

ORIGINAL ARTICLE

Public-private partnership as remedy for crumbling infrastructure: Is this hope looking for reason?

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ABSTRACT

It has become commonplace to describe publicly provided infrastructure as being in a sorry state and to advance public-private partnership as a possible remedy. This essay adopts a skeptical but not a cynical posture toward those claims. The paper starts by reviewing the comparative properties of markets and politics within a theory of budgeting where the options are construction and maintenance. This analytical point of departure explains how incongruities between political and market action can favor construction over maintenance. In short, political entities can engage in an implicit form of public debt by reducing maintenance spending to support other budgetary items. This implicit form of public debt does not manifest in higher interest rates but rather manifests in crumbling bridges and other infrastructure due to the transfer of maintenance into other budgetary activities.

Keywords: public-private partnership; dyadic vs. triadic partnerships; construction vs. maintenance; budgetary politics; implicit public debt

1. Introduction

These days we hear a continuing parade of claims that infrastructure is in a sorry state, as illustrated by such things as crumbling highways and bridges, fragile dams, and dilapidated schools, among numerous other observations. As one of many efforts by observers to gauge the intensity of that sorry state in the United States, the American Society of Civil Engineers has placed a price tag of \$4.6 trillion on upgrading infrastructure in the United States by 2025, with supporting text provided at <https://www.infrastructurereportcard.org/>. These claims surely have intuitive plausibility on their side. Who could be better placed to appraise the quality of existing infrastructure than the civil engineers who build and maintain that infrastructure? This paper accepts the intuitive plausibility of this presumption. All the same, this paper recognizes that this intuitive plausibility is not the final word on the matter. The building and maintenance of infrastructure is usually an outcome of politically organized budgeting. While civil engineers are prominent in the creation and maintenance of infrastructure, the condition of

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infrastructure is nonetheless the province of political budgeting. As participants within this process, civil engineers surely have the normal biases toward their creations that any creator of artifacts has. For instance, cake designers surely think their products would be better if customers were willing to spend more on their creations. Likewise, civil engineers surely can always think that infrastructure could be improved if only they could work with larger budgets, along the lines that Koppl (2018) explains in his examination of the role of experts and expertise in society. Civil engineers clearly possess expertise on infrastructure, but they equally clearly are biased in their judgments in that almost invariably they will pick more over less if faced with a decision between spending more and spending less on some infrastructure project.

This essay makes no effort to deal with the veracity of claims about infrastructure because doing this lies outside the author's professional competence. To the contrary, the author explores some features of the institutional and organizational milieu within which infrastructure is provided inside systems of public budgeting. The provision of infrastructure, as well as its subsequent maintenance, are the province of political budgeting. The quantity and quality of infrastructure that exists at any historical moment is largely an output of some budgetary process. If publicly supplied infrastructure is thought to be in a sorry state, the first question to ask surely is how is it possible that political processes can allow this sorry state to come about? Presumably, infrastructure is supplied through public budgeting and not through ordinary market arrangements because infrastructure has public good qualities that would bring about insufficient provision through market-based institutional arrangements. There is surely something perplexing about a line of thought that explains that infrastructure has public goods aspects that call for public provision, and then follows that explanation with a claim that the condition of publicly supplied infrastructure is poor, and with public-private partnership being a means of rescuing infrastructure. If it requires private enterprise to rescue crumbling infrastructure, why not turn that infrastructure over wholly to private enterprise in the first place?

2. Public supply of infrastructure: What can possibly go wrong?

The various claims about crumbling infrastructure should surely lead immediately to the question: how is this situation possible? If infrastructure has public good characteristics that only governments can provide efficiently, how can we arrive at the situation where infrastructure is in the sorry state that many people claim it to be? Before we can reasonably speak of remedies for this situation, we need to know what might have brought about that situation. Without knowing how this situation has come about, we cannot reasonably determine whether proposed remedies will truly prevent reoccurrence of this situation. Must not the observation of crumbling infrastructure suggest either that such infrastructure is unwanted, with its deterioration representing a form of liquidation of a bad investment, or that public agencies lack the competence to supply infrastructure efficiently and effectively, in which case market-based provision might be superior?

