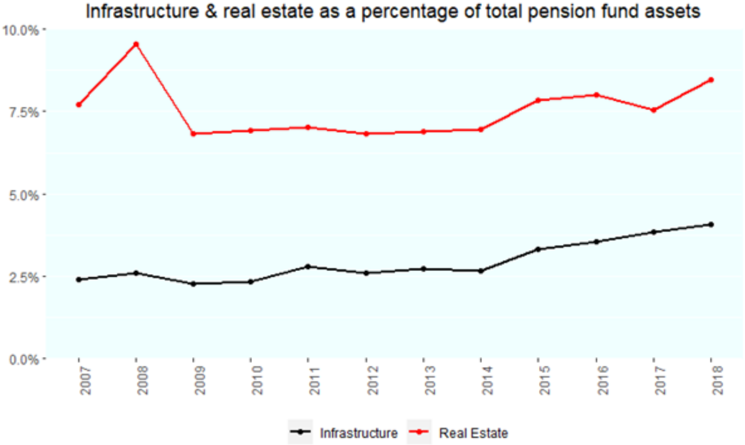
Private asset boom

Infrastructure is today, where real estate was 30 years ago



Institutional Infrastructure Investments

IPE Real Assets & Infrastructure Global Investors Conference

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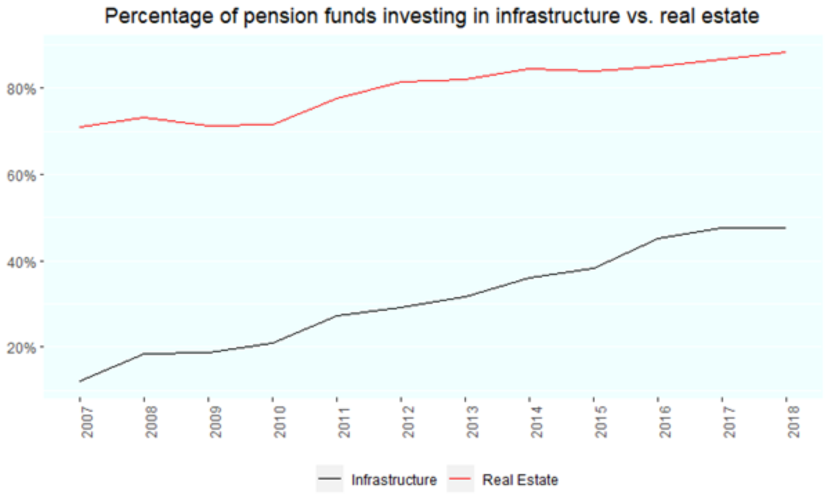
The CEM Database

782 pension funds over a 12 year period (2007-2018)

	# Funds	# Observations	Average Size Pension Fund (US$ Billion)	Infrastructure Average Holdings (US$ Billion)
U.S.	382	2304	17.56	0.26
Canada	152	1052	11.69	1.03
Europe	219	965	28.18	0.48
Rest of World	29	142	67.40	1.96
Total	782	4463	29.38	0.77

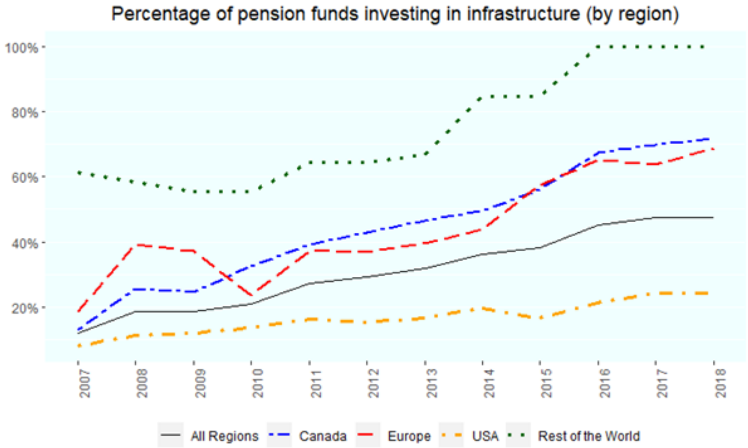
An increasing number of pension funds are investing in infrastructure

