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INNOVATIVE USES OF CREDIT FOR FINANCING INFRASTRUCTURE: HISTORICAL AND CONTEMPORARY PERSPECTIVES

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BACKGROUND:

The New York metropolitan region--New York City and its nine densely populated surrounding counties depends heavily on transportation for its economic, social and cultural prosperity. Over 2.5 million commuters enter and leave the central business district of New York City in private automobiles on an average workday. Approximately 250,000 travelers arrive and depart daily from LaGuardia, Kennedy and Newark Airports and another 4,000 travel via Amtrak intercity trains. New York is also heavily dependent on mass transit, generating 36 percent of the entire country's average yearly mass transit trips via buses, subways and commuter trains, with increasing numbers also crossing the Hudson and East Rivers by ferry.

The New York region's transportation network has become highly congested in the past three decades. With population in the region projected to increase by three percent in the next two decades, congestion will only worsen. Few would dispute the need, therefore, to mitigate this congestion by maintaining, expanding and increasing the efficient utilization of existing transportation infrastructure in the region. Examples of such efforts include extending selected New York City subway lines, increasing inter-modal connections among modes of transport, such as construction of the proposed new Pennsylvania Station or the new Air Train line from Kennedy Airport to its connections with the Long Island Railroad, and implementing congestion mitigation programs on highways, bridges and tunnels in the region.

The main obstacle to implementing projects such as these is raising the necessary capital, since they can cost hundreds of millions, even billions of dollars. Historically, the federal government has been a major source of support, mainly through direct grants. Spending on infrastructure as a

share of total federal spending steadily increased after World War II until the early 1970's. Then spending slowed, declining from 5.4 percent of the federal total in 1977 to less than 3 percent in 1992. Spending at the state level has also declined. (General Accounting Office, 1995: 4-5) With cutbacks in direct government grants the use of credit as a resource for infrastructure finance has become increasingly important, since loans do not deplete the public treasury as rapidly as direct grants. The focus of this report is on innovative approaches to generating credit within the public and private capital markets to aid in financing transportation infrastructure.

The report provides academic and policy context for The City University Institute for Urban Systems (CIUS) programs and initiatives. CIUS sponsors research, policy analysis, workshops and seminars involving government and private officials, academic and policy experts and industry leaders. For example, CIUS recently sponsored a mini-conference concerning the new Pennsylvania Station multi-modal transport terminal and commercial complex in mid-town Manhattan, a project partly funded by the Transportation Infrastructure Finance and Innovation Act (TIFIA) of 1998. TIFIA is a new federal program that introduces innovative uses of credit for financing infrastructure development. Further events sponsored by CIUS will continue to address the complex issues surrounding infrastructure finance for transportation and in other capital intensive areas of the economy.

INNOVATIVE FINANCE

Financing systems for transportation perform three functions: first, raising funds for constructing and operating services; second, providing incentives for the particular modes of

transportation that are developed; and third, providing incentives for the amount and type of utilization of services by consumers. Tolls on highways and fares for urban transit, for example, can fulfill the second and third functions, providing revenue to leverage loans for infrastructure construction as well as influencing how many and at what times consumers utilize those modes. The focus of this report is primarily on the first function of financing systems: raising capital for construction and reconstruction of facilities and, in particular, on innovative credit arrangements for accomplishing this objective.

The definition of "innovation" in finance is historically contingent or relative. Innovative methods of capital formation at one point in time may later become standard practice. For example, in the 1930's banks would not make loans to construct limited access highways because tolls were not considered a reliable guarantee for their investment. Thus the Pennsylvania Turnpike-- the first such toll road in the modern era-- was funded only after the Federal government, during the New Deal administration of Franklin Roosevelt, guaranteed an initial loan of $40 million in 1937. Many pioneering approaches to capital formation were introduced in the New Deal. Those, as well as other more contemporary innovations, will be highlighted in this report.

EARLY HISTORICAL PRECEDENTS

> "Public and private credit are closely allied, if not inseparable. There is perhaps no example of one…flourishing, when the other (is) in a bad state."
> Alexander Hamilton, 1803

Though Hamilton made this statement more than two hundred years ago, (cited in Sylla, 1999: 249) what he said has characterized the American financial system throughout its history, to the present. Since the early 1800's most transport infrastructure projects in this country have been funded through a combination of grants and loans from government and loans and equity contributions from banks, insurance companies and private developers. In other words, infrastructure finance in the United States has always been based on a public-private partnership.