It is necessary to question whether the observation of crumbling infrastructure truly points to some kind of failure in the social organization of infrastructure. It might seem obvious that the observation of crumbling infrastructure is simultaneously a recognition of failure in the social organization of infrastructure. And perhaps it does, but it need not. Under some circumstances, it can be more economical to let infrastructure crumble rather than to repair it. For instance, a bridge might be allowed to deteriorate because a superior bridge is being built, and perhaps at a better

location. Similarly, a school building might be allowed to deteriorate because a replacement is being built elsewhere. It often happens that the combination of demolition and new construction is economically superior to renovating old infrastructure. The mere observation of crumbling infrastructure does not imply that this crumbling is socially destructive. Infrastructure could be allowed to deteriorate as part of a rational program of liquidating outmoded infrastructure and replacing it with superior infrastructure. A highway might be allowed to deteriorate while a superior highway is being built nearby. In this situation, disinvestment in the old highway would help finance the new construction.

We are faced with several possibilities. Those possibilities form a Gordian-like knot. Bridges sometimes collapse; trains sometimes derail; potholes in highways cause broken axels and accidents. Does this situation represent some kind of failure in the supply of infrastructure? It might. But then again, it might not. If cars were prevented from traveling more than 20 miles per hour, traffic fatalities would vanish. But what would be the point of auto travel if you could not travel any faster than you could by horseback? Traffic accidents don't necessarily indicate some kind of correctible failure within the social system inside of which roads are built, cars are made, and people drive. To the contrary, accidents are a reasonable and at the present time unavoidable feature of modern life. This statement doesn't counsel acceptance of any level of traffic fatality, but it does counsel recognition that no reasonable basis exists for claiming that the observation of traffic fatalities or crumbling bridges implies that something is seriously wrong in our social arrangements regarding the provision of infrastructure. Without doubt, those observations could support a judgement that something is not working well in our social arrangements regarding infrastructure. But those observations might also be consistent with a social system that is working well in organizing the replacement of inferior with superior infrastructure. Further analysis is necessary to explore the various possibilities.

We need to go beyond superficial observations if we are to make reasonable statements regarding any offering of judgments regarding the observations of crumbling infrastructure. The crumbling might be socially harmful, but it could be socially beneficial. We stand in front of a theoretical impasse which we can penetrate only by refining our theories to yield better insight into our material of interest. Consider a model where infrastructure, say bridges, is provided publicly through budgetary appropriation. To keep the model simple, suppose a bridge can be constructed in one year and can last indefinitely once it has been constructed, provided only that the bridge undergoes continual maintenance. To illustrate this simple model, suppose the bridge spans a body of ocean water, with maintenance requiring a continual regimen of painting to counteract the corrosive effect of salt water. Maintenance thus entails a crew of painters who start at one end of the bridge and paint their way to the other end over a one-year period, and then go back and do the same thing again, in perpetuity.

Suppose the appropriation required to build the bridge is \$10 million. Further suppose that the annual expense to maintain the bridge is \$1 million, with this expenditure continuing throughout the life of the bridge. If the suitable rate of discount is 10 percent, \$10 million is the present value of that continual stream of \$1-million expenses for maintenance. Under these circumstances, the capital cost of the bridge is \$20 million, apportioned between two activities: construction and maintenance. The decision to build the bridge entails a capital cost of \$20 million, but that cost manifests in two distinct ways. One form of cost vests immediately in the \$10 million required

to build the bridge. The other form of cost is spread over the life of the bridge, with the annual flow of \$1-million maintenance expenses being equivalent to a capital outlay of \$10 million that would finance an indefinite flow of \$1-million expenditures with a 10-percent discount rate. However the accounting is done, the decision to build a bridge that requires a steady state of annual maintenance will entail a capital expense of \$20 million when the suitable rate of discount is 10 percent.

In accounting for the cost of the bridge, it is helpful to distinguish between the nominal and the real forms of cost. As a nominal matter, the bridge costs \$10 million to build, followed by annual maintenance charges of \$1 million. Within some budgetary systems, the construction charge would appear in a capital budget, and with amortization charges appearing in the current budget. Annual maintenance charges would appear in the current budget. All the same, those annual charges are equivalent to a capital charge of \$10 million. In nominal terms, building the bridge costs \$10 million now, while maintaining the bridge costs \$1 million per year throughout the life of the bridge. In real terms, the decision to build the bridge entails a capital cost of \$20 million regardless of the nominal way in which that expense is financed (Buchanan, 1968).

