Can Insurers Fill the Infrastructure Funding Gap?

Steven J. Dreyer

Abstract:

A policy paper suggesting practical ways to encourage an expanded role for insurers in supporting vitally needed U.S. infrastructure development. Section I defines infrastructure, outlines the funding challenge, and proposes a National Infrastructure Registry. Section II suggests ways to increase the supply of investable infrastructure projects, calling for expanded use of public-private partnerships. Section III describes why insurers are natural infrastructure investors and how improved disclosure can help fulfill their potential. Section IV calls on insurance regulators to recognize the differentiated risk characteristics of infrastructure assets.

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At a high level, the idea of increasing infrastructure investment enjoys broad support. Most see an acute need in developed countries to replace aging transportation, water, energy, and social infrastructure, and to invigorate developing economies with new infrastructure. But most also see that these needs outstrip governments' ability to pay for them. The G20's Global Infrastructure Outlook puts the funding gap at about $400 billion per year just to sustain current levels of economic growth. The U.S. comprises about one quarter of the shortfall: $100 billion per year today expanding to $200 billion by 2035.[1] Failure to address the infrastructure gap will ultimately increase public safety risks, harm economic competitiveness, cause inefficient capital allocation, and diminish citizens' quality of life. Bad roads crack truck axles, clogged courthouses slow the administration of justice, congested ports and roadways delay delivery of vital components, and inadequate public transit hinders the ability to put jobs and people together.

While views diverge about how best to fill the infrastructure funding gap, its size and growth make it increasingly clear that private investment must be part of the solution. There is simply not enough additional tax revenue or borrowing capacity for governments to carry the burden alone.

In the U.S., where most infrastructure is built by state and local governments, the costs of public pensions, health care and education can crowd out infrastructure spending. Federal funding cannot be counted on, given record-high national budget deficits and competing spending needs. Private investment lurks as a promising, but as yet underachieving alternative. Among the obstacles to effectuating large-scale private investment, none is greater than the lack of investable projects, the so-called "project pipeline." The U.S. infrastructure finance market has not reached critical mass.

While leading Investor Communications for S&P Global Ratings, I asked portfolio managers of long-term institutional investors such as pension funds and insurance companies why they struggle to meet their own minimum targets for infrastructure investment. Universally the reply was that there are too few opportunities. "I can't afford to hire someone to understand investing in bridges and airports when we see only one or two deals per year," was a typical refrain.

I also asked state government officials why they don't utilize public-private partnerships (P3s) to a greater extent to attract new financing sources. The responses here were more varied, including political risk in being seen as "selling off the crown jewels," that it is cheaper for government to borrow at lower rates than to pay fees to a private investor with its higher cost of funds, and a general aversion to expending energy to educate policymakers and investors about the peculiar characteristics of infrastructure assets. Even if all of these challenges could be overcome, in some U.S. states it is not even legal for governments to engage with the private sector in partnerships for infrastructure development.[2]

To attract large-scale private investment to infrastructure projects, public officials must think strategically to extract value from assets they own. Governments can "rent out" the earnings power of their infrastructure assets to private investors in exchange for upfront payments and transfer financing and operating risks, enabling its citizens to enjoy the benefits of new infrastructure sooner than would

[1] See G20's Global Infrastructure Initiative web page: https://outlook.gihub.org and the American Society of Civil Engineers' *Infrastructure Report Card* at https://www.infrastructurereportcard.org.

[2] According to U.S. Dept. of Transportation's Center for Innovative Finance Support, as of August 2018, 13 states lacked P3 enabling legislation and 14 states had limited legislation, i.e., authority for specific projects or ones sponsored by select agencies.

be the case by going it alone. To achieve favorable results, the interests of investors, government, and the public must be aligned, and that begins with a common understanding of which infrastructure should be prioritized and why.