From 12% in 2007 to 47.5% of funds in 2018



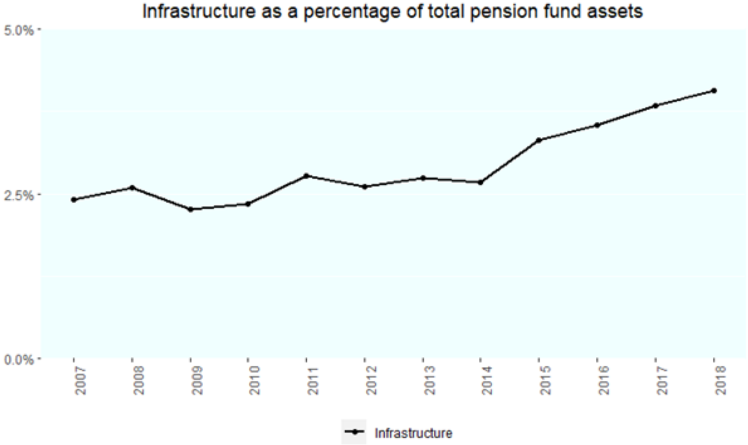
Canadian and European pension funds are more likely to invest

U.S. pension funds are lagging behind peers



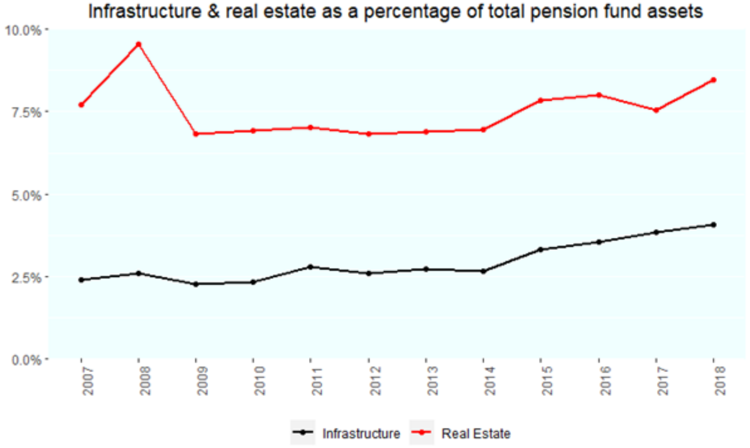
Within these pension funds, the allocation almost doubled