To this point, the author's concern has been a simple one of the arithmetic of capital expenditure and capital maintenance. Arithmetic, however, points to steady states. It doesn't point to bridges collapsing. How can a bridge get to a stage where it collapses? There must be some mismatch at the stage of capital planning wherein annual maintenance expenditures are not sufficient to maintain the capital item. Even more, it is necessary to ask how can this situation occur with publicly financed bridges? Collapsing bridges and such things would seem to indicate some form of political failure. If this is so, it then becomes necessary to inquire into how public-private partnership might improve upon this situation, or what would be required for public-private partnership truly to improve on the public provision of infrastructure.

3. Public provision and public pricing: The bridge as an example

The provision of bridges has a long history in economic analysis going back to the French civil engineer and economist Jules Dupuit leading the way in applying economic analysis to civil construction projects, as Ekelund Jr. (1968) sets forth. The bridge is an analytically interesting illustration of economic principles because those principles can be taken in any of several analytical directions. Probably the most common direction is the welfare economics of public pricing. It has long been recognized that an economic system where the price of a service equals its marginal cost has nice welfare properties, in that there is no other price that will benefit some users of the service without harming other users. With marginal cost pricing, the value that users place on one more unit of the service equals the marginal cost of that service. That marginal cost, moreover, is equivalent to the value that people place on the activity they would have to sacrifice to obtain another unit of that service. Marginal cost pricing under certain conditions is consistent with Pareto efficiency in resource allocation, meaning that it is impossible to find an alternative allocation that would make some people better off without making other people worse off.

The bridge is often used to exemplify a situation where marginal cost pricing cannot be applied in practice, and which challenges customary claims about the efficiency of market arrangements. This can be seen most simply by assuming that a bridge can endure indefinitely once it is constructed. Hence, the bridge entails a construction cost but no maintenance cost. So long as the bridge is not congested, any crossing of an already constructed bridge has zero marginal cost in

that an additional user does not impinge on the ability of other drivers to cross the bridge. Only in the presence of congestion does usage of the bridge entail cost, in the form of reducing the speed at which other users can cross the bridge. Leaving congestion aside, it would seem as though a zero price should be charged for crossing a bridge. The standard welfare propositions maintain that bridges should be free of toll, save for the ability of tolls to reduce congestion during periods of peak usage.

The common claim, however, involves a sleight-of-hand, as Brancato and Wagner (2004) explain in showing that claims of market inefficiency are analytically empty boxes and as Wagner (2015) shows in explaining that orthodox claims regarding second-best claims on behalf of public provision likewise work with illusory analytical boxes. Most significantly, the cost of anything is zero once it has been produced. To say that the marginal cost of all items that have already been produced is zero entails an erroneous conception of cost because that conception is inconsistent with continued production of the item. All products that have already been produced have no cost of production because those costs were borne in the past when the product was produced. Should the prices of such products subsequently be regulated at zero, however, we may be sure that those products won't be produced in the future. This simple recognition confronts us with the need to work with a suitable conception of cost. That conception of cost must be consistent with the reproduction of that item in future years. The marginal cost of items available today is not zero because if price were set at zero, those items would not be produced in future years.

That a bridge has a long life, possibly even an indefinitely long life, is irrelevant to its marginal cost. Despite its long or indefinite life, a bridge has a cost of production, which is what is necessary to elicit the future production of bridges. A bridge that requires a capital outlay of \$20 million but requires no maintenance in future years still has a marginal cost. That cost pertains to the amount of capital it would require to build a larger or more durable bridge. A cost that is borne now with no expenses necessary thereafter has the same cost as any product that has a short duration. The durability of a product once constructed has no bearing on marginal cost and the welfare economics of pricing. Duration, however, does bear upon the ability of public agencies to borrow against public projects by letting them depreciate.

Duration also influences the institutional and organizational arrangements that entrepreneurs might develop to finance their activities. A producer of cabbage can charge new prices each growing season. The producer of a bridge cannot do that because most of the users reside in future years. Current drivers will not be willing to pay enough to support the \$20-million bridge. To support the bridge requires that the entrepreneur be able to charge future users. To do this does not require public provision, but it does require an alternative framework of organizational arrangements to ordinary market arrangements. In particular, the bridge must be organized in some club-like fashion where a driver must belong to the club to cross the bridge. Over the years, membership in that club continually changes, with that change being the instrument through which future users contribute to supporting the bridge. As Buchanan (1968) notes in his effort to develop an explanatory treatment of the supply of public goods, a significant part of any such theory must center on the entrepreneurial generation of the organizational and institutional arrangements that will enable future users to be charged for their usage.

