

Commission Briefing Paper 5C-04

Identification of Opportunities to Improve the Leveraging Potential of Federal Transportation Funding with other Public Sector and Private Sector Resources

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Introduction

This paper is part of a series of briefing papers to be prepared for the National Surface Transportation Policy and Revenue Study Commission authorized in Section 1909 of SAFETEA-LU. The papers are intended to synthesize the state-of-the-practice consensus on the issues that are relevant to the Commission's charge outlined in Section 1909, and will serve as background material in developing the analyses to be presented in the final report of the Commission.

An implicit goal of the federal surface transportation program is to spur greater investment in transportation by states, localities, and private entities. Any future federal program will likely seek to maximize the potential amount of investment that can be leveraged. This paper will review the literature with regard to both indirect and direct leveraging of federal transportation investment. The paper concludes with an evaluation of potential future policy options based on the research reviewed.

Background and Key Findings

This paper reviews existing literature and studies on indirect and direct leveraging of federal transportation investments. Direct leveraging is a fairly recent phenomenon stemming from innovative finance programs introduced in the 1990s, thus there is somewhat less literature and information to review regarding those programs. A review of the available literature and information suggests the following:

- *There is no strong evidence that the substitution of federal transportation funds for state funding is occurring in the long-term.*
- *There are multiple policy options that could potentially increase overall investment in transportation, but each comes with a different set of political risks and tradeoffs.*
- *Direct leveraging programs are successful in spurring or speeding transportation investments, but their scope is limited.*
- The overall purpose of the federal program must ultimately determine the relative role of direct and indirect leveraging.

Indirect Leveraging Literature

Indirect leveraging can be thought of as the effect of all federal investments on state and local expenditures. Direct leveraging refers to the programs put forward by the federal government

with the explicit purpose of leveraging other investments. This first section reviews indirect leveraging, while the next section looks at direct leveraging.

The primary issue with respect to indirect leveraging is whether federal investment creates a “substitution effect” wherein States reduce their expenditures on transportation as a response to increased federal investment. If this is indeed the case, there is a strong argument that federal investment should either be devolved or diminished, or at least accompanied by restrictions that make decreased state investment more difficult.

Available Literature

The literature on this subject is inconclusive in its assessment of the substitution effect. Cho and Wright (2006) wrote the most recent article tackling the subject, in which they analyzed surveys of state administrators over the last 75 years to measure their perspective on federal aid impacts. Although not specific to transportation or highways, this analysis finds that in general, federal aid tends to be a stimulus for state spending. They do find, however, that the overall influence of federal aid is declining.

The Cho and Wright work is necessarily biased because the data is based on the responses of state administrators, who are likely to claim that federal aid is a stimulus. Moreover, federal aid could be a stimulus for many other funding areas, but not for transportation, and this study would never pick that up.

Other works have focused more directly on highway funding. Knight (2002) considered political factors more closely in his model than had previous models and found that federal highway spending tends to crowd out state spending. He suggests that reducing the federal share could increase overall spending on highways at no cost to the federal government.

Gamkhar (2000) also finds that there is some substitution using a different model. This study indicates that when federal spending decreases, state and local spending falls, but that when federal spending increases, state and local spending does not change significantly. This implies that states and localities do not increase their funding as a response to federal spending, although they do not decrease their funding either. The study was looking at data from 1976-1990, years during which, as Gamkhar noted, there were some substantial cutbacks in federal highway grants.

One of the few works that actually addresses the issue of an ideal matching rate for federal highway grants is Gramlich (1990). Although this study does not directly confront the issue of substitution, it argues that the ideal match rate would be aligned with the percentage of out-of-jurisdiction traffic. For example, the average out of state highway traffic on an interstate is about 30 percent, and therefore the federal share should be approximately the same percentage. This would more efficiently align costs borne with benefits received, and arguably could create a more efficient investment pattern that could eventually result in better funding for infrastructure priorities. However, it is possible that federal shares at such low levels (30% and less) would be impractical in terms of administrative efficiency.

Finally, and perhaps most importantly, GAO (2004) performed a specific study on the issue of substitution that used a model based on the Knight and Gamkhar models to determine if there has been substitution of federal funds for state funds in transportation. Keeping other factors constant, the model attempts to isolate the effects of federal highway grants on state transportation funding. The study concludes that there has been substantial substitution, mostly based on the fact that federal funding increased at a higher rate than state and local spending in the four years following enactment of TEA-21 (1998-2002).

Analysis

An inherent problem for any model attempting to measure this issue is that they are necessarily trying to predict what would have happened if circumstances were different. Each model intends to measure what states would have spent had the federal government not increased its spending. This is not a knowable phenomenon, and can only be estimated based on reasonable assumptions. Even with reasonable assumptions, any given study is questionable due to the inherent difficulty involved in making such predictions.