However, early American public-private partnerships took a significantly different form than do their contemporary descendants. Private corporations that constructed American "internal improvements" in the 19th Century--meaning transportation infrastructure such as canals and overland turnpikes--began as quasi-public enterprises. In return for state charters granting them privileges such as protection from lawsuits--"limited liability"--and powers of eminent domain to take land for their projects, these corporations were expected to build infrastructure primarily for public utility. (Roy, 1997: 2) They were held accountable to this public function by boards of directors that included representatives of community institutions such as Churches, charities and government officials. (Roy, 1997: 48-50) At the same time they were intended to provide a profit to their shareholders, though the state often limited the rate of return to a specified percentage. (Larson, 2001: 27) Thus, a crucial policy issue was framed, which remains relevant to this day: is a transportation project created in a public-private framework meant to serve primarily the interests of the public at large or of its shareholders? (Roy, 1997: 44)

The institutional framework for resolving that question changed significantly during the course of the 19th Century.** In the early 1800's state governments purchased stock in canal and turnpike companies, thereby becoming part owners of projects. They also provided loans and credit. However, many of these projects failed to produce a profit for investors due either to lack of adequate planning, inability to overcome the inherent obstacles of crossing the Appalachian mountains and, not least, corruption by management. (Larson, 2001: 32) State governments lost not only their financial investment, but more importantly from an institutional and historical perspective, were also tarnished by the corrupt activities of their private "partners". (Larson, 2001: 35-36) As a result popular opposition developed concerning direct government ownership of economic enterprise and public policy tilted increasingly towards a privatized model of development.

The invention of the steam railroad in the early 1800's foreshadowed the decline of canals and toll turnpikes, since rail was a faster, more efficient mode of transport. However, as Roy has noted, if railroads had developed either earlier or later, not immediately following the controversial history of internal improvements, they might have followed the earlier public service model. (Roy, 1997: 78) Instead, state governments, afraid of being too closely allied with private enterprise, allowed newly incorporated rail companies to act with autonomy, granting them the crucial protections of limited liability and powers of eminent domain. Credit

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** "Institutional framework" means the laws, regulations, norms and organizational forms that affect the financing of transportation infrastructure.

was also extended in the form of loans and tax breaks. Almost one tenth of the land of the continental United States was ceded through direct grants of land, thereby providing much of the capital necessary to construct the network of railroads that came to dominate the transportation landscape by the end of the 19th Century.

These arms-length transactions between government and the private railroads became the model for subsequent public-private partnerships. This same model carried over to the trolley and subway companies that dominated the provision of mass transit services in cities and towns across the U.S. at the end of the 19th Century and into the first three decades of the 20th. Since corporations were not required to accomplish specific public purposes, their development and expansion was geared to purely private, profit-making objectives, measured by the value of their securities in the stock and bond markets. As Roy has noted: "(b)y the last third of 19th Century the railroad had redefined the corporation into a form of private property, retaining many privileges that states had granted corporations for serving a public function, but shedding their (public) accountability." (Roy, 1997: 83)

Funding for rail and transit infrastructure came largely from the so-called “capital markets”. While ostensibly private, these markets owed their origins to public initiatives and thereby became closely intertwined with public credit. The First National Bank of the United States, established in 1791 when Hamilton was Secretary of the Treasury, issued securities backed by the full faith and credit of the federal government in order to pay down debt from the Revolutionary War. Banks and investors purchased and traded those securities, thereby creating the institutional foundation for a capital market. State government securities used to fund internal

improvements were soon added to the mix. As railroads and trolley companies developed into the dominant corporations of the late 19th and early 20th Centuries, their stock and bond issuances became the centerpiece of a fully mature capital marketplace that included both public and private securities and credit instruments. (Roy, 1997: 114)

In sum, Hamilton's statement about the inseparability of public and private credit was born out in the financing of canal, turnpike, rail and urban transit throughout the 19th Century. However, the specific nature of the relationship between the public and private sectors underwent major institutional change during the 19th Century, after the quasi-public corporations that funded early internal improvements were discredited. As rail and urban transit corporations came to dominate the economic landscape of the U.S., in conjunction with the maturation of private capital markets at the end of the 19th Century, government's role vis a vis private corporations became more attenuated, less direct. The legal and organizational structure of the fully privatized capitalist corporation came to dominate the U.S. political economy. This remained the institutional framework within which transportation infrastructure was financed until the upheavals of the Great Depression, which led to government re-entering the economy and polity as a major force for change.

