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Can Insurance Company Investments Help Fill the Infrastructure Gap?

September 27, 2021

NAIC
NATIONAL ASSOCIATION OF
INSURANCE COMMISSIONERS

CIPR Infrastructure Research Overview and Update

Spring National Meeting - April 5, 2022
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Eric Kolchinsky

NAIC NATIONAL ASSOCIATION OF
INSURANCE COMMISSIONERS



What Do We Mean By “Infrastructure?”

Definition | Economic Infrastructure: Large, long-lived, capital-intensive physical assets that provide essential services or facilities to a region, state, county, or municipality and contribute to its economic development and prosperity (excluded are emerging and social infrastructure).





Impetus for Our Work on Infrastructure

- Insurance companies have approached the NAIC in the past to voice interest in additional infrastructure investment.
- **There is limited analysis of infrastructure investment specific to the insurance industry.**
- At the same time, the United States has long-suffered an infrastructure gap; that is, infrastructure is insufficient to meet the nation's needs.
- **We sought to address two related questions.**
 - **Is infrastructure a good investment for insurers?**
 - **If it is, can additional insurance industry investments in infrastructure help to fill the U.S. infrastructure gap?**



Summary | Main Findings of the Report

- The United States has a **substantial infrastructure gap**: over the next 10 years, infrastructure spending needs exceed dedicated funding by \$2.1 trillion.
- Using NAIC data, we estimate current **U.S. insurance industry exposure** to economic infrastructure investments to be roughly **\$566 billion**, most of which is investment in the energy sector.
- Although the insurance industry already has a sizeable stake in infrastructure-backed financial assets, our analysis suggests that it **is well-positioned to contribute more to the rebuilding and enhancement of U.S. infrastructure** through its financial investments.
- Regulatory factors (e.g., capital charges) may be significant factors in insurance industry interest in greater infrastructure investment.



CIPR Infrastructure Research Overview and Update

- The Infrastructure Gap
- Current Insurance Industry Exposure to Infrastructure
- Infrastructure Investment Performance
- Regulatory Considerations
- Future Directions

The Infrastructure Gap

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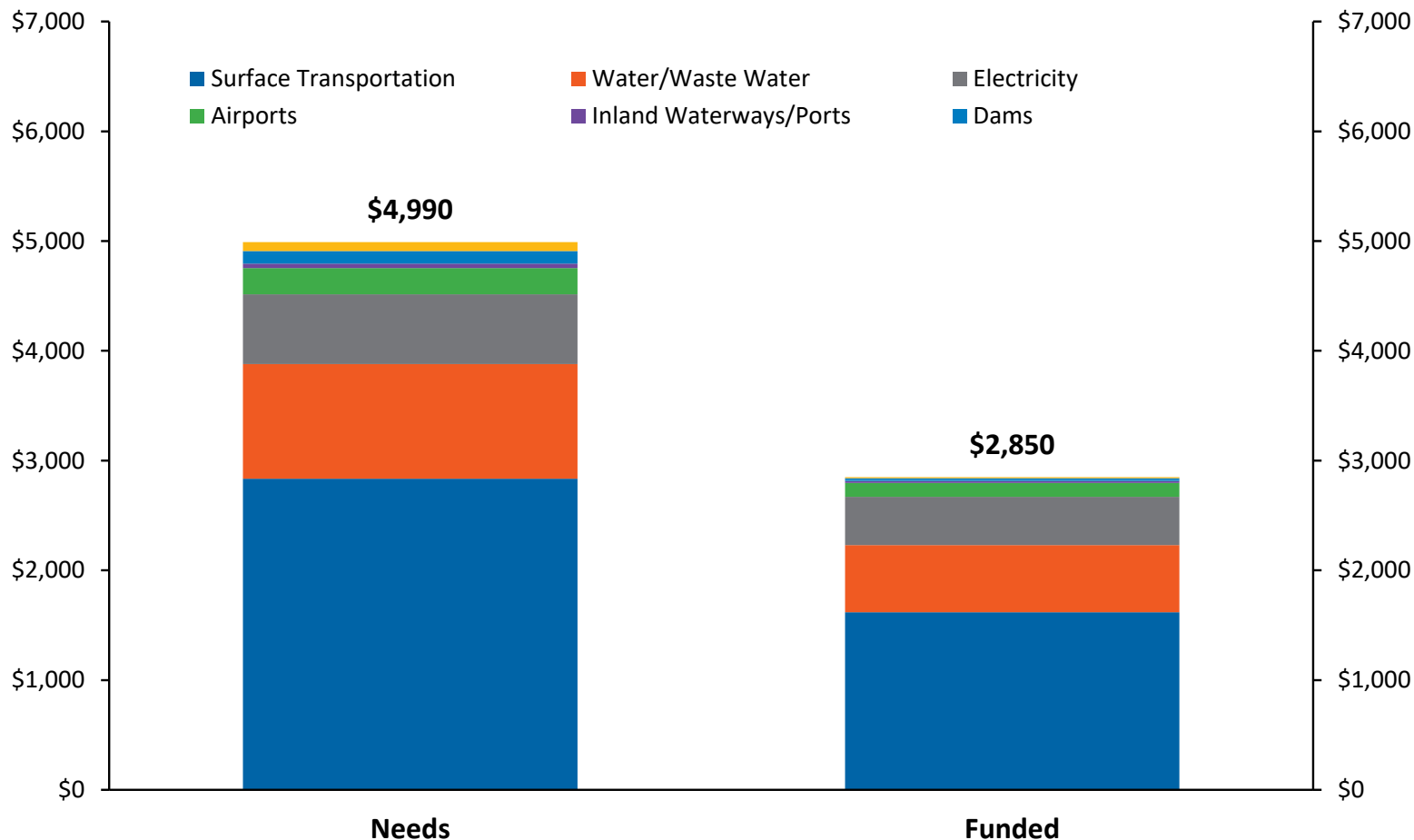
Not Making the Grade | The United States earned an overall grade of C - on the American Society of Civil Engineers 2021 Infrastructure Report Card