I. Create a National Infrastructure Registry

Infrastructure most needed is the type that provides long-lasting benefits, and therefore generally consists of physical assets supporting economic growth and resilience to material risks. The market would benefit from a publicly-available listing – a National Infrastructure Registry – of projects that meet this definition, each being essential, long-lived, large-scale, and in the public interest.[3] While think tanks and others occasionally have published lists of "top projects of national interest" and the like, there is no comprehensive infrastructure inventory to which investors, developers, governments, and regulators can refer.[4]

Who should create such a list? Elected representatives in a given jurisdiction, i.e., government officials at local (city council or county supervisors), state (governor or legislature), and national (executive branch or Congress) levels. Including each level of government ensures a wide array of potential projects, a means for comparing projects' relative benefits, and most importantly, visibility and accountability to the citizenry. Voters would own priority-setting through their elected officials and public debate. This approach underscores that infrastructure assets made eligible for private sector investment are public property. In exchange for debt or equity investment, private investors receive a share in cash generated by a project built and maintained to public specifications, but do not take an ownership interest.[5] The "crown jewels" remain the property of the people.

Because citizens in different geographic areas have different priorities, such as creating new jobs, protecting against adverse weather events, reducing emissions, or shortening commutes to work, their preferred infrastructure projects would likewise be different. Rural areas may prioritize water or electricity distribution; densely-populated areas may value traffic decongestion. Cold-weather states may prioritize bridge repair; coastal cities may rank flood control as the greatest need. The Registry would include all such projects so long as relevant elected officials have confirmed their importance.

Should investment be encouraged in shareholder-owned utilities and other corporations that build power plants and gas pipelines? It depends. Where such companies are required by regulation or charter to build and improve critical infrastructure, their securities could qualify as infrastructure investments. However, in a corporate structure, owners can change product lines or strategies, redirecting invested funds to other purposes. Unlike special purpose vehicle (SPV) structures normally used in project finance, investments in corporations would need to be verified to ensure that proceeds

[3] Details are beyond the scope of this article, but these characteristics could be measured by project costs or revenues relative to the size of economy served, number of citizens benefitting, structural features, or by opinion polls.

[4] In February 2019, the U.S. Department of Transportation introduced a transportation project listing that is a step in the direction of this vision. Available at www.transportationproject.org.

[5] An equity investment in infrastructure is an ownership interest in a special purpose vehicle or corporation that builds or operates the assets, not in the assets themselves.

are directed to infrastructure projects as advertised.[6] Investments secured by the infrastructure assets would be most likely to meet the definition, but relevant government officials should have the last word.

Recommendations:

- The National Governors Association or other state-level body should develop, maintain and make available to the public a "National Infrastructure Registry" of qualifying infrastructure projects, collecting nominations from responsible local, state and federal authorities.
- In nominating projects for the Registry, authorities should be guided by the definition of infrastructure as essential for their jurisdiction, long-lived, large-scale, and serving the public interest. The only qualification for inclusion is that the respective authorities have approved the project and thereby take political responsibility for its benefits being realized should the project be completed.
- The Registry should include for each project the nominating jurisdiction and responsible public official, a project description, its location, general classification (transportation, energy, or social infrastructure), procurement type (i.e., Design-Build, Design-Build-Operate-Maintain, etc.), an estimate of the present value of economic benefit and total costs over each project's life span, the financing structure, including debt and equity instruments to be issued, issuance amounts, maturities, and credit ratings, if applicable.
- Local, state and federal regulators should prioritize Registry projects for permitting and environmental impact reviews. Permitting and review processes should be conducted simultaneously, not sequentially.

II. Expand Use of Public-Private Partnerships

Some argue that private sector involvement in public infrastructure is not needed because governments can borrow at lower rates of interest and build it themselves. However, many governments have political and fiscal limits to borrowing capacity and infrastructure is often crowded out in favor of needs deemed more pressing. As shown in the chart below, U.S. municipal bond issuance has stagnated, even during an extended period of low market interest rates that saw substantial increases in corporate and Federal government borrowing. At the state and local level – where most infrastructure assets reside -- there is little appetite to increase debt levels to support infrastructure or other spending initiatives.

