The Jerome Levy Economics Institute of Bard College

Public Policy Brief

HIGHLIGHTS

No. 40A, May 1998

Overcoming America's Infrastructure Deficit

S Jay Levy and Walter M. Cadette

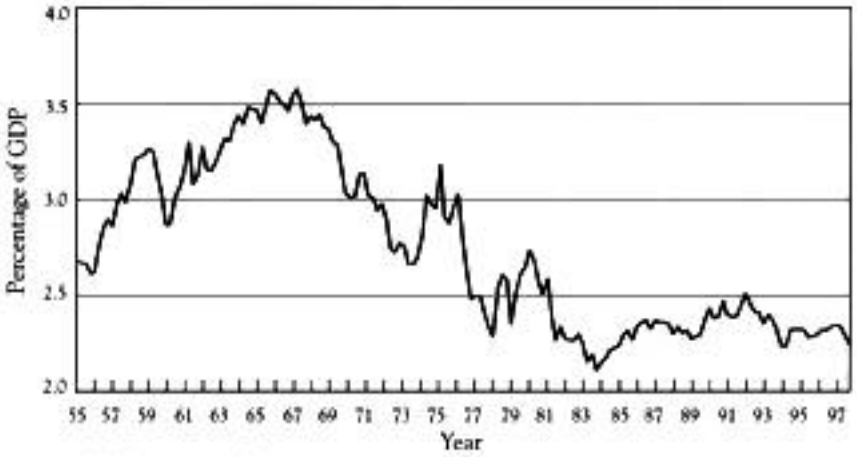
Citizens chronically complain about dilapidated school buildings, condemned highway bridges, contaminated water supplies, and other shortcomings of the public infrastructure. In addition to causing inconvenience and endangering health, the inadequacy of the public infrastructure has been found to adversely affect productivity and the growth of the economy (Aschauer 1993). Reasons for the sorry state of the nation's infrastructure include a lack of maintenance (Environmental Working Group and Surface Transportation Policy Project 1997; Regan 1994) and the federal government's practice of expensing of capital projects as they are built as if they were consumed immediately.

In this paper we discuss the link between public investment and economic performance, the structure of a plan to finance public capital investment, the need for the federal government to support such a plan, and the implications of the plan for monetary and fiscal policy.

Public Capital Investment and Economic Growth

As shown in Figure 1, from 1955 through 1980 total nondefense public investment averaged 3.0 percent of GDP; from 1981 through 1997 it averaged only 2.3 percent and was below 2.3 percent in the most recent four years. A reduction in federal government investment contributed to the overall decline, but much less than reductions by state and local governments, which typically account for about 85 percent of such investment. Burdened by rising taxation, state and local taxpayers frequently were reluctant to approve bond issues to finance infrastructure.

Figure 1 Nondefense Public Investment as Percentage of GDP

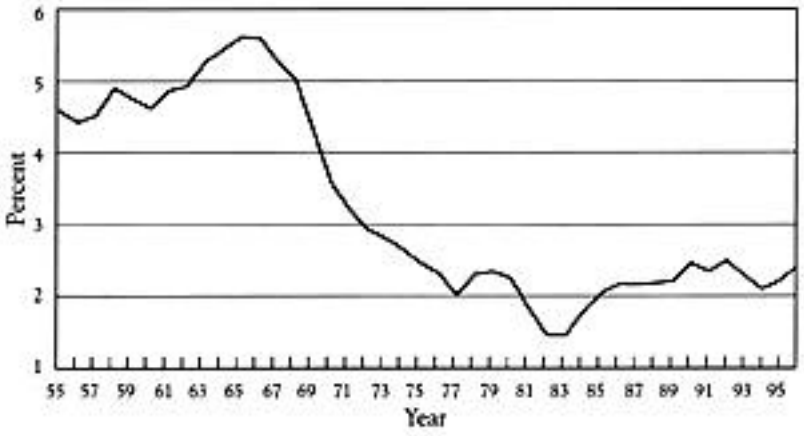


Source: U.S. Department of Commerce.

