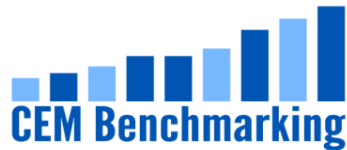


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Performance of 'Canadian Model' Funds

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Overtouting The Canadian Pension Model?

Chris Taylor of Fortune reports, [These Canadians Own Your Town](#):



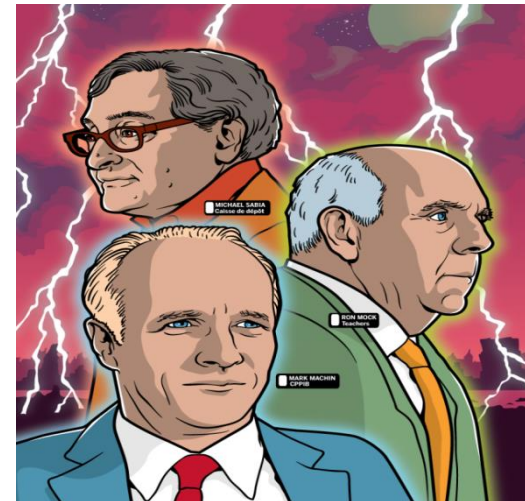
Inside the risky strategy that made Canada's biggest pension plans the new 'masters of the universe'

Financial Post

They are among the world's most famous landlords with stakes in major airports in Europe, luxury retailers in New York and transportation hubs in South America. They rank as five of the top 30 global real estate investors, seven of the world's biggest international infrastructure investors, and were at the table during six of the top 100 leveraged buyouts in corporate history. And they are Canadian.

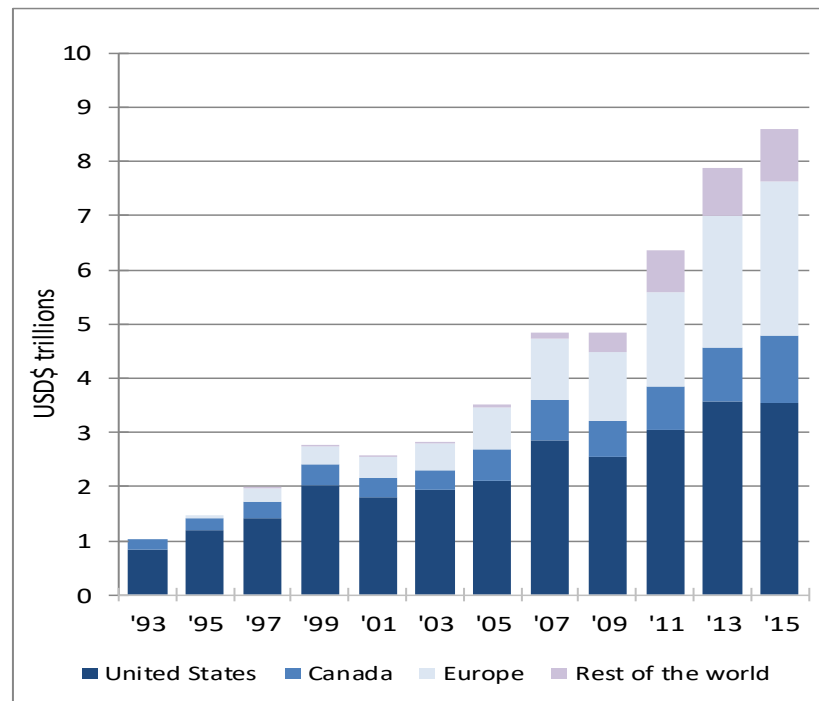
Canadian pension plans provide a good model Financial Times

Across the UK, Europe and Australia, large Canadian pension plans are making headlines as they continue to snap up infrastructure assets – from the Bullring shopping centre in Birmingham and the European airports division of Germany's largest construction company, to various Australian real estate assets. While perhaps overlooked in the past, the Canadian pension sector is garnering significant recognition and respect globally. The shift is partly due to the country's solid economy and stable performance throughout the financial crisis, which continues today.