[6] In most public-private partnerships, the winning bidder creates an SPV that is legally structured for the sole purpose of performing a specific function such as building a bridge. Investors can be confident that funds provided to the SPV will be dedicated to its function. While corporate securities may not commonly be "advertised" as supporting infrastructure, should this paper's recommendations be implemented, there would be incentive for securities issuers to do so, much as issuers of so-called "green bonds" pledge to invest proceeds in environmentally-friendly activities. In both cases, investors would look to the issuer's history and third-party evaluation services to judge the likelihood that invested funds will be deployed as expected.

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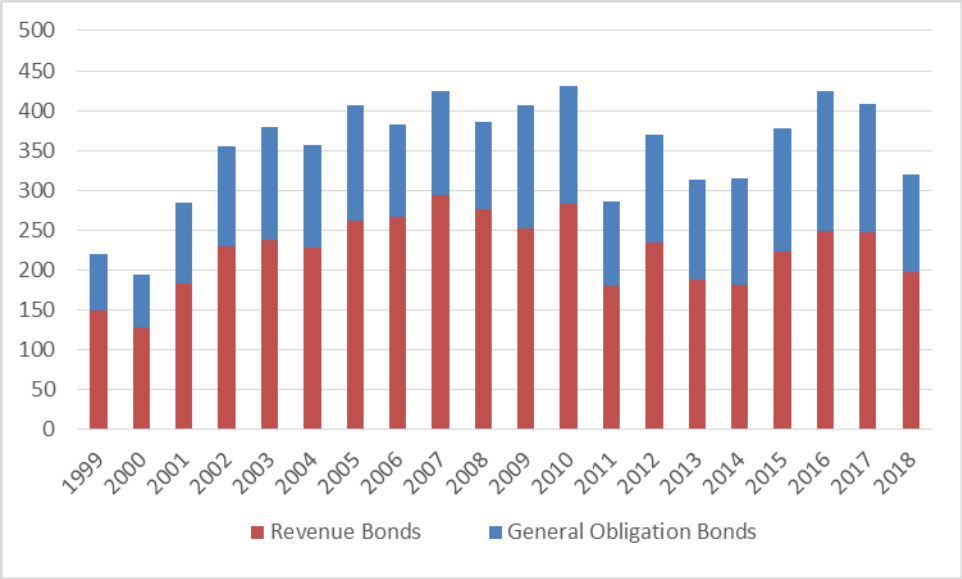
20 Years of U.S. Municipal Bond Issuance, $ billions



Source: SIFMA

Beyond the limitations on the supply of municipal securities, those that *are* issued often do not actually provide direct infrastructure exposure for investors. Municipal "revenue bonds" are secured by income derived from public works assets, but they are often guaranteed or "wrapped" by bond insurance, which carries a cost that affects their yield. And even uninsured revenue bonds may be perceived as also having a backstop, i.e., that the municipality will come to the rescue if revenues generated by the financed asset are insufficient to make debt service payments. Either way, revenue bonds pay a rate of interest that is less (even after adjusting for tax-exemption status) than would be the case if the bond issuer was a legally separate special purpose vehicle. In other words, municipal revenue bond investors forfeit some yield in exchange for an explicit or implied repayment guarantee, and therefore are not really getting pure infrastructure risk exposure and a commensurate return.

Although municipal bonds are generally attractive to investors seeking interest income exempt from federal, state and local tax, they are not appealing to investors without a need to offset taxable income. Many investors, including insurers, seek higher returns than municipal bonds can provide.

Securities issued by public-private partnerships to finance public infrastructure provide a very different alternative. Investors earn a higher return than with municipal bonds because they are taking on more risk. But that doesn't mean that the public sector partner pays more to achieve the infrastructure benefits. In fact, the discipline of private capital drives efficiencies such that total life cycle costs can be lower for a P3 than for a traditional municipal procurement even if initial financing costs are higher.

