

Infrastructure: Spending More and Spending Well

Infrastructure spending is high on the current U.S. policy agenda for a number of reasons. First, recent dramatic failures have highlighted the harmful effects of poor maintenance and age-related deterioration on infrastructure facilities. Second, infrastructure investment is a candidate to stimulate the economy in the current recession. Third, enhancing infrastructure is crucial to long-term economic competitiveness and environmental sustainability.

Finally, infrastructure investments are an important determinant of urban form, spatial development, and land prices.

But what is infrastructure? One common definition includes all transport systems (road, transit, rail, air, water); all networked utilities (power, pipelines, water supply, sanitation, telecommunications); irrigation and flood control; and pollution control and waste disposal. It excludes schools, hospitals, and other public facilities.

International comparisons using this definition show that countries spend an average of 4 percent of GDP on infrastructure, and that this share increases in step with economic growth when annual growth rises above average rates of 2 to 3 percent. Accordingly, for China to sustain its growth rate of 10 percent requires an annual infrastructure investment share of similar magnitude. Based on data compiled by the Congressional Budget Office, in 2004 the United States public and private investment in infrastructure (as defined here) was \$302.5 billion, or only 2.6 percent of GDP, a share that seems to have varied little since the early 1980s.

While U.S. spending on infrastructure has been low compared to other countries, new investment cannot just be turned up, like water from a faucet. Efficient spending must be directed to specific projects that benefit the economy over the long term and produce valued services that reduce the costs of production, goods movement, congestion, ill health, urban development, and economic growth.

The Congressional Budget Office reports that estimates from other agencies indicate an additional \$103.5 billion of annual infrastructure spending (in 2004 dollars) can be justified in economic terms. These amounts include funds for maintenance (following a “fix-it-first” policy), funds to expand transport systems, and funds to achieve existing environmental standards (particularly for rivers and waterways).



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This spending would raise the GDP share for infrastructure to about 3.5 percent.

Existing estimates of the economic impacts of infrastructure investment—on the order of 30,000 to 40,000 jobs per \$1 billion of infrastructure investment and long-term growth in GDP—are based on the premise that infrastructure investment will be efficient and productive. If it is not, the multiplier effects can be smaller and the investment can have

longer-term negative effects.

For example, to combat its deep recession in the 1990s, Japan embarked on a large infrastructure investment program that raised the public sector's share of total investment from 21 to 29 percent. This investment did little to stimulate growth, however, and the resulting increase in national debt raised debt-servicing costs greatly. Because increased infrastructure investment in the United States also will be debt-financed, it is very important in terms of future U.S. growth for new funds to be spent productively.

One of the major challenges facing increased infrastructure investment in the United States is that projects planned in the past and ready for immediate implementation may now be out of date. The U.S. economy faces significant new challenges, including adapting to higher energy costs, reducing carbon emissions, increasing alternative energy capacity, and mitigating the effects of global climate change affecting coastal areas and water availability.

These changes mean that business as usual is no longer sufficient. Infrastructure investments must take account of the need to increase urban densities, improve transit access, coordinate transport and environmental investments across metropolitan areas within emerging megaregions, and foster green technologies in infrastructure itself. Better management of existing infrastructure may be an alternative to some new investments. For example, the Federal Highway Administration estimates that broader use of congestion tolls could reduce highway investments by up to \$20 billion per year.

Spending on infrastructure clearly can be increased, but these resources must be allocated to carefully selected projects that produce long-term benefits in the rapidly changing economic and environmental circumstances of the twenty-first century.