There is reason to question the findings from each of the works that are based on models. The Knight study fails to take into account local spending and only measures state responses to federal grants, therefore missing a key component of the substitution issue. The Gamkhar study is looking at data from a specific time period of 1976-1990, before ISTEA established the 80-20 funding structure across all of the surface transportation grant programs, and therefore its relevance can be questioned.

The GAO study is the most comprehensive and also the most conclusive in its findings. However, even that study is plagued by the difficulty inherent in such an analysis. The study revealed that state funding increased at a much higher rate than federal funding overall between 1982 and 2002, and yet claimed that there is substitution going on. This is due to the fact that in the years following TEA-21 (1998-2002) which encompassed an economic downturn nationwide and the worst state fiscal crisis in forty years¹, there was a drop in state funding of 4% while federal funding, set in motion in 1998 during a booming economy, continued to grow at a rate of 40%.

The GAO study was met with substantial criticism when it was released. One reason for this is that the GAO's confidence level for their substitution estimate is actually quite low as it admits to a 79 percent probability that there was no substitution at all. Another critical issue regarding the GAO study is that it draws very strong conclusions regarding substitution based on many questionable assumptions. Although the study takes into account many factors such as fiscal capacity, tax price, and state preferences, these proxies cannot adequately capture the multiple issues that can affect state funding for transportation. For example, personal income is used as a proxy for fiscal capacity, but personal income can increase when taxes are cut. A state that cuts taxes, increasing personal income and perhaps reducing spending capacity, would be seen by the model as having greater spending capacity.

¹ Discussion with Jack Basso, former FHWA CFO, former Assistant Secretary for Budget and Programs at U.S. DOT, and currently with the American Association of State Highway Transportation Officials (AASHTO), December 2006.

Other experts in the field have pointed to the New Starts program as an example of how federal leveraging can work². The program statutorily requires an 80-20 federal-state match rate, but due to competition for the available funding the actual match rate is now about 50-50. Given that the New Starts program has been increasing in overall size, this implies that federal investment has effectively leveraged state and local investment in new transit facilities. This follows an overall trend of a reduced Federal share in all transit programs, trending downward from 80 percent of funding in the 1970s to the 40 percent range now, even as overall capital investment in transit has been growing. This downward trend in the federal share of New Starts has been accompanied by a shift in federal transit investment from older urban areas to newer systems in higher-growth regions, smaller metropolitan regions, as well as rural areas.

Direct Leveraging Literature

Direct leveraging in this context refers to the following federal programs: the Transportation Infrastructure and Finance Innovation Act (TIFIA), Railroad Rehabilitation and Improvement Financing (RRIF), Grant Anticipation Revenue Vehicles (GARVEES), Private Activity Bonds (which have yet to be issued under the new eligibility for highways and intermodal projects established by SAFETEA-LU) and State Infrastructure Banks (SIBs). Each of these programs attempts to leverage federal investment without providing direct grants but instead to generate increased capital by backing investments from other sources. The consensus on their effectiveness is discussed below.

Available Literature

FHWA (2002) commissioned a report from Cambridge Systematics evaluating the effectiveness of such initiatives. Overall the study found that for each federal dollar invested in such projects, \$3.40 of construction investment was leveraged. This is an improvement over the calculated \$1.25 leveraged by each federal dollar invested in grant programs for transportation.

On the other hand, the total amount invested in ten years of these programs was \$29.1 billion. Although the amount leveraged is impressive, the total funding amount still pales in comparison with the size of the overall federal program. These initiatives represent a niche in transportation funding that is valuable for specific projects, but there is little evidence that they can be used to substitute for actual grants.

However, there may also be additional benefits from these programs aside from monies leveraged. The FHWA report indicates that many government officials believe that these innovative financing techniques accelerated their proposed projects but this benefit was not quantified. The programs also leveraged \$48 million in private investment from flexible match, and \$63 million in private equity contribution. Although these sums are extremely small compared to the size of the federal program, they indicate that these programs at least have the potential to leverage private investment in transportation.

The 1995 NHS Act established State Infrastructure Banks (SIBs) as a pilot program. A SIB is a revolving fund mechanism for financing transportation projects through loans and credit enhancement. An FHWA (2002) review of the program found that it is serving its niche

² Discussions with Phyllis Scheinberg, currently the Assistant Secretary for Budget and Programs for U.S. DOT and Rich Steinman, FTA, December 2006.

effectively. The report recommended ways to improve the SIB program, but did not find that it could be expanded beyond its niche role.