Sector	Δ	Grade	Sector	Δ	Grade
Aviation	↑	D+	Ports	↑	B-
Bridges	↓	C	Rail		B
Dams		D	Roads		D
Drinking Water	↑	C -	Solid Waste		C+
Energy	↑	C -	Storm Water		D
Hazardous Waste		D+	Transit		D -
Inland Waterways	↑	D+	Wastewater		D+
Levees		D	OVERALL		C -

American Society of Civil Engineers (2021)



Investment Gap | The U.S. Economic Infrastructure Gap Is a Projected at \$2.1 Trillion from 2020 through 2029



Estimates suggest that if underinvestment continues, inadequate infrastructure will cost the average American \$3,300 per year by 2039.

Additional costs include \$10 trillion in forgone GDP and 3 million forgone jobs.

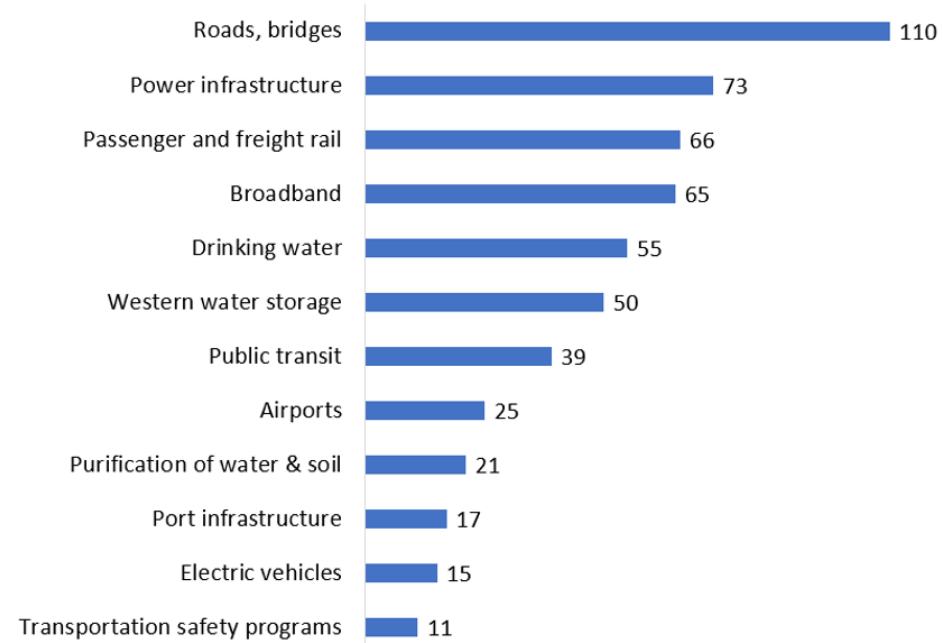
ASCE (2021)



The Infrastructure Investment and Jobs Act

- **Key Aspects:**
 - \$1.2 trillion (\$550 billion in new economic infrastructure spending)
 - The federal effort to expand infrastructure is in progress, but it is insufficient to close the gap » **more private investment is needed.**
- **Can insurance companies contribute?**

Infrastructure Investment and Jobs Act (\$ Billion)



Farcaster, [Infrastructure and Jobs Act Summary](#) (Wikimedia Commons media repository)

