,

25. Federal Highway Administration, " Case Studies: Federal Highway Funds and Debt Finance," in Innovative Finance, Miriam Roskin, ed., Vol.4, No.3, p.1. Department of Transportation (1998).

26. However, in order to receive the reimbursements states have to devise a way of paying for the Federal-aid eligible project in the first place.

27. Given the ambiguity with the accepted definitions for GARVEEs, there may not be complete agreement with our list of issuances versus other lists. See the methodology section for information about our prime sources. South Carolina, for example, issues bonds in 1999 and 2001 that some have referred to as GARVEE-like. We chose not to include them since the market rated them as traditional highway bonds. Transit GANs and other issuances also cause some confusion when the funds use full funding grant agreements since the funds are much more discretionary on the federal level and subject to annual appropriations.

28. "Summary of Proceedings," Wyoming Legislature Select Committee on Capital Financing and Investments, September 26 and 27, 2002, Laramie, Wyoming. http://legisweb.state.wy.us/2002/interim/capfin/minutes/min0926.htm.

29. Philip Angelides, "Analysis of GARVEE Bonding Capacity," Office of the California State Treasurer, Sacramento, 2004.

30. Cambridge Systematics, Inc., "Performance Review of U.S. DOT Innovative Finance Initiatives," Federal Highway Administration, 2002.

31. Richard F. Weingroff, "Federal-Aid Highway Act of 1956: Creating the Interstate System," Federal Highway Administration, *Public Roads,* U.S. Department of Transportation, turner-Fairbank Highway Research Center, McLean, VA: Volume 60, No. 1 (1996).

32. Richard F. Weingroff, "Senator Harry Flood Byrd of Virginia: The Pay-As-You-Go Man," Federal Highway Administration, undated. **http://www.fhwa.dot.gov/infrastructure/byrd.htm**.

33. Virginia Auditor of Public Accounts, "_Special Review of Cash Management and Capital Budgeting Practices, Virginia Department of Transportation," Richmond: 2002.

34. Congressional Quarterly, " The Government Performance Project: Virginia," 2001, **http://governing.com/gpp/2001/gp1va.htm.**

35. Elizabeth Albanese, "Deal in Focus: Colorado Hitting the Road with $220 Million Trans Sale," *The Bond Buyer*, June 4, 2002, p. 30

36. Colorado Supreme Court, "Submission of Interrogatories on House Bill 99-1325," No 99SA108, April 23, 1999.

37. Humberto Sanchez, "Capital Region Transportation Board OKs Intercounty Connector," *The Bond Buyer*, November 18, 2004, p. 4.

38. Cambridge Systematics, Inc., "Performance Review of U.S. DOT Innovative Finance Initiatives," Federal Highway Administration, U.S. Department of Transportation, 2002. **http://www.fhwa.dot.gov/innovativefinance/perfreview/.**

39. Federal Highway Administration, "GARVEE Roundup," *Innovative Finance Quarterly* Vol. 9, No. 1 (2003). **http://www.innovativefinance.org/news_innovations/02242003_garvees_advance_in.asp.**

40. Carole Keeton Rylander, " Paving the Way: A Review of the Texas Department of Transportation," Texas Comptroller of Public Accounts. 2001; available at **http://www.window.state.tx.us/txdot**.

41. Cambridge Systematics, Inc., 2002.

42. Daniel L. Dornan, "Asset Management and Innovative Finance," Transportation Research Board Second National Conference on Transportation Finance. Washington, DC: National Academy Press.(2000).

43. FHWA, 2002.

44. Alan Altshuler and David Luberoff, *Mega-Projects: The Changing Politics of Urban Public Investment,* (Brookings Press, 2003).

45. It is, however, important to note that this may not be true in all instances. According to the Maryland Department of Legislative Services' analysis of that state's debt service requirements, Fitch Ratings does consider these federal transportation dollars as a state resource and recommends that GARVEE debt levels be considered "when debt affordability is examined." (See: Maryland Department of

Legislative Services, "MDOT Debt Service Requirements," Operating Budget Analysis Documents - Fiscal Year 2005, Report J00A04 (2004)).