4. Agency cost and public administration

The welfare economics of public administration assumes away any problem of the agency cost that is widely recognized to be present with private organizations. The only reason for doing this is analytical convenience, and this inconvenience comes at the price of exaggerating the benefit of public provision by ignoring a possibly significant element of the cost of public provision. To start this examination, assume that the provision of bridges is wholly public. There are many reasons why public bridges or other infrastructure might crumble. To be sure, such crumbling is contrary to the capital-theoretic arithmetic of building and maintaining bridges. But that arithmetic ignores the agency cost associated with public enterprises. Corruption is one possible source of agency cost that can result in crumbling infrastructure. The \$10-million bridge might require concrete and steel of some particular grade. Concrete and steel both come in many grades, with higher grades being more expensive than lower grades. The quality of steel required for the \$10-million bridge might be adulterated through using lower grades of steel and concrete, with increases in the extent of adulteration lowering the expense of building the \$10-million bridge. Should that adulteration reduce the actual expense to \$9 million, the producer will receive a \$1-million profit from adulterating the quality of the concrete and steel.

While the quality of the concrete and steel is subject to auditing and inspection both by the builder and the public administrator, every so often reports surface of sections of bridges collapsing due to use of inappropriate materials. While auditing and inspections operate to guard against such outcomes, these processes do not work perfectly. A builder who is paid \$10 million for a bridge, and who is able to insert cheaper materials along the way, will be able to increase his net worth through adulterating the materials used in building the bridge. Auditing is an activity that is idealized as checking the temptations to do such things as cheating on the materials used, and surely it typically works this way. But yet we also observe such things as crumbling infrastructure, which leads one to wonder how to give an account of such observations. One possibility might entail a public auditor who turns a blind eye to such substitution of inferior for superior materials, possibly by receiving a direct bribe but more likely by receiving compensation in some other manner, as illustrated by an enhancement in future employment prospects or by a shift of business to a family member.

In her *Systems of Survival*, Jacobs (1992) distinguishes between commercial and guardian moral syndromes. By this distinction, Jacobs meant that a well-working society requires a balance between two distinct moral syndromes that point in different directions. Those syndromes, moreover, work together under the best of circumstances, which in turn requires a proper tension between the syndromes. One syndrome is what Jacobs describes as the commercial syndrome. This syndrome entails people who are always looking for opportunities to do more business. The other syndrome is what Jacobs describes as the guardian syndrome. This syndrome operates to protect legitimate commercial relationships from invasion by alien and destructive actions. What Jacobs describes as “monstrous moral hybrids” arise when one syndrome penetrates the other domain. Auditing belongs to the domain of guardian action. The use of supplies by builders belongs to the commercial domain. Should a builder and an auditor conspire whereby the builder converts supplies to his personal use while the auditor accepts compensation to hide the theft, the commingling of commercial and guardian syndromes illustrates what Jacobs meant by a monstrous moral hybrid. Opportunities for monstrous moral hybrids are numerous within entangled systems of political economy (Wagner, 2016; Patrick and Wagner, 2015), where

politicians engage in commercial activity and business people engage in political activity.

The distinction between a \$10-million bridge and a \$9-million bridge can be described as a matter of different production functions. The \$9-million bridge is produced according to an inferior production function, one suitable for a bridge that entails less durability or receives less usage. Agency problems are latent in commercial transactions, but there is good reason for thinking that ordinary commercial transactions and relationships economize on the severity of those problems. However, public agencies are in a different situation with respect to potential agency problems than are private enterprises. Private firms have market value; public agencies do not. Enterprise value can serve to signal enterprise performance, but public enterprises cannot do this so directly. The managers of private enterprises can be compensated by arrangements that tie executive compensation to firm performance. Public enterprises cannot do this so directly. Hence, we would expect to find agency failures more prominent with political enterprises than with private enterprises, with Jensen and Meckling (1976) and Fama (1980) illustrating the relationship between agency cost and commercial organization.

A further source of possible infrastructure failure arises once it is recognized that regular maintenance might be transferred into other budgetary categories with higher political payoff. The bridge might initially have been approved under the presumption that it would entail a \$10-million capital expenditure followed by annual maintenance expenditures of \$1 million. In subsequent years, however, budgetary politics might slow the maintenance on the bridge so that it is painted over only a two-year period. Here we encounter a potential problem of public administration and management in addition to a problem in public budgeting, for the reduction in maintenance is a disguised form of public borrowing along the lines that Eusepi and Wagner (2017) examine in explaining the illusory features of democratic debt.