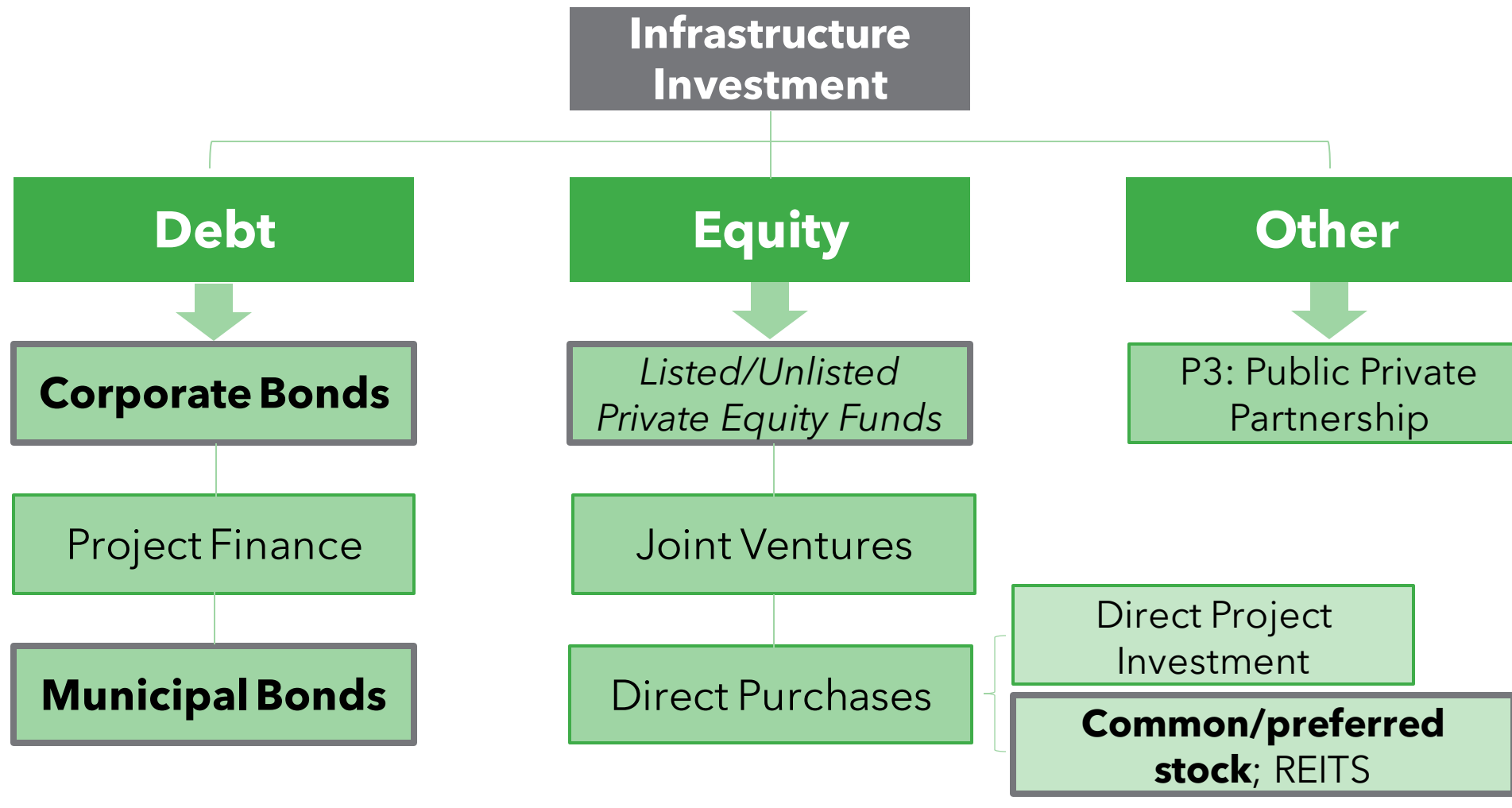


Current Insurance Industry Exposure to Infrastructure Investments

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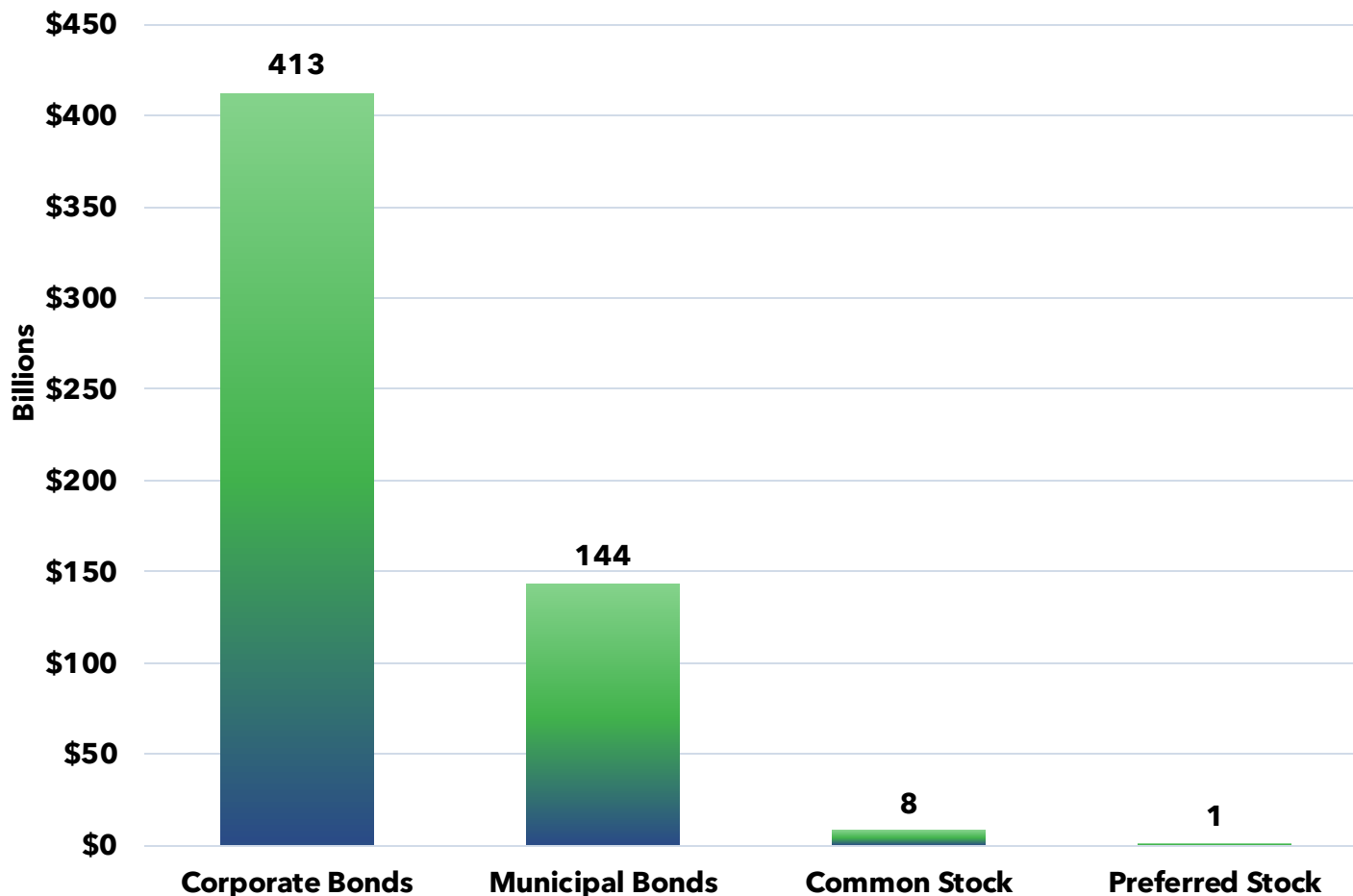