NEW DEAL INNOVATIONS

Corporations providing inter-city rail, urban trolley and subway services were highly profitable in the late 19th and early 20th Centuries, in large part because the country was growing rapidly and transportation was closely linked to industrial, commercial and residential development.

Since capital markets financed this growth, by the early 20th Century banks and insurance companies held large "positions" in the stocks and bonds of rail and transit corporations. (Olson, 1988: 97) Concomitantly bankers sat on the boards of directors of these companies, often controlling their financial policies. (Roy, 1997: 106) This led to conflicts of interest for the financiers, who received excessive fees for underwriting stock issues, produced "watered" (overvalued) stock, and engaged in "sweetheart" land deals. For example, trolley lines were often extended into uninhabited areas where company directors owned real estate. Then banks financed development projects. Large profits were reaped on the land deals, though the underlying transportation services were often unprofitable.

The dominance of inter-city rail and urban trolley services lasted well into the 1920's. By that time, however, rapid growth in automobile ownership had begun to take a significant toll on the passenger and freight revenues of rail modes. Since rail and transit companies were heavily indebted with long-term bonds used to finance construction and expansion, declines in operating revenues, needed to pay debt service on those bonds, produced a serious threat to their financial well being. More importantly, it threatened the overall stability of U.S. capital markets since, "(o)f the more than $10 billion in outstanding railroad debt, nearly seventy percent was held by insurance companies, savings banks, and major private endowments." (Olson, 1988: 100) Thus, when the banking and credit crisis of the Great Depression developed in the early 1930's, it was exacerbated significantly by the crisis of railroad debt.

In 1932 President Hoover created the Reconstruction Finance Corporation (RFC) to deal with the liquidity problem in the financial markets. Congress appropriated $2 billion initially for RFC to

use in a revolving loan fund, meaning that as loans were repaid, it could issue new loans without going back to Congress for additional appropriations. In addition Congress gave RFC the authority to buy stock in banks and insurance companies. With these powers RFC became, effectively, the capital bank for the New Deal, able to lend to the private capital markets; to buy stock and take ownership positions in banks and companies; to issue bonds using private company assets as collateral; and to provide resources to related New Deal agencies, such as the Public Works Administration, that in turn lent to public and private organizations, including those constructing transportation improvements. (Olson, 1988: 42-45)

By 1935 the RFC had authorized almost $500 million in loans to railroads, mostly refinancing their outstanding debt. (Olson, 1988: 117) Rail companies repaid their debt to banks and insurance companies and RFC became their new lender. Thus, in effect, RFC bailed out the banks and insurance companies and rescued declining railroads. At the same time, however, the Roosevelt Administration and Congress refused to use their financial leverage to force restructuring of U.S. railroads, which had been urged by Joseph Eastman, Transportation Coordinator for the Administration. Eastman argued that only through consolidation to eliminate duplication of routes, as well as financial reorganization, could railroads become competitive with highway-based transportation. (Olson, 1988: 118) By not taking up Eastman's recommendations, the federal government allowed automobile, bus and truck transportation to move towards replacing rail and urban transit as the dominant modes of transportation in the United States.

From the perspective of infrastructure finance, then, the New Deal brought two significant innovations. First and foremost, the federal government became a major financial intermediary-- both borrower and lender-- within the capital markets, using loans, loan guarantees and lines of credit as significant tools of government policy. The RFC's bailout of rail bondholders is a prime example of this. Second, the New Deal and, in particular, the RFC established the power of the federal government to set industrial policy. When the RFC bailed out the railroads, but at the same time determined not to restructure and consolidate the rail industry, it set the stage for a revolution in inter-city transportation. Railroads experienced a brief revival during World War II, when use of highways was reduced due to rationing of oil, gas and rubber. Trains became the major resource for transporting people, troops and military supplies. But, rail corporations quickly declined into bankruptcy after the war when consumers and businesses returned en masse to their cars and trucks. Similarly, in cities, buses replaced trolleys and thereby dramatically changed urban transit. The stage was set for an era dominated by highway-based and airline transportation-- an era persists to this day.