Widespread neglect of maintenance aggravated the decline in the capital stock. As shown in Figure 2, net of depreciation, the real nondefense public capital stock rose between 1977 and 1997 at a pace only half that set between 1955 and 1977.

Research has highlighted the link between investment in public capital and the performance of the economy at large (Aschauer 1989; Munnell 1990) and has shown that public and private investments are complements--public capital investment stimulates private investment (Erenburg 1993).[1] Fazzari (1993) has examined and found false the notion that public investment leads to a reduction in private investment; the process typically is one of "crowding in," not "crowding out." Aschauer (1997b) also has found that business fixed investment from the late 1960s through the late 1980s would have been 0.6 of a percentage point higher as a share of GDP had the nation dedicated an additional 1.0 percentage point of GDP to public investment.

Figure 2 Nondefense Public Capital Stock (Constant Dollar, Net of Depreciation, Year-over-Year Percent Change)



Source: U.S. Department of Commerce; Levy Institute Forecasting Center estimate.

Even if the effect on the economy of maintaining the 1955 to 1977 rate of increase in public investment were no more than half as large as the research indicates, the nation's wealth and income would now be about one-fifth higher than it is. According to Aschauer (1997a) economic growth is stimulated until the public capital stock reaches an estimated 62 percent of the value of business plant and equipment. Recent data indicate that the nation has far to go to achieve that optimal balance between public and private capital. Some states are close to the optimum, but the nationwide average value of the public capital stock is only 45 percent of the value

of business plant and equipment.

A Plan for Financing Infrastructure Investment

The plan described here calls for a partnership between federal, state, and local governments. At least four circumstances warrant such a partnership.

1. The infrastructure deficit has become a critical national problem.

2. Federal mandates for a range of activities, from limiting pollution to caring for the poor, frequently strain the budgets of state and local governments and of their taxpayers.

3. The provision of roads, schools, and much other public capital benefits all Americans. They gain from a first-class interstate highway system, a well-educated workforce, and air and water that are reasonably free of pollutants.

4. Federal subsidies have traditionally been called upon to "even things out" across states and regions when widely disparate income levels and exposure to natural disaster have been deemed to impose inequitable burdens. State governments play a similar role within their own boundaries.

We propose the establishment of a Federal Bank for Infrastructure Modernization (FBIM), which would buy and hold approximately $50 billion a year of zero-interest mortgage loans to state and local governments for capital investment in types of projects specified by Congress and the president.[2] Being zero-interest, the loans would cut the overall cost of projects about in half (depending on prevailing interest rates) for state and local governments. The principal of the loans would be repaid in annual installments. No mortgage would be for a period of more than 30 years, and the period of repayment would depend on the type of project. To protect the taxpayers' investment in these projects, the loans would have covenants requiring regular, effective maintenance. Because this investment program would raise the economy's long-term growth rate, it would be partly, perhaps entirely, self-financing.[3]

A $50 billion annual investment in infrastructure would return public capital spending to the standards of the period 1955 to 1980. If the zero-interest infrastructure mortgages were amortized over a period of 10 years--that is, if 10 percent of the debt were repaid annually--the total outstanding debt would level off at $300 billion after 10 years and the interest subsidy at about $15 billion (based on early 1998 interest rates). A payback period as short as 10 years would be inappropriate if most of the investments were in new bridges, highways, and other long-lived assets. However, Congress might well decide that the program should begin with the rehabilitation of existing infrastructure.

The subsidizing of capital projects in the form of zero-interest loans would be a cost to the federal government. However, at small annual cost, it would achieve large and badly needed improvements in the nation's infrastructure.

The FBIM's purchases of the mortgages would be integrated into the Federal Reserve's open market operations, displacing in most circumstances the purchases of Treasury securities customarily made by the Fed to provide reserves to the banking system.[4] The Board of Governors of the Federal Reserve System would have the authority to vary the size of any given year's financing under the plan, determining whether the FBIM should be accepting mortgages at the rate of $50 billion per year or at some other rate within the range to be stipulated by legislation.