Investment Characteristics | Asset Types





2019 Reported Holdings | As of Dec. 31, 2019, U.S. insurers held approximately \$566 billion in infrastructure financing



Methodology:

1. Used NAICS code to identify infrastructure sectors by the CIPR definition. Scrutinized municipal bond categories to identify infrastructure exposure
2. Obtained BACV from Schedule D for identified categories

Does not include:

- US Treasuries or Agency securities
- Social Infrastructure
- Private equity investments, loans, and mortgages



2019 Reported Holdings | Infrastructure Corporate Bonds (BACV) by Sectors (\$412.88 Billion)

**Electric Power
Generation, Transmission
and Distribution: \$251B**

Highway, Street, Bridge, Other heavy and Civil Engineering Construction: \$3B
Water, Sewage, Other Systems and Related Structures Constructions: \$17B
Petroleum Refineries, Other Petroleum and Coal Products Manufacturing: \$26B

Natural Gas Distribution: \$37B
**Pipeline Transportation, Oil and Gas Pipeline
and Related Structures Construction: \$79B**

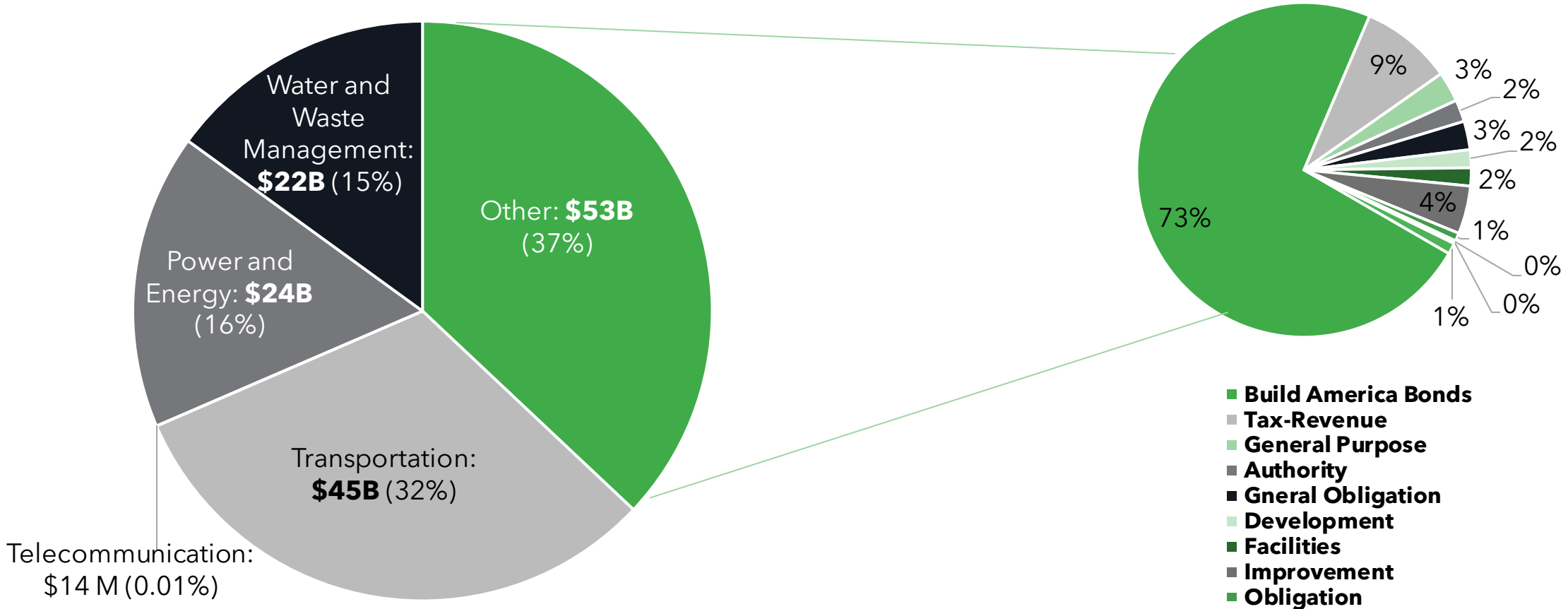


Power and Energy (95%)

