The American Infrastructure

The best way to pay for a road and its bridge is from the land rent that gets generated by that infrastructure.

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The economy's "infrastructure" consists of capital goods which are used for transportation, communications, and utilities. These capital goods are also called "public works," because they have characteristics of public goods. An non-congested road or bus can accommodate extra users without reducing the services of the current users. The infrastructure of utilities includes the pipes, pumps, and wires that provide water, electricity, and natural gas. Some of the infrastructure is considered a natural monopoly, a product with a high fixed cost and a low marginal cost, the cost of providing more of the product.

Much of the infrastructure of the United States was built decades ago. They are mostly owned by governments which have failed to provide proper maintenance. The recent assessment of infrastructure by the American Society of Civil Engineers calculated an overall grade of D+.

Capital goods tend to depreciate, and require maintenance. Privately owned capital goods, such as houses and cars, are typically well maintained, since the owner wants to continue using these, and seeks a high resale value. But in the mass democracy we have today, the political incentive to build infrastructure but then to avoid spending to maintain it properly. A politician can take credit for promoting and voting for a project such as mass transit, but he will not boast about providing the on-going maintenance, as this does not provide a news opportunity.

Several major bridges have collapsed in recent years, and some have been shut down after being inspected. Bridges built decades ago now have many times the traffic they were initially built for, and the officials responsible for the bridges have failed to provide proper upgrades. Governments find the funds to repair broken bridges, but can't provide the political will to maintain and upgrade them so that they don't break. (A significant exception is the replacement for the San Francisco - Oakland Bay bridge.)

The federal government's budget for highways comes from the Highway Trust Fund, financed by the federal gasoline tax. This is a unit tax, based on gallons rather than price, and the rate of 18.4 cents per gallon has been unchanged since 1993, while inflation has reduced the real amount. But the problem is not so much the rate, but the tax itself.

A gasoline tax seems like a user fee, since the use of roads is proportional to the use of gasoline. But the tax per gallon of gasoline has little relationship to the costs and benefits of the road. The benefit of a road can be measured by how much extra people are willing to pay to use locations served by the road, i.e. the additional land rent generated by the road. If the road generates less rent than it costs, it should not be built.

The best way to pay for a road and its bridge is from the land rent that gets generated by that infrastructure. There is then no need for a gasoline tax. However, the cost of a road or street is not just the cost of construction and maintenance. There are two other social costs. First is the cost of congestion. Streets and highways world wide are crowded, which wastes time. There should be tolls on all streets, highways, and bridges which vary by time and day, with tolls just high enough to prevent congestion. Another social cost is the pollution from vehicles. The efficient way to reduce pollution to an optimal amount is to measure the emissions with remote sensing, and then send pollution charges to the owners of vehicles which exceed the limits.

Many condominiums and residential associations have a reserve fund for periodic maintenance. The association's budget includes an annual payment to the reserve fund as an actual expense that offsets depreciation. Government should do likewise. The government responsible for particular infrastructure should included in its budget an operational expense or reserve fund for the upkeep of the capital goods.

The political incentive, however, is the opposite. Politicians will not get publicity for maintenance and reserve funds. Therefore the upkeep funds should be a constitutional requirement. It should be in the constitutions of all governments that whenever public works are built, the budget will include payments for adequate maintenance.

The same economics applies to other infrastructure, such as water provision. The water provision of many American cities is over a hundred years old. Maintenance should be a constitutional requirement. In July 29, 2014, a water pipe burst in Los Angeles by the University of California. Millions of gallons of water were wasted in the midst of an extreme drought. The cost of not doing maintenance is much greater than that of proper periodic upkeep.

An alternative to government-provided infrastructure is the provision by the private sector. Private communities such as homeowners' associations would provide the local streets, and they would federate to provide the larger highways. Assessments, ideally on land value, would pay for the local public goods and also be passed on for the larger infrastructure. Property owners who balk at taxes willingly pay association assessments, so perhaps that is the most feasible path of reform.

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FRED E. FOLDVARY, Ph.D., (May 11, 1946 — June 5, 2021) was an economist who wrote weekly editorials for Progress.org since 1997. Foldvary’s commentaries are well respected for their currency, sound logic, wit, and consistent devotion to human freedom. He received his B.A. in economics from the University of California at Berkeley, and his M.A. and Ph.D. in economics from George Mason University. He taught economics at Virginia Tech, John F. Kennedy University, Santa Clara University, and San Jose State University.

Foldvary is the author of *The Soul of Liberty*, *Public Goods and Private Communities*, and *Dictionary of Free Market Economics*. He edited and contributed to *Beyond Neoclassical Economics* and, with Dan Klein, *The Half-Life of Policy Rationales*. Foldvary’s areas of research included public finance, governance, ethical philosophy, and land economics.

Foldvary is notably known for going on record in the *American Journal of Economics and Sociology* in 1997 to predict the exact timing of the 2008 economic depression—eleven years before the event occurred. He was able to do so due to his extensive knowledge of the real-estate cycle.