One recent work by Ryu (2006) critically examines the role of SIBs in leveraging state highway expenditures. This study finds that federal assistance through SIBs does indeed leverage state funds to the point where such assistance is an improvement on direct grants. According to calculations in the study, the marginal fiscal impact of every dollar put into the SIB program by the federal government is \$2.31, and that impact increases cumulatively over the years. The study recommends expanding the program by increasing funding, developing a better understanding of the loan parameters, and estimating overhead and administrative costs of the program. However, he stops short of recommending that the program could actually substitute for direct grants.

U.S DOT (2002) recently performed an internal review of the TIFIA program. TIFIA allows three forms of federal credit assistance – direct loans, loan guarantees, and standby lines of credit – to surface transportation projects. They found that TIFIA leverages almost five dollars in total investment with each dollar of federal investment. However, to date there have been only fourteen projects approved for a TIFIA loan since the program was enacted in 1998.

The RRIF program was established by TEA-21 and provides loans and loan guarantees for railroad capital projects for both private and public entities. Since it was established, the program has provided loans to fifteen different railroads including Amtrak for a total of \$557 million in loans. The RRIF program scope has been limited to railroads, but it has been more successful than other similar programs in spurring private investment and was recently expanded in size to take on larger projects. However, the program was tailored largely to help private railroads who have no other form of federal financial support.

Finally, GAO (2002) analyzed alternative funding mechanisms. They found that such mechanisms have given states additional options to leverage federal assistance, and provided states with greater flexibility. However, they caution against expansion of the programs due to the fact that ultimately such programs force states to take on debt. The debt ultimately must be repaid by some entity regardless of how much money is leveraged. It makes the point that no matter how innovative, such mechanisms are not substitutes for actual direct funding.

Analysis

The consensus on innovative funding initiatives tends to agree that these are tools in a toolbox with limited application, rather than potential substitutes for the rest of the federal surface transportation program³. They are limited to some extent by their specific characteristics. For example, GARVEEs spend future funding from the federal government on current projects, and are only useful as long as the federal program proceeds indefinitely. They do not technically add money at all, but serve only to accelerate a given project. TIFIA has funded only a relatively small number of projects which are typically complicated financings that do not fit into any other category of funding⁴. Also, TIFIA projects typically must have a dedicated revenue source from tolls or taxes. The reviews on all of these initiatives are positive, however, while they are

³ Basso and Scheinberg.

⁴ Scheinberg.

valuable in their own right and are likely to be continued and expanded, their complete substitution for comprehensive grant programs would require a significant change in public policy.

Policy Options

The analysis above suggests some potential federal policy options for increasing transportation investment from other sources. These are explored below with respect to both direct and indirect leveraging.

The most oft-mentioned policy option regarding substitution, and one that strongly affects indirect leveraging, pertains to the federal match rate. The GAO study, for example, recommends “revising federal matching requirements to increase the percentage of public costs that must be paid for with state and local funds.” GAO recommends two specific approaches – 1) Increasing the required state match or 2) Counting only state spending in excess of a base period as counting towards the matching requirement.

One problem that GAO acknowledges with the first approach is that states that cannot provide the additional funds necessary to meet the new matching requirements will suffer from decreased overall capital investment and might have to leave federal funds on the table. Some states will be able to provide the additional funds necessary to meet the new requirements, but many of these states are already funding some federally-eligible capital projects entirely with state resources. They are likely to spread their federal funding over a greater portfolio of projects while not actually increasing their overall investment in transportation. Finally, the variation between states is so large and the stakes high enough that any attempt to set the matching requirement would be likely to become highly controversial. This could lead to match rates being set in a politically-charged environment, without the certainty of achieving higher overall investment. Nonetheless, if matching rates could be set at an ideal level, this could potentially increase state spending on transportation.

The second recommendation counts on states to increase their funding over a base period, and thus does not differentially affect states with well-funded or poorly-funded programs. The benefit of this approach is that it provides a leveraging incentive for all states without changing the current matching requirements. Instead it encourages all states to increase their transportation funding in order to receive federal funds. However, whether it leverages additional investment or reduces the overall federal role depends on where the base period is established and the available resources of each of the individual states.

The evidence presented above with respect to direct leveraging programs indicates that it is not likely that such programs would ever shoulder a substantial portion of the federal surface transportation program in their current form. This may be due in part to the fact that the states rely so strongly on grant programs right now, but even a slow transition to a greater emphasis on direct leveraging would encounter substantial political resistance.

Another important policy option to consider is changing the overall federal funding formulas to reflect state investment in transportation. Under this option federal funding would increase for states that show substantial investment of their own resources in transportation. Such a change

could be applied to the Equity Bonus program, or to any of the core highway funding programs, in order to provide strong incentives to states for new toll roads, increased gas taxes, or other revenues that they might be better equipped than the federal government to levy. A similar option, termed “maintenance of effort” makes state spending on transportation a pre-condition for receiving federal funds, using a stick rather than a carrot. Such a policy would eliminate substitution by keeping state investment at least constant, and thus would punish states for cutting their transportation funding.