Contrast the "lowest bidder" approach commonly used in government contracting to ensure the lowest up-front taxpayer cost, compared with the P3 approach that would take into account the full costs over a project's useful life, which could be 40 years or longer. The low-bid choice can be more expensive in the long run after factoring in maintenance and repairs. Private investors, who expect a return on their investments over many decades and depend on the infrastructure asset to generate those returns consistently, emphasize building infrastructure that will stay up and running over the long term.

Also, when projects are structured to generate cash returns upon completion of construction and the start of operations, a powerful incentive exists for developers to complete them on time and at sufficiently high quality to ensure reliable operations. This switches on cash generation as soon as possible and keeps it flowing thereafter, providing the promised societal benefits that much sooner as well.

A long-term investor's focus on a project's full life cycle encourages using newer technologies that may be deemed too expensive or out of scope for procurements focused only on up-front costs. Technologies such as intelligent roads with sensors to communicate repair needs and monitor traffic, smart buildings that detect internal faults and leaks before they become major problems, and use of virtual reality design tools can shorten construction times, reduce labor and maintenance costs, and provide a safer work environment.

Perhaps the most important feature of a P3 is the ability for government to shift to the private sector risks it does not want to accept. In exchange for the right to earn revenue from public assets over some period of time, private investors accept potentially costly uncertainties associated with construction delays, weather disruptions, supply shortages, labor availability, and other operational surprises. This not only gives politicians an accountable party if things go wrong, it provides for government and the private sector each to do what it does best. Government selects the projects, sets the requirements, and monitors performance, while the private sector partners may finance, build, operate, and maintain the asset. After some successes in such arrangements, governments may find it preferable to rent rather than own additional services previously provided by them, generating further long-term fiscal savings. By outsourcing almost all public services when it was incorporated in 2005, the city of Sandy Springs, GA, highlighted the benefits of streamlined municipal operations, keeping debt levels and tax rates low. It is an extreme case, but illustrative of the power of P3s when done effectively.

Public-private partnership revenues come either through actual cash generation, such as through a toll or usage fee, or via fees called availability payments: regular outlays by government to the private sector partner to keep an infrastructure asset functioning per specifications. Which structure makes sense depends on the asset's characteristics.

Best practices in P3s are emerging as larger projects are completed. In 2018, the Port Authority of New York and New Jersey contracted with private partners to open the new Goethals Bridge on budget and on time, yielding a safer span with greatly expanded traffic capacity. Two separate P3 projects in Washington DC's Northern Virginia suburbs, 495 Express Lanes and 95 Express Lanes, introduced "managed lanes" to provide drivers an option to pay a variable toll for a quicker ride. Long Beach, California's George Deukmejian Court House was the first civic building in the U.S. financed by a public-private partnership, locking in maintenance and operating costs for 35 years and assuring that building upkeep will be stable over that period, regardless of state budgetary challenges that may arise over that period.

There have been failures as well, providing valuable lessons. The Indiana Toll Road bankruptcy in 2014 underscored the importance of realism in traffic forecasts, and in that same year, technological problems delayed toll processing for the Elizabeth River (Virginia) Crossings project. As a result of such experiences, contracts today are generally better structured, with clearer terms especially with regard to performance metrics, maintenance expectations, and dispute resolution.

Recommendations:

- Legislatures in the 27 states which have only limited or no P3 enabling laws should pass comprehensive P3 legislation.
- State and local government officials should create inventories of physical assets, which may include water/sewer systems, roadways, bridges, transit systems, transportation hubs, power generation/distribution, health care facilities, court houses, public housing, military housing, other public buildings, and undeveloped land.[7]
- Officials should report on each inventoried asset's eligibility as a candidate for private investment to finance construction, maintenance, or upgrade. A qualifying asset would be any that can generate revenues for private investors in exchange for the asset being placed into service more quickly, more effectively, and/or at lower taxpayer cost over the long term.
- Private sector partners in existing P3 projects should report regularly on project development progress and financial performance, using a standard format approved by public officials and maintained by an industry group such as the Association for the Improvement of American Infrastructure or the American Society of Civil Engineers.