**NAIC/CIPR
Infrastructure Sectors:**



2019 Reported Holdings | Infrastructure **Municipal Bonds** (BACV) by Sectors (\$144 Billion)





2019 Reported Holdings | Key Takeaways

Corporate Bonds, Common Stock, and Preferred Stock

Infrastructure Investment is **heavily concentrated in Power and Energy:**

Corporate Bonds - **95%**
Common Stock [\$8.2B] - **90%**
Preferred Stock [\$1.3B] - **99%**

Municipal Bonds

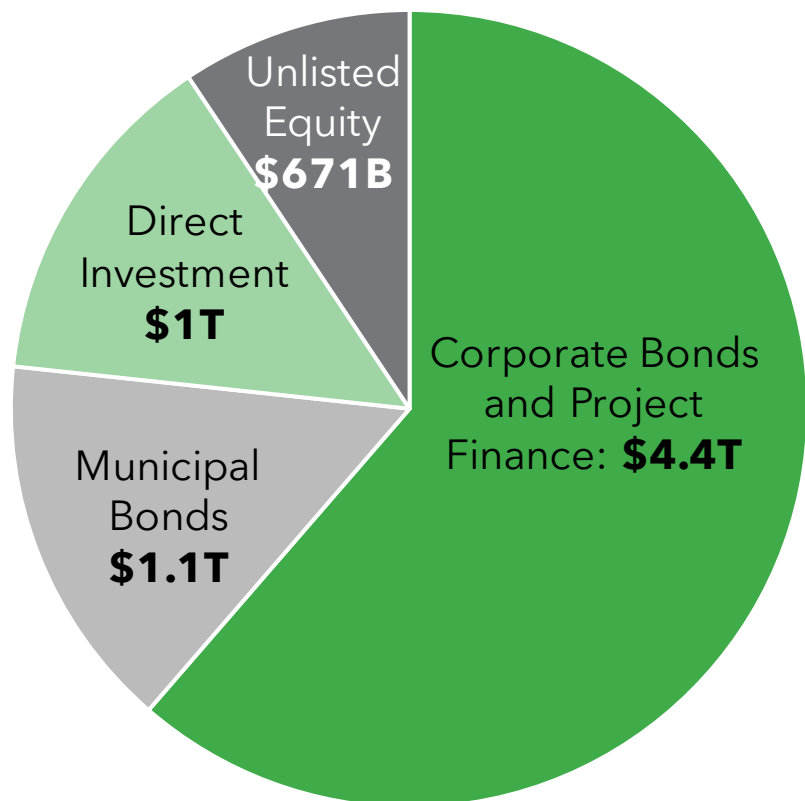
Largest sector is **Transportation (32%)**

Second largest sector is **Build American Bonds** dedicated to infrastructure (**27%**)

Third largest sector is **Power and Energy (16%)**



Market Size | The worldwide market for infrastructure investments is substantial at over \$7 trillion, yielding myriad opportunities



- Corporate Infrastructure Bond and Project Finance**
Moody's rated about \$2.2 trillion of corporate infrastructure bond and project finance (2019)
- Municipal Bonds**
Economic infrastructure accounted for about 27% of \$4.1 in trillion municipal bonds (2009 - 2018)
- Direct Investment in Infrastructure Projects**
Global insurance companies directly invest over \$1 trillion (2017)
- Equity (Unlisted Funds)**
Unlisted infrastructure global AUM of \$671 billion with "dry powder" of \$243 billion (2020)

Sources: Moody's infrastructure report (2020); S&P's infrastructure report (2019); MSRB "Municipal Securities: Financing the Nation's Infrastructure (2019)"; The U.S. Chamber of Commerce's RFI responses; Prequin Infrastructure Report (2020).

Financial Performance of Infrastructure-Backed Financial Securities

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Attractive Features | Insurance companies are increasingly seeing infrastructure as a viable and attractive investment opportunity

Long Timeline

Useful life commonly 15 years or longer, allowing for better duration matching with long-term liabilities

Portfolio Diversification

Real assets offer distinctive features compared with traditional and other alternative asset classes

Inflation Hedging

Infrastructure generally maintains or increases its real value during periods of high inflation

Low Risk

Predictable and stable cash flows
Low sensitivity to swings in the business cycle

Competitive Returns

As a class, offers comparatively higher rates of return, particularly in a low-interest rate environment