Allocation increased from 2.4% in 2007 to 4.1% in 2018

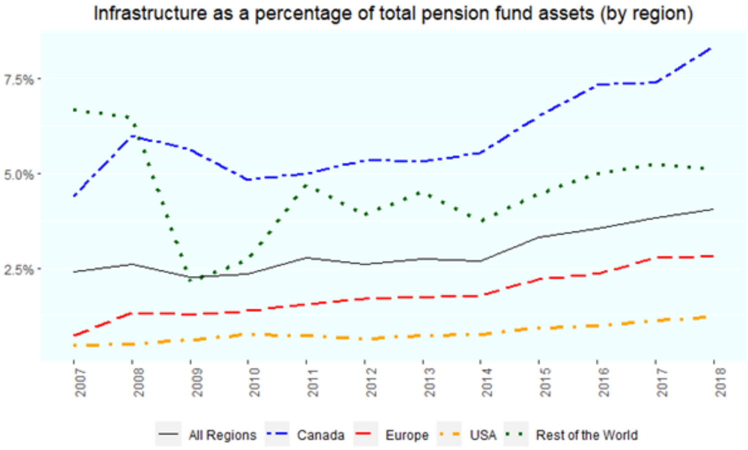


...but infrastructure allocation is still only half of real estate allocation

Real estate took a big hit in the GFC

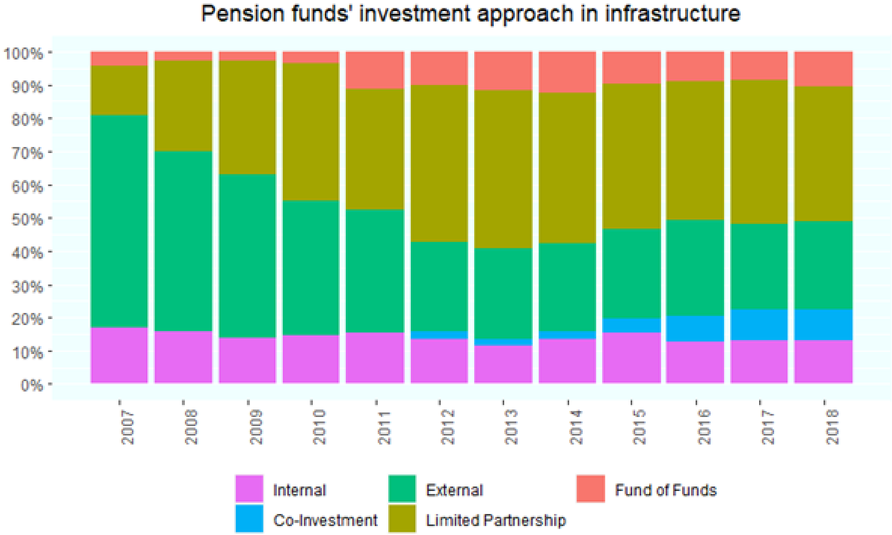


Canadian and European pension fund allocations to infra are growing the most



The investment approach has changed over the past years

Co-investment and limited partnerships have gained importance

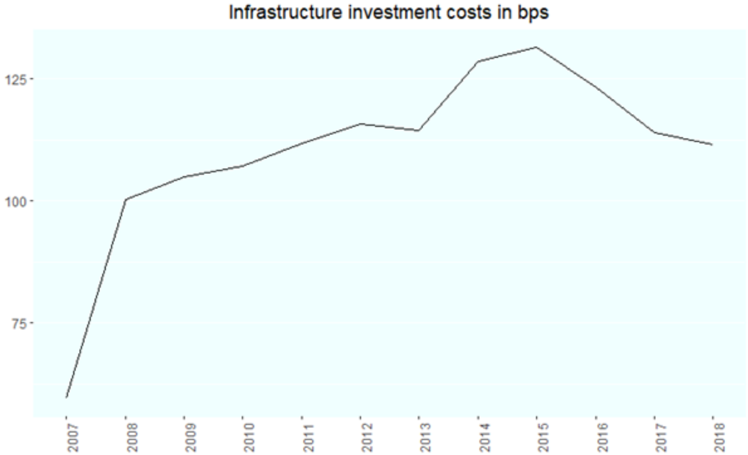


Larger pension funds are more likely invest in infrastructure

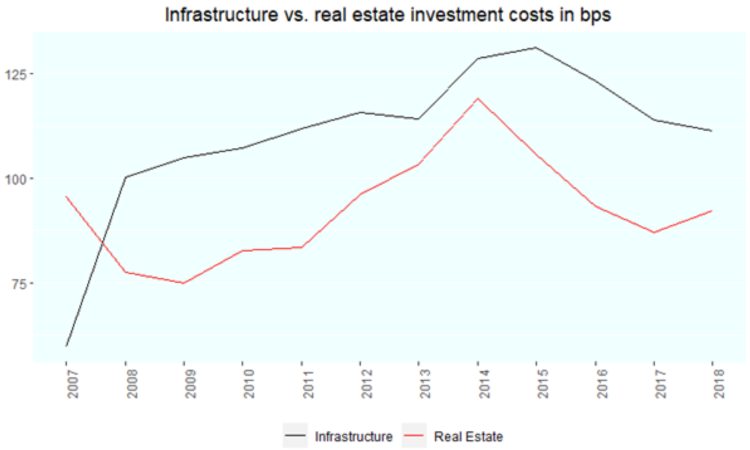
Results of logit regression (2007-2018)