III. Improve Disclosure on Infrastructure Investment Holdings

Due to their long lives and predictable cash generation, infrastructure investments are an ideal match to long-term obligations of institutional investors like endowments, sovereign wealth funds, pension funds, and insurers, especially those selling fixed annuities, permanent life insurance, long-term care, and structured settlements. U.S. life insurers, for example, hold nearly $4 trillion in assets against policy reserves for life insurance, annuities and accident and health policies. If there were prototypical "buy-and-hold" investors, it would be these insurers, which must ensure funds are available for payouts in the distant future to fulfill promises being made today. Such insurers therefore seek high quality investments that provide steady cash flows over decades. Infrastructure should be a perfect fit.

At the same time, markets for infrastructure-backed securities are not as liquid as those for corporate or government securities. By comparison, infrastructure issues have smaller trading volumes, more ambiguity as to fair market value, and are more heterogeneous within in the asset class. So the features which distinguish infrastructure and contribute to its favorable default and recovery attributes (to be explained in Section IV) also contribute to it being a "not for everyone" type of investment. Buy-and-hold investors like many life insurers, at least in theory, have the patience to ride out market swings and get paid for it through higher returns over the long run.

The extent that life insurers actually do buy and hold is not clear, but their balance sheets suggest that they take a long-term view. According to the American Council of Life Insurers (ACLI), about 38% of bonds held by U.S. life insurers at 12/31/2017 had remaining maturities of more than 10 years. At time of purchase, almost 40% of life insurer bond holdings had maturities of 20 years or more. These

[7] See the Bipartisan Policy Center's "Bridging the Gap Together: A New Model to Modernize U.S. Infrastructure," for an exposition on this idea and several other recommendations for expanding public-private partnerships, available at https://bipartisanpolicy.org/library/modernize-infrastructure.

statistics have remained stable over several years.[8] While there is not detailed data available on the maturity distribution of life insurers' liabilities, a 2017 Bank of Japan study indicated an average liability duration of 11.3 years for U.S. life insurers, closely matching a 10.5 year average duration for assets.[9]

Financial reporting under U.S. Generally Accepted Accounting Principles provides that insurers classify fixed income investments as either "Trading," "Available for Sale," or "Held to Maturity."[10] Most insurers classify nearly all of their bonds as "Available for Sale," which are therefore reported at fair value rather than at amortized cost, which would be the case for bonds reported as "Held to Maturity." Although this introduces volatility, the practice provides insurers maximum flexibility; penalties are significant for selling bonds prior to maturity that have been classified in the latter category. The upshot is that GAAP reporting requirements provide no particular insight into insurers' actual investment holding behaviors, and actually provide a mild disincentive to the buy-and-hold approach.

Because there has been no standard definition of infrastructure, it is difficult to estimate just how much of insurer investments are dedicated to the asset class. By way of illustration, ten of the largest U.S. life insurers held more than one trillion dollars in bonds at year-end 2018, of which about 71% were invested in a wide array of corporate and industrial bonds, as shown in the table below. Some of these investments might be considered as including infrastructure, but the vast majority are not.

Special revenue bonds, 14% of the total ($188 billion) for this group of companies, would have the highest concentration of infrastructure. However, this category is "noisy" and includes many bonds that would not meet the infrastructure definition. No firm conclusions can be drawn from the data, other than that better classification is needed. It appears, however, that insurers probably have additional capacity for infrastructure-backed bonds in their portfolios.