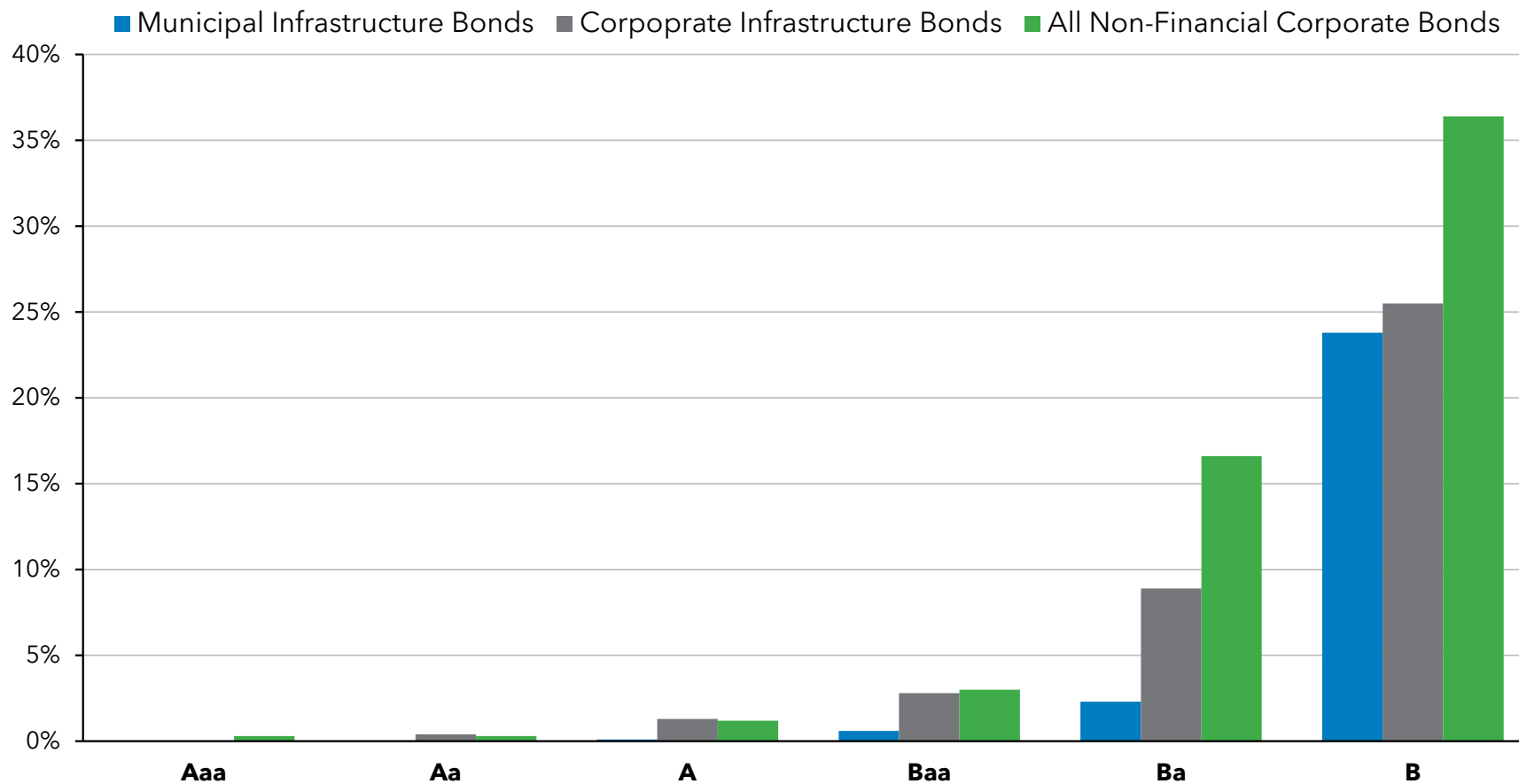
But have infrastructure investments lived up to this promise?



Credit Performance | Infrastructure-Backed Bonds Have Better Credit Performance compared with all non-financial corporate debt