The FBIM would have responsibility for administering the plan, but would have no scope in project selection. It would take mortgages on projects of types specified by statute and consistent with the provisions of the legislation for equitable regional distribution of the financing. Administrative costs (including the cost of any defaults) would be covered by a small fee charged to the borrower. The fee would be less than one-half of one percent of the amount financed.

The FBIM need not be built from the ground up. Indeed, its functions could be grafted onto either of two existing institutions: the Treasury Department's Federal Financing Bank, which extends loans to federal agencies that at one time borrowed in their own names, or the Federal Home Loan Bank System, which as central banker to the nation's thrift institutions is attuned to local needs.

Monetary and Fiscal Implications

The Federal Reserve ordinarily supports the economy's growth by purchasing Treasury securities as a means of adding reserves and currency to the system. At the end of 1997 the Federal Reserve held $431 billion of government obligations (Federal Reserve Board 1997). The FBIM's purchases of the subsidized mortgages would take the place of the central bank's purchases of Treasury securities. To prevent the creation of excessive reserves, the Federal Reserve's open market desk would likely become a net seller of Treasuries. On balance, the character of monetary policy would not be changed in any way.

Just as now, policymakers would strive to strike the right balance between overall credit creation and credit restraint for any given background set of cyclical conditions. The Federal Reserve would still hold ample stocks of Treasury securities to be sold if it were intent on draining reserves. The Federal Reserve's implicit interest rate targets need not be affected in any way.

Given the size of the Treasury market ($3.5 trillion of marketable securities outstanding), the Federal Reserve's sales of Treasuries to the extent envisaged are unlikely to have much, if any, impact on Treasury yields relative to the yields on other securities. As for interest rates generally, the impact of a program to subsidize state and local government mortgages would depend on the economy at large. In periods of economic slack, with loan demand down and banks rushing into the Treasury market to put their deposits to work, it would be comparatively easy to finance an added $50 billion of state and local government obligations (less than 1 percent of GDP) and to find private buyers for the Treasury securities that the Federal Reserve would not as a result hold in its portfolio. In those circumstances, the Federal Reserve would find a ready market for the Treasuries it was selling. Market interest rates would rise barely, if at all, as a result of the added demand for goods and services arising from the states and localities. If, however, the economy were operating close to capacity and the policy objective was to curb inflationary pressures, market interest rates might have to rise in order to finance, without inflationary consequences, the added demand for goods and services.

The only effect on the federal budget would be the decline in the profits of the Federal Reserve derived from interest income on its securities holdings. The loss of revenue would be quite small compared to the overall federal budget: about $2.5 billion in the first year of the plan's operation[5] and about $15 billion when the program had fully matured. This estimate is static, however; it should also take into account the salutary effect on long-term growth and thus on federal revenue apt to come from a higher private as well as public capital stock.

The Need for Action

Bridges that have been condemned, school buildings in such disrepair that learning is jeopardized, facilities that provide water with uncomfortably high levels of contaminants, and many other infrastructure shortcomings threaten American growth and prosperity. Moreover, the growth of population, advances in technology, and the long-term economic progress of nations that compete in world markets with U.S. firms call for strong efforts to enhance productivity. The proposed program to improve infrastructure is a means to ensure the nation's economic future. Though limited, it enables the federal government to play a vital role in bringing needed improvements about without impairing its fiscal goals and its commitment to control inflation. Keeping the promise of the future requires that the United States make provision for the basics for economic growth.

Notes

1. Erenburg (1994, 14-16) also includes a good summary of the research.

2. The FBIM's balance sheet would have the zero-interest state and local government mortgages on the asset side and the similarly zero-interest "deposits" of the Federal Reserve on the liability side.

3. The decrease in the money supply that would occur as assets are depreciated would result in a smaller decline in GDP than the initial boost that occurs with the increase in the money supply. Moreover, since the initial boost would raise the long-term growth path of the economy, GDP would still be higher after depreciation than without the initial increase in assets.

4. These mortgages would not, of course, serve the exact function of Treasury securities as they would have to be held by the Federal Reserve until the securities matured and could not be sold by the Federal Reserve to drain reserves from the system.