Bond Holdings (12/31/2018)	**Total** ($ mil)	**Corporate, Industrial**	**Special Revenue**	**Other Govt.**	**Other Bonds**
New York Life	$195,802	70%	19%	8%	3%
TIAA	$195,283	67%	10%	20%	3%
Metlife	$164,135	57%	18%	19%	6%
Northwestern Mutual	$155,123	71%	22%	5%	3%
AIG	$149,610	81%	9%	6%	3%
Prudential Financial	$127,284	72%	8%	16%	4%
MassMutual	$105,613	72%	6%	8%	14%
Allianz USA	$97,745	81%	14%	5%	0%
Lincoln Financial	$89,257	89%	7%	2%	1%
Sammons Financial	$66,958	61%	25%	11%	2%
Group Totals	$1,346,809	71%	14%	11%	4%

Source: Insurers' 2018 statutory financial statements filed with state regulators. Totals may not add to 100% due to rounding.

[8] ACLI Life Insurers Fact Book 2018, available at https://www.acli.com/posting/rp18-007.

[9] "International comparison of life insurers: Balance-sheet differences and their financial stability implications," Bank of Japan Review, April 2017, available at https://www.boj.or.jp/en/research/wps_rev/rev_2017/rev17e02.htm/. Asset and liability durations were also similarly matched for Japanese and U.K. life insurers, with both countries having slightly longer duration periods than U.S. companies for both assets and liabilities.

[10] Like other companies, insurers are expected by the Securities and Exchange Commission, Internal Revenue Service, and other government agencies to provide financial statements in accordance U.S. GAAP principles. State insurance regulators, on the other hand, prescribe that financial statements follow statutory accounting principles. The latter generally require insurer bond holdings to be reported at amortized cost value.

Recommendations:

- The National Association of Insurance Commissioners (NAIC) should create in its annual statement form a reporting category for infrastructure debt, referencing the National Infrastructure Registry in its filing instructions. The International Association of Insurance Supervisors (IAIS) should likewise promote disclosure of infrastructure investment holdings by internationally active insurance groups.
- In their assessments of an insurance company's liquidity, insurance regulators should consider that infrastructure assets are less liquid than otherwise-similar assets, but credit should be given to insurers with liability-matched maturity profiles and with a buy-and-hold track record. In other words, assets and liabilities should be looked at simultaneously, with an eye towards product features, when assessing the adequacy of an insurer's liquidity.
- To encourage long-term thinking by investors and securities issuers, the Financial Accounting Standards Board, NAIC, and other financial regulators should require disclosure of 5-, 10-, and 20-year investment performance for insurance companies, pension funds, and other institutional investors. These disclosures should include breakdowns of capital gains vs. interest and dividend income, and trading activity.

IV. Consider Differentiated Risk-Based Capital Charges for Infrastructure Investments

Unlike other asset classes which may be defined by their structures or similarities – think mortgage-backed securities, money market funds, or common stock – infrastructure assets can vary widely so long as they exhibit the fundamental characteristics of being essential, long-lived, large-scale, and in the public interest. These features create differentiated performance compared with investments which do not have them. Research shows that debt instruments (loans, bonds or preferred stock) that finance infrastructure projects default less frequently and result in greater investor recovery in the event of default than non-infrastructure debt.[11]

A 2018 S&P Global study came to similar conclusions as those by the World Bank and Moody's Investors Service: infrastructure investments behave differently than non-infrastructure investments.[12] S&P's study tracked thousands of infrastructure loans and bonds that, as a group, demonstrated lower rates of default than that of non-financial corporate debt in 35 of the last 36 years.

After adjusting for credit ratings (the median S&P rating on non-financial corporate bonds is one category lower than for infrastructure bonds at BBB), default rates on infrastructure were consistently

[11] These studies focus on debt, including private loans where data is available. There is little available data on performance of equity investments in infrastructure vehicles, although it would be expected to correlate to the performance of debt issued to finance the same projects. There is much more debt than equity investment issued to support infrastructure. Project financings, which use a special purpose vehicle, are typically structured at around 80% debt and 20% equity.