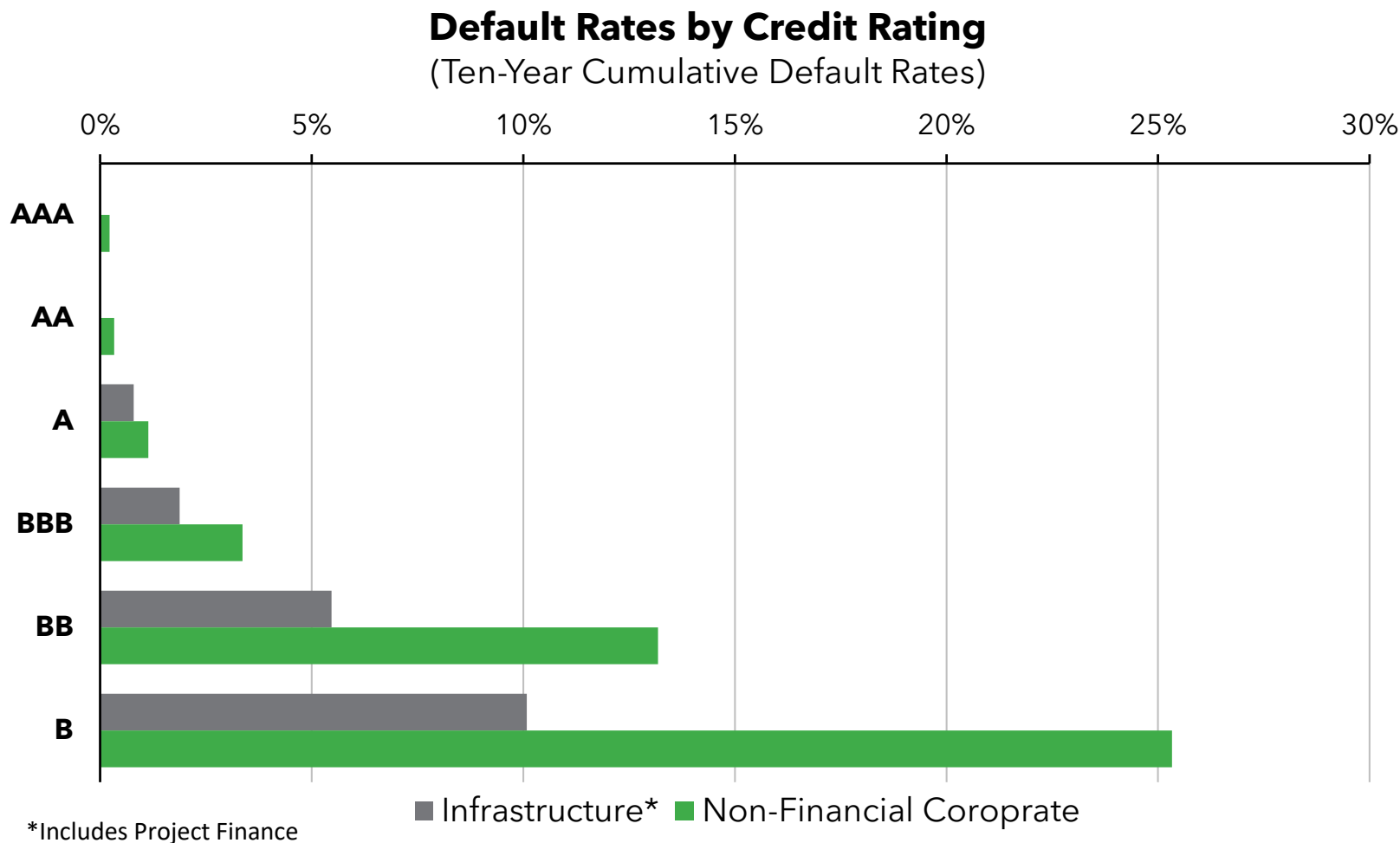
Default Rates by Bond Rating

(Ten-Year Cumulative Default Rates)





Credit Performance | Infrastructure-Backed Bonds Have Better Credit Performance compared with all non-financial corporate debt





Credit Performance | Analysis of Moody's and S&P Data

Key findings of the Moody's and S&P reports are consistent

- Lower default rates for infrastructure-backed debt
- Higher recovery rates upon default for infrastructure-backed debt
- More stable ratings than for all non-financial corporate debt with equivalent ratings

Additional Findings

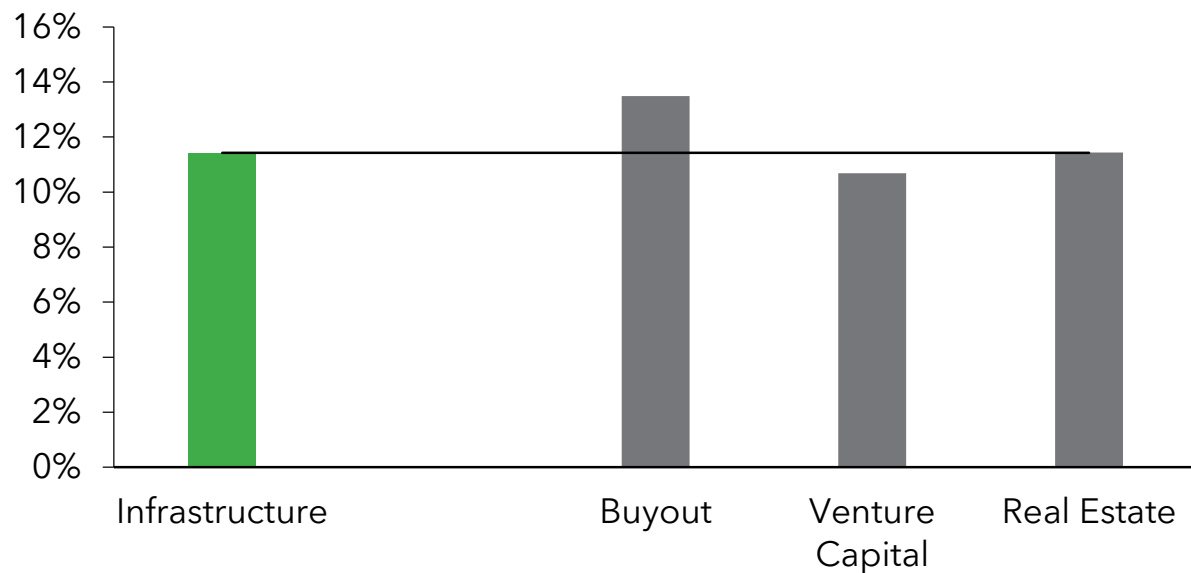
- Moody's evaluated 1,300 municipal bonds and finds that these securities have lower default rates than corporate and project finance securities