CONTEMPORARY INFRASTRUCTURE FINANCE

When the federal government became a major player in capital markets during the New Deal, a new institutional framework for credit was created. Within this new framework infrastructure finance has assumed a unique place. Because of their high cost, private corporations are not expected to come up with the billions in capital to finance the construction of transportation modes. Instead government grants and credit are used to finance canals, ports, rail lines,

highways, bridges, tunnels and airports. In other words, transportation infrastructure in the U.S. is socialized.

At the same time, a distinction has developed among the modes of transport operated over that infrastructure. Trucking, shipping, air transport and some urban bus lines are operated by private carriers, while urban transit and suburban and inter-city rail is operated by public jurisdictions—cities, towns and public authorities. This distinction between publicly and privately operated transport modes began developing in the 1930's, when the Roosevelt Administration decided not to restructure inter-city rail transport, contributing to its subsequent demise and takeover by Amtrak. At about the same time, as autos and buses replaced trolleys, mass transit became a public responsibility in most cities.

In the decades since this distinction developed, funding for the infrastructure over which public transit transport operates has become increasingly inadequate. In large part this is because these modes are supported by taxes and user fees and public officials have historically been averse to raising fares, tolls or taxes. Thus, even though its financing is fully socialized, infrastructure for mass transit, suburban and inter-city rail is less well supported than highway and airport infrastructure. Innovations in the use of credit to finance publicly operated modes offer some hope for attenuating this imbalance.

PUBLIC CREDIT AS A RESOURCE FOR CAPITAL FORMATION

One of the main ways in which socialized infrastructure has been financed in this county is through direct government grants. However, because the money for these grants derives from taxes, their potential utility is limited by the amount of government revenue that can be raised in any given fiscal year. If, on the other hand, infrastructure is financed via loans, payments can be spread over long periods of time. This provides the main rationale for using credit as a financing resource.

In the decades since the New Deal five major categories of credit resources have developed to facilitate capital formation for transportation infrastructure. They are as follows:

1. Direct Government Loans: federal, state and local governments may make direct loans to fund construction of infrastructure. These may be intergovernmental loans, from federal to state and/or local government or from state to local government, or loans from government to project sponsors. Such loans are implicitly government guaranteed and thereby carry lower interest charges than commercial loans. Interest income to lenders is usually tax exempt.

2. Government guaranteed loans: the interest and principal on loans taken out by a project sponsor may be guaranteed by federal, state and local governments; meaning that, in the event of default or late payment, the government assures lenders that it will make such payments. The source of revenue to pay for guarantees is the taxing authority of the government jurisdiction. Due to the public guarantee the interest rate charged to borrowers is generally lower than commercial rates. However, interest payments to lenders are taxable, since Internal Revenue Code requires that the interest on loans benefiting from government guarantees not be tax exempt. (Section 149, Internal Revenue Service Code)

3. Public line of credit: a sum of money set aside by government that may be drawn upon by a project sponsor in certain situations, such as when primary loan funds are depleted or revenues do not meet debt service requirements on the primary loans. Lines of credit facilitate access by project sponsors to capital markets because lenders know that a cushion has been provided to assure payments on their loans. No tax exemptions are given to any parties to such loans.

4. Tax exemptions; tax subsidies; tax expenditures: in 1913 a federal law was adopted providing that interest payments on state and local debt would be exempt from federal income taxes. States usually add a state and local tax exemption. Such exemptions lower the interest rate on state and local borrowing and, thereby, make it easier for states and localities to access the capital markets

for funding infrastructure projects. Since the public jurisdictions forego some tax revenue, such exemptions are considered subsidies and called “tax expenditures”.

5. Public bond banks or infrastructure banks: federal grants or loans to states may be used to set up revolving funds whereby repaid debts are available to be re-loaned to other borrowers or to set up infrastructure banks where the initial public capitalization is used to leverage additional resources from private capital markets The interest rate on infrastructure bank and revolving fund loans is generally lower than commercial loans. The tax treatment of these loans is variable, some being taxable, others not.

THE INSTITUTIONAL CONTEXT FOR PRIVATE CREDIT

The five kinds of government credit described above account for fully 20 percent of all funds generated in U.S. credit markets, with approximately 350 direct loan and guarantee programs currently in operation. (U.S. Government, 2000) However, as significant as those programs may be, the private sector still supplies most of the funds, even for many public credit programs. For example, most municipal and state borrowing for infrastructure requires loans from the private capital markets. Also, government guarantees are assurances attached to loans that are made by private banks to public jurisdictions. Thus, it is important to understand the institutional framework within which capital markets operate, since this framework determines both the opportunities for, and constraints upon innovative financing for transportation infrastructure.