5. Infrastructure erosion as disguised public debt

Administratively, financing the bridge could be incorporated into either a current or a capital budget. A common illustration would place the construction of the bridge in a capital budget to be amortized over some number of years and would place the expenses of maintenance into the current budget. To keep the illustration relatively simple, suppose the bridge is capitalized over ten years, at which time it is planned to be replaced. The \$10-million capital outlay is incurred immediately. In keeping with the theme of simple calculations, let us assume that annual maintenance expenditures are paid at the end of each year rather than being distributed evenly throughout the year. This assumption allows us to work with discrete calculations without changing the point to be made. The total planned outlays on the bridge are \$20 million, with \$10 million paid the first day of the first year and \$1 million paid the first day of years one through ten, meaning that annual maintenance expenditures are paid in advance. Those expenditures could also be assumed to be paid in arrears, which would lower modestly the present value calculations without changing the analytical implications. As presented, this arrangement is a simple matter of accounting.

Behind any system of accounting, however, lies people who pursue their various interests. At the time the bridge is approved, it is by the assumption of this model being agreeable to all participants in the budgetary process. Agreement at the point of initial approval, however, does not imply continued agreement at later moments. This is the problem of time inconsistency, one prominent examination of which is Kydland and Prescott (1977). The decision to spend \$1 million on

maintenance annually might have been agreeable to the participants when the decision was made, but the continuation of that decision might not be agreeable to everyone in later years.

We may assume that a program of annual maintenance payments of \$1 million is a cost-minimizing program of maintenance for the life of the bridge. If so, deferral of maintenance will increase the present value of the cost of maintaining the bridge. In this illustration, the need for maintenance arises to offset the corrosive effect of seawater and salty atmosphere. That corrosive effect, moreover, does not operate linearly. It is not possible to overcome the failure to spend \$1 million during one year by spending \$2 million during the next year. The corrosive effects of salt water operate as a form of compound interest in that corrosion abets further corrosion. A bridge that is projected to last ten years when \$1 million per year is spent on maintenance may become dilapidated and useless after eight years without maintenance. A program of optimal maintenance will entail steady maintenance over the life of the bridge. Without maintenance, the bridge's life will shrink from ten years to eight years.

After it has been built, the bridge is wonderfully sturdy and is far from being dilapidated. Maintenance is but one of many objects of expenditure within the budget. A political entity facing numerous claims for budgetary appropriation might end up supporting other items of expenditure over bridge maintenance during the early years after the bridge has been built. This deferral would be a disguised form of public debt, and such deferral of maintenance on long-lived capital projects is effectively a form of public debt and is subject to the same temptation that Buchanan and Wagner (1977) and Kydland and Prescott (1977) set forth. For a year or two or even three, the bridge that is designed to last ten years will appear to be getting along well without maintenance, with the compounding effects of corrosion noticeable only to expert civil engineers. The engineers will probably report their findings and concerns to politicians and administrators, who in turn will table the expressed concern for consideration at a later time.

Suppose the bridge is allowed to go five years without maintenance, at which time the effects of corrosion have become visible to some members of the general public, and whose concerns succeed in increasing the salience of bridge maintenance on the budgetary agenda. Due to the compounding effects of corrosion, the bridge will last its projected ten years only if annual maintenance expenditures are set at \$3 million. The present value of providing \$1-million annual maintenance in advance for ten is \$6.76 million. The present value of an alternative maintenance program where no maintenance is provided for five years, after which maintenance is \$3 million per year, is \$7.77 million. In present value terms at the time the bridge is built, the program of deferred maintenance is \$1 million more expensive than the program of steady maintenance. Even more, that present value of \$12.5 million when it is evaluated at the time maintenance is stated in the sixth year of the bridge's life. A maintenance program to carry the bridge through its planned ten-year life has a present value of \$6.76 million if maintenance began immediately after construction. Five years later, the present value of maintaining the bridge so it could reach its planned ten-year life has nearly doubled to \$12.5 million. It would be understandable if people are willing to describe this situation as one of crisis. While that crisis appears to mass opinion to be an exogenous event, that situation is not exogenous but is a causal outcome of a budgetary process.