46. W. Bartley Hildreth and H. Edward Flentje, "State Initiatives in Transportation Investment: The Evolution from Anti-Debt to Debt Financed Programs in Kansas," National Tax Association Proceedings, 1999.

47. Kurt Forsgren and others, "Public Finance Report Card: Federal Transportation Grant-Secured Obligation," (San Francisco: Standard & Poor's, 2004).

48. Jennifer Mayer, "GARVEEs at the Grassroots: New State/Local Partnerships," Federal Highway Administration, U.S. Department of Transportation, 2004. **http://www.innovativefinance.org/events/pdfs/event_resource_vanderbeek2004.pdf**.

49. Standard & Poor's, "Public Finance Criteria," New York: 2000.

50. See Martin Wachs, "Improving Efficiency and Equity in Transportation Finance," in B. Katz and R. Puentes *Taking the High Road: A Metropolitan Agenda for Transportation Reform* (Brookings Press, forthcoming).

51. Federal Highway Administration, "Report on the October 2001 Finance Plan for the Central Artery/Tunnel Project," Office of Inspector General Audit Report, IN-2002-086, 2002.

52. Federal Highway Administration, "Highway Statistics 1996 and 2002" (U.S. Department of Transportation, 1997 and 2003) Table SF-1.

53. Government Accountability Office, "Trends in Federal and State Capital Investment in Highways," GAO-03-744R (2003).

54. Robert Puentes and Linda Bailey, "Improving Metropolitan Decision Making in Transportation: Greater Funding and Devolution for Greater Accountability" in B. Katz and R. Puentes *Taking the High Road: A Metropolitan Agenda for Transportation Reform* (Brookings Press, forthcoming).

55. Mayer, 2004.

56. The Texas Comptroller laid out similar attributes in a report on possible GARVEE issuances in that state. See: Rylander, 2001

57. In examining transportation spending needs some have also recommended reassessments of transportation plans and projections, and consideration of demand reduction measures that include changes in land use patterns to reduce the growth in vehicle miles traveled.

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Brookings Institution Metropolitan Policy Program

About the Brookings Institution Series on Transportation Reform

In order to inform the debate and discussion about the nation's surface transportation laws the Brookings Institution has initiated a series of analyses designed to assess federal, state, and metropolitan transportation reform. The purpose of this effort is to frame the policy debate around the most pressing challenges facing the cities, suburbs, and metropolitan areas. The papers and essays that are part of this Transportation Reform Series provide options for reform so policy makers can build upon the progress and momentum of earlier transportation laws. Beyond the federal debate, the papers lay out an agenda that responds directly to those responsible for putting transportation policy into practice—especially leaders on the state, metropolitan, and local levels.

In the Series:

- *TEA-21 Reauthorization: Getting Transportation Right for Metropolitan America*
- *Fueling Transportation Finance: A Primer on the Gas Tax*
- *Slanted Pavement: How Ohio's Transportation Spending Shortchanges Cities and Suburbs*
- *Improving Efficiency and Equity in Transportation Finance*
- *The Long Journey to Work: A Federal Transportation Policy for Working Families*
- *The Mobility Needs of Older Americans: Implications for Transportation Reauthorization*
- *Improving Metropolitan Decision Making in Transportation: Greater Funding and Devolution for Greater Accountability*
- *Highways and Transit: Time to Level the Playing Field in Federal Transportation Policy*
- *The Need for Regional Anti-Congestion Policies*
- *Washington's Metro: Deficits By Design*

Forthcoming:

- *Protecting America's Highways and Transit Systems Against Terrorism*
- *Surface Transportation Data and Information Needs for the 21st Century*
- *Taking the High Road: A Metropolitan Agenda for Transportation Reform*

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