The main pool of private capital for transportation infrastructure comes from commercial and investment banks, such as Lehman Brothers and Goldman Sachs Company, which have specialized divisions for public investment. Banks are attracted to public-private infrastructure projects for the tax-exempt income they add to their portfolios and/or for the fees that derive from underwriting public bond issues. However, after the federal budget fell deeply into deficit in the early 1980’s, the 1986 Tax Reform Act limited the amount of tax-exempt debt that states

and localities could issue. Industrial development bonds, through which public jurisdictions subsidized private ventures, were phased out. The 1986 legislation also required that interest on all municipal securities be considered income subject to provisions of the Alternate Minimum Tax. (Regan, 1999: 2) As a result, many commercial and investment banks that had previously participated in the tax-exempt bond market withdrew from that sector. This meant that significant resources of private capital were no longer available to public jurisdictions.

Private sector pension funds provide a source of capital that could fill this gap. As of 1994 these funds were estimated to control over $4 trillion dollars in savings. (General Accounting Office, 1995: 8) However, pension funds have rarely participated in financing infrastructure ventures because, as not for profit organizations, they are already tax-exempt. So, unlike private banks and mutual funds, they have no financial incentive to add to their portfolios the tax-exempt bonds that are a primary component of most state and local infrastructure projects. Section 1081 of the Inter-modal Surface Transportation Efficiency Act of 1991 (ISTEA) established a Commission to Promote Investment in America's Infrastructure. Two recommendations of that Commission were establishing a National Infrastructure Corporation and an Infrastructure Insurance Corporation, which would lend to projects and provide credit insurance. (Commission on Infrastructure, 1993: 12) Neither of these recommendations has subsequently been enacted into law, but the Commission's work did contribute to the development, in 1995, of legislation creating state infrastructure banks, which provide new resources to fund transportation projects (see page 20 below).

Public authorities are another component of the institutional framework within which credit is extended by private markets. These quasi-public entities issue debt, which carries an implicit public backing, since investors believe they will not be allowed by their sponsoring jurisdictions to go bankrupt. At the federal level, some of these entities, such as the Government National Mortgage Association, function outside the regular Congressional appropriations process. Similarly, at the state level, the debt issued by an entity such as the Metropolitan Transportation Authority in New York, is not accounted for within the limits on debt mandated by the state constitution. In addition their debt is tax exempt. Thus, public authorities provide a significant "off budget" organizational resource for supporting infrastructure projects.

Finally, tax exemptions are an integral, albeit controversial, aspect of the institutional framework for infrastructure finance. Many economists and policy analysts argue that income foregone due to tax-exemptions on federal loans should be accounted for within the unified federal budget, since losses from non-performing loans are costs to the government. (Ippolito, 1982: 4) However, these loans have been considered "off budget" ever since the New Deal, when they began to proliferate. It was not until 1990 that the Federal Credit Reform Act required that the potential costs of loans, lines of credit and loan guarantees be estimated and included in budget accounting whenever such credit is extended. These estimates of the potential costs to government are termed subsidy costs. Regulations codify these policies. (Office of Management and Budget, 1993) As a result many federal credit programs, except for some provided by public authorities, are now part of the "budget scoring" process, by which government programs are specifically tabulated by Congress and the Executive Branch during the annual Congressional appropriations process. Any subsidies that the government provides to a program or agency must

be offset by equal levels of spending cuts so that the overall federal deficit is not increased. (Grote & Seltzer, 1998: 16) This creates limits on the provision of federal credit for infrastructure investment.

In sum, even as infrastructure financing is considered a government responsibility in the United States, most public credit programs draw upon funds provided by the private investment banks. In order to provide incentives for infrastructure financing, the U.S. relies upon tax exemptions that attract private lenders; public credit guarantees that reduce risk for those lenders; and creation of specialized public authorities that facilitate lending by private markets for infrastructure projects. In short, while transportation infrastructure is largely financed through joint public-private arrangements, the private sector is ultimately the controlling partner in terms of setting the terms for providing credit for these ventures.