5. In this case, the FBIM would own some $50 billion of state and local government bonds, which would bear no interest, instead of the Federal Reserve's owning a like amount of interest-bearing Treasuries.

References

Aschauer, David A. 1989. "Is Public Expenditure Productive?" *Journal of Monetary Economics* 23:2 (March): 177-200.

------. 1993. "Public Capital and Economic Growth." *Public Infrastructure Investment: A Bridge to Productivity Growth?* Public Policy Brief no. 4. Annandale-on-Hudson, N.Y.: The Jerome Levy Economics Institute.

------. 1997a. "Do States Optimize? Public Capital and Economic Growth." Working Paper no. 189. The Jerome Levy Economics Institute, Annandale-on-Hudson, N.Y.

------. 1997b. "Dynamic Output and Employment Effects of Public Capital." Working Paper no. 191. The Jerome Levy Economics Institute, Annandale-on-Hudson, N.Y.

Environmental Working Group and Surface Transportation Policy Project. 1997. *Potholes and Politics: How Congress Can Fix Your Roads.* Washington, D.C.: Environmental Working Group/The Tides Center.

Erenburg, Sharon J. 1993. "The Real Effects of Public Investment on Private Investment: A Rational Expectations Model." *Applied Economics* 25: 6, 831-837.

------. 1994. *Linking Public Capital to Economic Performance.* Public Policy Brief no. 14. Annandale-on-Hudson, N.Y.:
The Jerome Levy Economics Institute.

Fazzari, Steven M. 1993. *The Investment-Finance Link.* Public Policy Brief no. 9. Annandale-on-Hudson, N.Y.: The Jerome Levy Economics Institute.

Federal Reserve Board. 1997. "Factors Affecting Reserve Balances." H.4.1. Release, Worksheet for H.4.1.(a), December 26.

Munnell, Alicia H. 1990. "Is There a Shortfall in Public Capital Investment?" In *Proceedings of a Conference Held at Hartwich Port, Massachusetts.* Conference Series no. 34. Boston: The Federal Reserve Bank of Boston.

Regan, Edward V. 1994. *Infrastructure Investment for Tomorrow.* Public Policy Brief no. 16. Annandale-on-Hudson, N.Y.: The Jerome Levy Economics Institute.

About the Authors

S Jay Levy is chairman of the Board of Governors of The Jerome Levy Economics Institute and an economic analyst and forecaster. In 1949 he and his father, Jerome Levy, founded *Industry Forecast* (now *The Levy Institute Forecast*), the monthly analysis of the state of the U.S. economy still published by the Levy Institute's Forecasting Center, and he remains actively involved in the Forecasting Center's programs. Levy has been a consultant to many corporations and financial institutions and has testified before various congressional committees. He is the author of *The Economics of Aging* (Public Policy Brief No. 18); with David A. Levy, *Profits and the Future of American Society* (HarperCollins, 1983); and many articles, monographs, and book reviews.

Walter M. Cadette is a senior fellow at The Jerome Levy Economics Institute. His areas of special interest include health care, international trade, Social Security, and regulation of financial institutions. In addition to his work at the Levy Institute, he is chairman of the Holy Cross Health System's investment review committee. Cadette is a retired vice president and senior economist of J.P. Morgan & Co. Incorporated and was editor of and contributor to its publications *Global Data Watch* and *World Financial Markets.* He is the author of *Prescription for Health Care Policy* (Public Policy Brief No. 30) and *Safeguarding Social Security* (Public Policy Brief No. 34). Cadette received an M.A. from Georgetown University and did further graduate work in economics and finance at New York University.

The full text of this paper is published as Levy Institute Public Policy Brief No. 40.

The Jerome Levy Economics Institute is publishing this proposal with the conviction that it represents a constructive and positive contribution to the discussions and debates on the relevant policy issues. Neither the Institute's Board of Governors nor its Board of Advisors necessarily endorses the proposal.

ISSN 1094-5237
ISBN 0-941276-48-1