6. Public-private partnership as triadic exchange

By now, the point behind the preceding line of analysis should be clear: delayed maintenance as compared with a program of regular or efficient maintenance is a disguised form of public debt. There is much literature on the political rationality of public debt, much of it set forth in Buchanan and Wagner (1977), Wagner (2012), and Eusepi and Wagner (2017). To the extent these considerations of disguised public debt are pertinent for contemporary concerns about infrastructure, those concerns fold into more general concerns about tendencies toward excessive public borrowing within democratic political systems.

Once it is recognized that crumbling infrastructure is a disguised form of public debt, we can wonder what public-private partnerships have to do with infrastructure. One simple answer: money! Those partnerships can provide capital funds that substitute for postponed maintenance. The relevant governmental entity has spent what should have been maintenance on other activities, and now the budgetary process does not support the increased taxation necessary to compensate for the postponed maintenance.

It is easy to understand why a public agency, that has transferred maintenance into other items of spending for a sufficient number of years that the infrastructure is now crumbling, would seek partnership with private corporations. But why would those corporations agree to participate with the public entities? Where resides the gain to those corporate entities? Obviously, there must be the anticipation of gain from those corporate entities. But what can the public entities bring to the partnership with the corporate participants? The corporate entities bring capital, for that is the point of the partnership. But the public entity doesn't bring capital, at least not in the normal commercial meaning of the term. To the contrary, those political entities bring negative capital value, as revealed by the capital value it would require to restore that infrastructure to what its condition would have been had a program of efficient maintenance been followed from the start.

Now we arrive at the question of why private enterprises might undertake partnerships with political entities that have negative capital value. The answer must be that the political entity can use its power to make the partnership worthwhile to the corporate entities, which in turn requires the imposition of capital losses elsewhere in the society. In this respect, Podemska-Mikluch and Wagner (2013) distinguish between dyadic and triadic exchanges. Behind this distinction lies the recognition that all processes of political economy entail transactions, only there are two forms of transaction. Commercial transactions are dyadic, which means they entail agreement among the participants. While a dyadic relationship customarily pertains to two participants, those relationships can be extended to include agreement among a multiple number of participants. The key feature of dyadic transactions is that they are agreeable to the participants, whether there are two, two hundred, or any number of participants.

By contrast, the key feature of triadic transactions is not that they involve three participants. Triadic transactions can entail three hundred participants or any number. The key feature is that triadic transactions have a coalitional structure that dyadic transactions lack. The central template for a triadic transaction is the ability of a dominant majority to force participation on an unwilling minority, often through using the power to tax. With respect to public-private partnerships regarding infrastructure, the partnership must include two types of private entities. One type of entity is willing participants in the partnership with the public entities. The other type of entity is unwilling

participants whose participation is forced through taxation and regulation. The precise form that forced participation takes is highly variable and depends on particular circumstances.

With respect to the bridge example around which this essay has been constructed, the participation of private partners within the public-private partnership would involve the private partner assuming responsibility for the cost of the deferred maintenance that manifests in crumbling infrastructure. There are numerous ways this assumption of responsibility could occur. Within the terms of this example, the bridge is scheduled to last five more years and then be replaced. In exchange for assuming the implicit public debt of deferred maintenance, the political entity could agree to abandon the old bridge and to build a new one, and then turn the bridge's subsequent operation over wholly to the private entity. Where the public entity had employed a large set of manual collection booths as part of an agreement with a labor union, the political entity might allow the private partner to replace the manual toll booths with electronic instruments. The political entity might also award the private entity concession rights to parking garages downtown that had previously been operated by the political entity. In short, there are numerous ways a political entity could enlist private enterprises in assuming responsibility for the implicit public debt created by deferred maintenance, and all of these would involve wealth transfers between the private partners and the general public, with those transfers disguised through complex transactional arrangements through which those not invited into partnership end up covering the capital losses of deferred maintenance.

7. A concluding observation

How can public-private partnerships be a remedy for crumbling infrastructure? For infrastructure to be crumbling, there must have been preceding failures in public management and budgeting. This crumbling condition of infrastructure means that those public operations now have negative capital value when compared against what would have been the case had infrastructure been well managed from the start. Hence, public-private partnerships entail private corporations importing capital into the operations of public entities. For this action to be rational for private enterprises, those private participants must be granted advantages because those enterprises are effectively covering the debt of public entities. Those advantages, moreover, must come at the expense of the general public, who in one way or another are supplying the missing capital necessary to retire the disguised public debt that was created by deferred capital maintenance.

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