INNOVATIVE PROGRAMS TO FACILITATE INFRASTRUCTURE FINANCE

When actual infrastructure projects, such as a subway line extension, are proposed for construction, the institutional context for private credit described above quickly translates into specific financial requirements that must be met before such projects can be implemented. First, since these projects involve long construction periods, investors require that their funds not be tied up for significant periods of time before revenues begin to pay back their loans. Second, when project-specific revenues, such as tolls or fares, are designated to pay down the debt service on a project-- as opposed to the more secure revenue stream of taxes-- investors require protection against the risk that user demand will fall short of estimates and therefore not produce revenues adequate to pay off loans. Third, before granting loans, investors require that project

revenues exceed debt service by some predetermined percentage, called the “coverage ratio”. This creates pressure on project sponsors to find loans at lower-than-market interest rates in order to meet that coverage requirement.

A number of innovative programs have been developed in the recent past which address these financial requirements. One of the most significant of these is the Transportation Infrastructure Finance and Innovation Act (TIFIA), Public Law 105-78, June 1998, Section 1502. An explicit goal of TIFIA is “to induce private investment in transportation infrastructure.“ (U.S. Department of Transportation, 2002: 7) TIFIA allows the federal government “to provide credit instruments with flexible terms intended to mitigate co-investor concerns about investment horizon, liquidity, and short term risk associated with financing…transportation projects.” (U.S. Department of Transportation, 2002: 23) These instruments include direct, secured loans from the federal government to a non-federal project sponsor as borrower; loan guarantees applying to the principal and interest on borrowing by a project sponsor; and lines of credit, which act as contingent federal loans in case project revenues fall below specified levels. More specifically, with TIFIA the government agrees that its loans may be subordinate to the loans granted by private lenders. This means that private lenders receive the senior lien on project revenues. Government assumes the junior lien, which tends to reduce interest charges on the senior bonds and which, in turn, reduces coverage rates. Under TIFIA the government also agrees not to collect interest on its loans in the first five years after completion of construction, thereby addressing investors’ concerns that their funds not be subject to risk during the “ramp-up” (construction) period. In short, the federal government uses its powers as a financial intermediary

to create financial terms and conditions that satisfy the demands of the private capital markets in terms of their risk, exposure and coverage.

Since its enactment in 1998 the TIFIA program has provided support for infrastructure construction projects in a variety of transport modes, including highways, bridges, ferries, rail freight, urban transit and inter-modal facilities. In New York a $140 million TIFIA direct loan and $20 million line of credit are supporting the Farley Pennsylvania Station project. The loan will be repaid from Port Authority of New York and New Jersey lease payments, Amtrak revenues and station rents. When completed, the new Penn Station is projected to service commuter rail, subways, airport access and bus and taxi passengers. (U.S. Department of Transportation, 2002: C-2) Similarly the $482 million Staten Island Ferries and Terminals project is being supported by a $159 million TIFIA direct loan, which will help finance construction and acquisition of three new ferry boats, redevelopment of two ferry terminals and new inter-modal connections between the ferries and transit system of New York City. (U.S. Department of Transportation, 2002: C-8) The TIFIA program provides strong evidence that government intermediation in financial markets can enhance capital formation for infrastructure.

Infrastructure banks provide another innovative approach to enhancing capital formation. The National Highway System Designation Act of 1995 created a state infrastructure bank (SIB) program that permits states to use federal highway grants to fund loans, loan guarantees and lines of credit, often at below market interest rates and with the state accepting junior lien position in project financing. A state infrastructure bank can be structured in two ways: to leverage additional private capital or to act as a revolving fund. In the former arrangement, the bank's

initial public capitalization is used as security for private loans to project sponsors. Alternatively, under the revolving fund arrangement bank public funds are loaned directly to project sponsors and, as those funds are repaid, they are re-loaned to other projects. Although SIB funds come from federal highway appropriations, they may be used for local transit, rail and inter-modal projects, as well as for highway, bridge and tunnel construction. (Federal Highway Administration, n.d.: 24)

New York State has an infrastructure bank, which, as of late 2001, had loaned only $12 million for two projects. (Federal Highway Administration, 2002: 26) Small loans of this magnitude are not atypical for SIB's, since the entire program for all 50 states has only been capitalized at $150 million by Congress, with payout of those funds to states over a 10 year period. Although large scale infrastructure projects cannot be funded under this limited mandate, SIB contributions can be added to other sources of capitalization and, in combination, make a significant contribution to overall project financing.