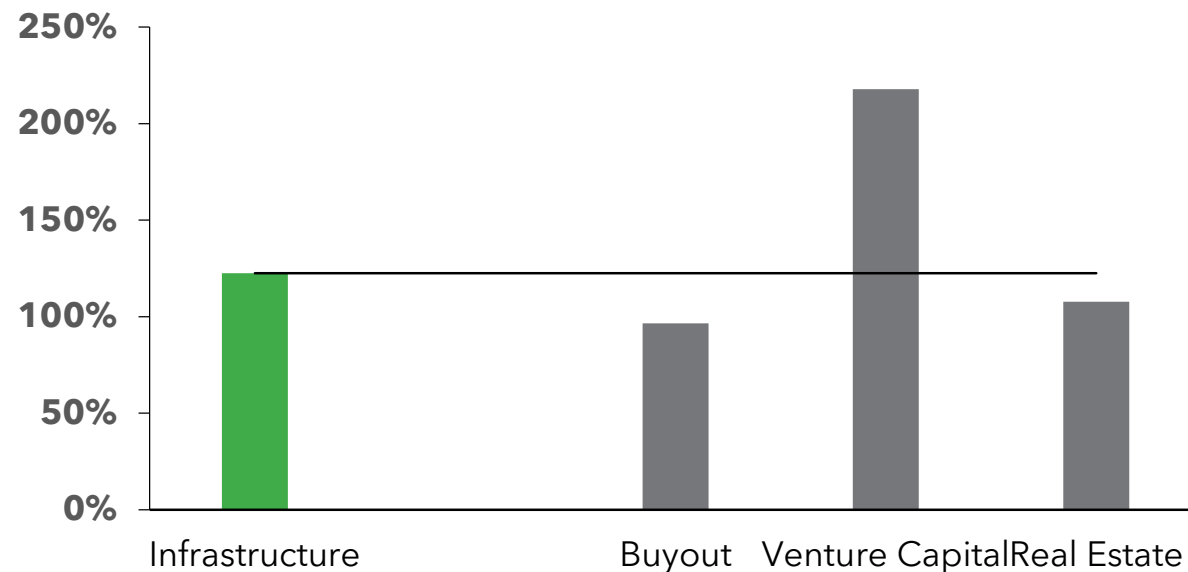
Private Equity Performance | The return for PE infrastructure investments is largely on par with other PE investments, but the risk-return profile is comparatively unfavorable.

Average return for PE infrastructure funds is roughly on par with other PE sectors.

Mean IRR
(2010 - 2019)



Coefficient of Variation (std. dev./return)
(2010 - 2019)



For PE infrastructure investments, the cost in risk per dollar of return is comparatively high.

Data Source: Preqin

Regulatory Issues

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Risk-Based Capital and Capital Charges

- While infrastructure investments have attractive investment characteristics, other important investment considerations, such as return on capital, might not be as appealing given current capital requirements.
- Under the current framework, RBC factors for infrastructure bonds are the same as those for similarly rated corporate bonds and municipal bonds. The same is largely true for other infrastructure investments.



Example | NAIC Evaluation of Project Finance Investment

- The NAIC's Securities Valuation Office (SVO) designates a project-financed transaction based on (1) the project's risk assessment and (2) the project's actual or expected financial performance (debt service coverage ratio [DSCR] or NPV/Debt).
- To assess a project's risk, the SVO:
 - evaluates the project's cash flows to determine their composition and predictability;
 - analyzes the project's competitive position within the market of operation and any off-take agreements in place;
 - assesses the project's technology and operating risks; and
 - considers the project's financial profile through a review of its key financial metrics (DSCR or NPV/Debt), its liquidity and reserve accounts, and the overall transaction structure, including refinancing risk and structural subordination.
- The SVO then considers the impact of the technology employed and the reliability of the resource used

Extensions and Next Steps

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Extension | Infrastructure Private Equity Funds: Performance Persistence and Variance in Performance by Investor Type

Hanchun Zhang, Kelly D. Edmiston and Jeffrey R. Czajkowski

- While infrastructure debt and equity outperform non-financial corporate securities overall, **private equity (PE) infrastructure fund performance is below par when compared with other PE investments.**
- PE investment in infrastructure is a relatively recent phenomenon, and quality data are sparse.
- Using a unique dataset from Preqin, we seek to
 - **explain the relative underperformance of PE infrastructure funds** and
 - explain evidence that **insurance company investments in PE infrastructure funds underperform** those of other private institutional investors.



Next Steps | Climate Risk

- Considerable investments in the power and energy sector present significant transitional risks and some physical risks associated with climate change.
- The NAIC recently participated in the 2021 Global Insurance Market Report - The Impact of the Climate Change on the Financial Stability of the Insurance Sector. Methodological learnings from this transition risk assessment could be applied toward U.S. insurance infrastructure investments specifically



Next Steps | Social Infrastructure

- Insurance companies and other institutional investors also make substantial investments in social infrastructure (which was excluded from our economic infrastructure definition).
- Social infrastructure typically consists of assets that are intended to accommodate social services and civic life, such as hospitals, schools, and recreational facilities.
- *Can insurance industry investments aid in the dearth of funding for community development investments, such as affordable housing and community facilities?*
- The suitability of these investments for insurance companies, and the impact insurance industry investments could have on social and community infrastructure is unclear.



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