1. A doubling of the pension fund size, increases the likelihood of funds investing in infrastructure by approximately 16 %
2. Canadian and European funds are significantly more likely to invest in infrastructure compared to their U.S. counterparts.
3. Small uses more investment layers, Canadians don't.
4. A doubling of the pension fund size, increases the likelihood of funds investing internally by approximately 65% and decreased the likelihood of going through fund-of-funds by 43%

The costs of infrastructure investment have come down

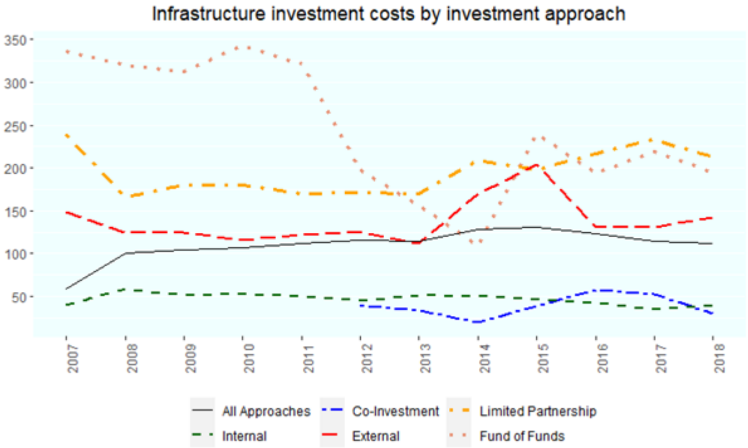


....but infrastructure investment costs exceed real estate by 20 bps



Intermediation is costly

Fund-of-funds of is the most expensive investment approach at 220bps



Pension funds realize scale advantages, as reflected in their investment costs

Formal analysis determinants of infrastructure investment costs

1. A doubling of the mandate size results in a 4bps reduction in costs.
2. Delegating asset management using a limited partnership increases the investment costs by 162bps compared to the cost levels in a situation where a pension fund manages its investments internally.
3. Not surprisingly, a pension fund that chooses funds-of-funds, the most layered investment approach, faces the highest cost levels: 222bps higher as compared to internal investment.
4. Costs in the U.S. are the highest.

What does that yield? Infrastructure net returns

Infrastructure has been the best-performing asset class

Time Period		Asset Class						
		All Assets	Stocks	Bonds	Infrastructure	Real Estate	Private Equity	Hedge Funds
Full Sample	Return	7.0	8.1	5.0	10.1	7.7	12.6	4.2
	σ	13.7	17.8	7.8	8.4	11.5	10.1	8.8
2007-2012	Return	6.7	6.2	8.0	6.3	4.1	9.7	4.1
	σ	17.0	22.2	7.9	7.9	16.9	13.4	11.3
2013-2018	Return	7.2	9.5	3.0	11.5	9.8	14.4	4.2
	σ	11.1	13.7	7.1	8.3	5.6	6.7	7.2

More external investment approach delivers somewhat lower returns

Fees bite into performance, but not as bad as for real estate (Carlo et al., 2021)

Time Period		Approach				
		Internal	Co-investment	External	Limited partnership	FoF
Full Sample	Return	11.1	13.3	9.3	9.1	8.9
	σ	7.4	6.0	9.5	9.3	7.8
2007-2012	Return	7.4	8.7	5.8	4.9	5.4
	σ	6.0	2.2	9.3	9.3	9.4
2013-2018	Return	12.5	13.3	10.9	10.4	9.8
	σ	7.5	6.1	9.2	8.9	7.3

Implications

Returns seem to justify investment, approach seems to matter less than in real estate

1. Infrastructure has become a more popular part of allocation about 50% of global pension funds (88 % for real estate)
2. At 4.1% allocations are still relatively low, especially in the U.S., and as compared to real estate (8.7%).
3. Infrastructure allocations seem to be justified from a risk/return point of view.
4. Intermediation does not strongly affect performance, as compared to internally managing infrastructure.
5. As so often, size matters, both in lowering cost and increasing net returns.
6. Finally, listed infrastructure companies (similar to REITs) need exploration as a viable alternative to private infrastructure investments.

Contact information

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