A third innovative federal program that aids in financing infrastructure involves grant anticipation revenue vehicles (GARVEE's). Under this program states may pledge a share of future federal-aid highway funds towards paying debt service on a long term bond issue for a construction project. Grant anticipation bonds may be issued by a state, locality, public authority or political subdivision of a state, including state infrastructure banks. GARVEE's can contribute to funding the full range of transportation modes as well as inter-modal facilities. (Federal Highway Administration, n.d.: 16)

Finally, tax increment financing is a non-federal innovation that can be used to stimulate capital formation for transportation infrastructure. When economic development occurs at the state and local level, such as with construction of a convention center, neighborhood property values increase and, as a result, so do tax assessments. Tax increment financing allows states to use projected increases in the assessed valuation of land and buildings as a resource for leveraging private market loans. The increment in tax revenues that derives from the development project becomes security to repay the private loans. Usually a special tax increment district and associated public authority is created is created to implement such financing. Projects often include transportation infrastructure as a component.

Tax increment financing was originally introduced in California in 1951 and spread to other states in the mid-1970's when federal grants for urban renewal ended, thus forcing local governments to seek other sources for financing development. (Government Finance Research Center, 1983: 43) In New York City, the new administration of Mayor Bloomberg recently expressed interest in using tax increment vehicles to finance extension of a subway line in Manhattan. (Orcutt & Peterson, 2002: 3) Tax increment financing holds considerable promise as a method for enhancing capital formation in the New York metropolitan area, where property values have consistently increased in conjunction with economic development in the region.

PAST AND FUTURE

Whether for the purchase of subway cars and buses, or to construct an airport, new highways or a rail link, infrastructure costs run to many millions, even billions of dollars. Because of its high

cost and importance in supporting economic development for the country as a whole, construction of transportation infrastructure in the United States has been socialized-- paid for by the various jurisdictions of government. In the early 1800's this was done partly through direct federal and state grants to corporations that sponsored internal improvements and partly through loans to and purchases of stock in those corporation. These early American corporations were required by charter to serve the public interest. Subsequently land grants were given to fully private corporations that constructed a national network of passenger and freight railroads, and rights of way over urban streets were granted to mass transit systems. During the Great Depression public loan programs were expanded when massive federal spending became crucial to stabilizing the overall economy. New Deal loans were used mainly in areas such as agriculture and housing, not for transportation infrastructure. Until recently this remained true for most federal credit programs, though at the state and local level, borrowing has always been a major resource for funding infrastructure improvements.

Reliance on credit changed the nature of the relationship between government and the private sector, since it placed capital market organizations in the position of setting the terms and conditions for loans. Sponsors of infrastructure improvements are unable to leverage private lending unless they can meet the requirements of investors for protection against the risks inherent in long construction periods and uncertain consumer demand. Federal, state and local governments can aid in meeting these requirements by using the solid backing of tax revenues to guarantee loans or by issuing lines of credit that protect private lenders from excessive risk. The new federal TIFIA program is innovative because it accepts delayed payment on loans and takes junior lien position within the credit structure of a project. Tax increment financing is similarly

innovative in using future tax revenues as leverage and guarantee for loans. In short, when public tax dollars are joined with the resources of private capital markets, tremendous potential is unleashed for generating capital to fund infrastructure improvements.

The joining of public and private resources to support transportation infrastructure improvements raises the same generic public policy questions today as it did in the era of internal improvements. First, will those improvements mainly serve the public interest or the interests of private investors? Often government officials and private lenders have different objectives, with the former seeking to assure public benefits and the latter looking to maximize profits. These are not necessarily incompatible, but they create the challenge of innovative finance, which is to join public and private resources in ways that maximize overall returns.

Second, if public credit is used to generate capital for transportation, it raises the question: which transportation modes will be given priority from such financing? When the Roosevelt administration used its lending powers to refinance rail bonds in the 1930's, it did so without restructuring the railroads. That decision contributed to the subsequent decline of inter-city rail in the U.S. Contemporary decisions by federal, state and local governments about which transportation modes will receive the benefit of its considerable power in the credit markets can be equally significant in determining the future shape of the transportation system in this country.

In the final analysis, the state of transportation in this country has always hinged on generating sufficient capital to fund the infrastructure improvements that allow for efficient movement of

both people and goods. However, as shown in this report, the process of capital formation is more than a technical, financial exercise because it involves policy choices. The challenge for the future lies in resolving the ongoing dynamic of politics and finance so as to best serve the interests on an efficient and effective transportation system.

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