Conclusions

Perhaps one of the most important conclusions one can draw from each of these policy options is that the question of substitution – whether states spend less on transportation if federal funding is increased – is not a major concern. A review of the available evidence suggests that increasing federal grants will not necessarily lead to substitution on the part of states.

The expansion of the Federal surface transportation grant programs is likely to increase overall investment, although it is important to recognize that there may be year-to-year and region-to-region variations. Similarly, reducing the Federal share as has occurred in the transit New Starts program, and creating incentives for states to maintain or increase their shares of funding are also likely to boost overall investment. For the most part the increased state share is not the result of a legislative requirement, but due to the fact that increased state share was seen as a positive rating factor in the New Starts program (a discretionary program). This would not occur in the same way in a formula program. The real issue is how to provide incentives for states to invest adequately in transportation while not diminishing overall investment. Some of the options presented above could potentially accomplish this, regardless of whether substitution actually exists.

With regard to direct leveraging, the consensus on the major loan programs that have been put forward by the federal government in recent years is that they are successful, but that success is limited to their individual niche. While these programs can sometimes be a key element in a particular transportation project, by providing either the first or last dollar in, they are unlikely to serve as adequate substitutes for comprehensive grant programs, although there are different implications, in terms of budget outlays and fiscal impacts. No matter how much more funding can be leveraged from a loan relative to a grant, the money to pay that loan back must come from somewhere. If the loan is made to a state or public entity, the payback will ultimately come from taxes or user fees.

The role of direct and indirect Federal leveraging is necessarily related to and is a function of the overall purposes of the Federal programs. In order to properly calibrate the role of leveraging, it is vital to examine the broader policy considerations of the relative burdens that should be borne by Federal, state, local, and private sources in achieving the goal of increasing total investment in the Nation’s surface transportation infrastructure.

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CONSOLIDATED COMMENTS FROM MEMBERS OF THE BLUE RIBBON PANEL OF TRANSPORTATION EXPERTS on PAPER 5C-04

One reviewer commented as follows:

This paper focuses on an important aspect of the commission's work. There are four bulleted findings presented at the beginning. All four are accurate and reflect valuable information. The first bullet deserves comment as it states: "There is no strong evidence that substitution of federal transportation funds for state funding is occurring in the long-term." This is noted by the authors as indirect leveraging wherein a state may be tempted to reduce its investment in transportation if more federal funding is available. The authors turn to a variety of literature sources to substantiate this point. As with many policy topics, there is little relevant literature that directly addresses this subject which reflect unquestionable research findings. The sources in this paper taken individually each have weaknesses in their conclusions and potential confounding factors relating to their relevance to this topic.

To the discussion that there may be long-term substitution of federal funds with state funds the following is offered. In high growth states like California, Florida, Texas, Arizona, Utah, Washington and others, the proportion of federal dollars going to transportation is dwarfed by the combined contributions of local and state funds to their programs. Transportation funding at the state level must be taken in aggregate and include both state revenue streams and local funding sources when comparing to the federal contribution. National trends indicate that locals are more and more willing to raise revenues to fund their transportation needs even if the money is spent on the federal-aid system.

Leveraging should not be seen as a major solution. It does provide the states mechanisms to more efficiently utilize some of their existing funding but it should not be presented as a significant solution to a much larger problem. In many cases, the leveraging tools provided are simply more creative ways to utilize money that is already currently coming to the states and don't represent new revenues.

The conclusion in this paper that increasing federal grants won't increase substitution is correct. This would only occur if there was such a plentiful amount of federal-aid that the states were awash in funding --a condition which is never anticipated to occur in the current environment.

Another reviewer commented as follows:

The lack of any real data on federal vs state/local historical investment and the reliance on questionable studies makes the "Indirect Leveraging" section of this paper inconclusive to this. It may be better to just provide an analysis of federal vs state/local transportation expenditure trends to show the past relationship between actual federal and state investment.

Despite the lack of good information on indirect leveraging, the conclusions in the paper seem appropriate. Increased federal aid is not necessarily a substitute for state investment.

This paper represents draft briefing material; any views expressed are those of the authors and do not represent the position of either the Section 1909 Commission or the U.S. Department of Transportation.

Another reviewer commented as follows:

On page 5, the paper states: “The RRIF program scope has been limited to railroads, but it has been more successful than other similar programs in spurring private investment and was recently expanded in size to take on larger projects. However, the program was tailored largely to help private railroads who have no other form of federal financial support.” This is true, but railroads have occasionally been able to obtain financial support from other federal programs (CMAQ, TIFIA, etc.) where important public benefits are produced as a result.