[12] "Default, Transition and Recovery: 2017 Inaugural Infrastructure Default Study and Rating Transitions," S&P Global Ratings, November 20, 2018, available at https://www.spratings.com/en_US/infrastructure#researchthoughtleadership; "Credit Risk Dynamics of Infrastructure Investment: Considerations for Financial Regulators," World Bank Group, March, 2018, available at http://documents.worldbank.org/curated/en/125511521722022110/Credit-risk-dynamics-of-infrastructure-investment-considerations-for-financial-regulators; "Infrastructure Default and Recovery Rates, 1983-2017," Moody's Investors Service, September 27, 2018, available at https://www.moodys.com/research/Infrastructure-Project-Finance-Infrastructure-default-and-recovery-rates-1983-2017--PBC_1110153.

lower than for non-financial corporates at each rating category – AAA, AA, A, BBB, BB, and B – at 10-year and 15-year time horizons. The differences are most striking in the lower half of the credit quality spectrum. For rating categories BBB, BB and B, default rates were lower for infrastructure than for non-financial corporates for each rating category and over all time horizons measured.

In those cases where the debt defaulted, investors in infrastructure salvaged 61 cents on every dollar, compared with 57 cents for non-financial corporate debt. When looking only at senior secured debt (the most common form of long-term financing for stand-alone infrastructure projects), this rate of recovery rises to 73 cents for infrastructure. Looking beyond broad averages reveals that about half of all infrastructure defaults yielded more than 90 cents on the dollar, relative to only 34% of non-financial corporate defaults that produced such a high level of post-default recovery.

Not only do infrastructure bonds and loans default less frequently and provide more salvage value in the event of default, their credit quality is generally more stable over time than non-financial corporate bonds. The S&P study shows fewer and smaller rating changes for infrastructure debt in most of the years studied. In 2009, for example, when credit trends were generally negative during the ongoing financial crisis, the average downgrade rate of non-financial corporate ratings was three times that of infrastructure ratings. Two years later, when non-financial corporate ratings were being significantly upgraded, infrastructure ratings were virtually unchanged in terms of direction and magnitude. Reduced ratings volatility translates into more stable and predictable value for investors.

Why does rated infrastructure debt perform consistently better than rated non-financial corporate debt? Are rating analysts more conservative in assigning ratings to infrastructure debt? Are infrastructure projects managed more conservatively than are corporations? Are owners of infrastructure projects more hesitant to file troubled assets into bankruptcy? There may be some truth in each of these explanations. Whatever the underlying causes, infrastructure's differentiated performance is worth the attention of portfolio managers and regulators of investing institutions.

Recommendations:

- In its risk-based capital calculation for insurers, the National Association of Insurance Commissioners should adjust capital charges for investments in securities issued by Registry projects, reflecting the favorable default and recovery characteristics.
- In their development of Insurance Capital Standards (ICS), the International Association of Insurance Supervisors (IAIS) should likewise ensure that infrastructure investments are assigned appropriate capital charges.
- IAIS should reconsider elements of the proposed ICS which discourage the sale of long-term insurance products, which dampens demand for infrastructure investments.

Full participation of insurers as investors in infrastructure assets is necessary to maintain America's economic competitiveness and improve the quality of life of its citizens. Insurers are uniquely positioned by the nature of their business to invest in and mitigate risks in infrastructure projects ranging from deep-water seaports to state-of-the-art transit systems. As regulated entities, insurers respond to incentives (and disincentives) put in place by law and regulation. The recommendations here encourage insurer behaviors that support infrastructure growth while maintaining or strengthening their capacity to fulfill policyholder obligations.

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About the author: After more than 25 years as an insurance industry analyst with Chase Econometrics, Insurance Solvency International, and S&P Global Ratings, Steven Dreyer oversaw S&P Global's ratings on utilities, midstream energy, and project finance from 2006 to 2015. He led S&P's investor communications function for the Americas until 2017, and in 2018 was Director of the Federal Insurance Office in the U.S. Treasury. He currently consults on strategic insurance issues, enterprise risk management (ERM), credit research, environmental/social/governance (ESG) risks, and infrastructure investment. Dreyer resides in Alexandria, Virginia.

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