Investment data and conclusions are drawn from the CEM Global Investment Benchmarking Database.

- Over 320 global pension funds with aggregate assets approaching \$USD 8.6 trillion participate.
- The database includes the following metrics:
 - Holdings
 - Policy/Reference Portfolio Weights
 - Fund & Asset Class Returns
 - Asset Class Benchmarks & Returns
 - Costs
- Benchmarking focus is:
 - What you paid
 - What you got
 - What you risked



Key performance factors examined in this presentation:

- Fund size
- Asset mix
- Implementation style
- Total fund & asset class performance for 10 years ending Dec. 31, 2015

Key performance factors not examined in this presentation:

- Governance structure and quality
- Investment processes and risk management
- Organizational structure, talent, culture, and compensation
- Use of leverage

Selected statistics for comparison groups:

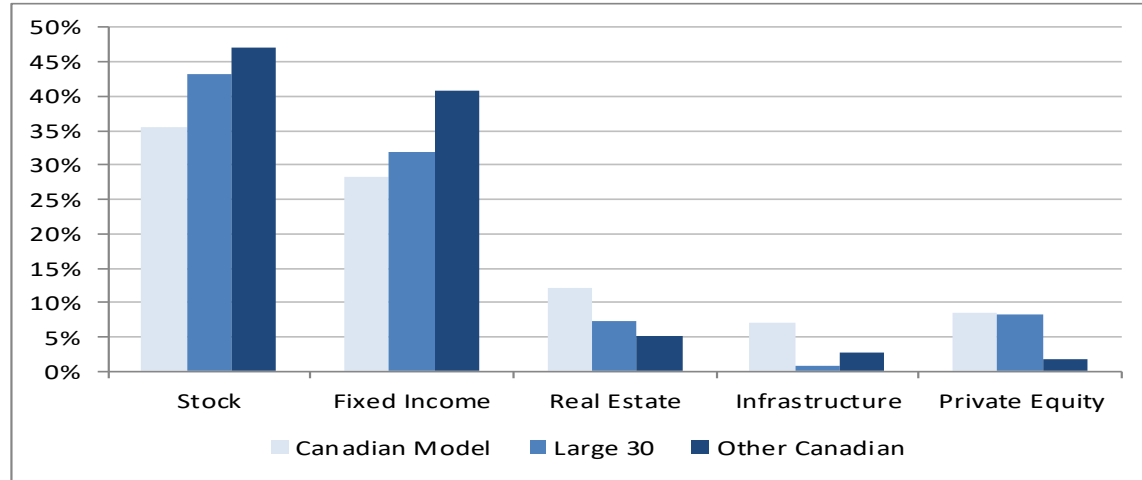
Canadian model funds, 2015 statistics			
	Assets (\$ millions)	Internally-managed assets as a % of total assets	Internally-managed private ¹ assets as a % of total assets
1st quartile	69,788	77.1%	13.8%
Median	85,215	79.7%	16.4%
3rd quartile	149,985	91.0%	20.3%
Average	114,513	81.2%	16.2%
Count	8	8	8

Largest 30 funds, excluding the Canadian model funds, 2015 statistics			
	Assets (\$ millions)	Internally-managed assets as a % of total assets	Internally-managed private ¹ assets as a % of total assets
1st quartile	64,663	25.3%	0.0%
Median	84,568	41.1%	0.0%
3rd quartile	176,405	66.1%	2.4%
Average	159,168	44.6%	1.7%
Count	30	30	30

All Canadian funds, excluding Canadian model funds, 2015 statistics			
	Assets (\$ millions)	Internally-managed assets as a % of total assets	Internally-managed private ¹ assets as a % of total assets
1st quartile	835	0.0%	0.0%
Median	1,712	0.4%	0.0%
3rd quartile	5,003	14.8%	0.1%
Average	4,135	14.0%	1.0%
Count	72	72	72

1. Private assets include real estate, infrastructure and private equity.

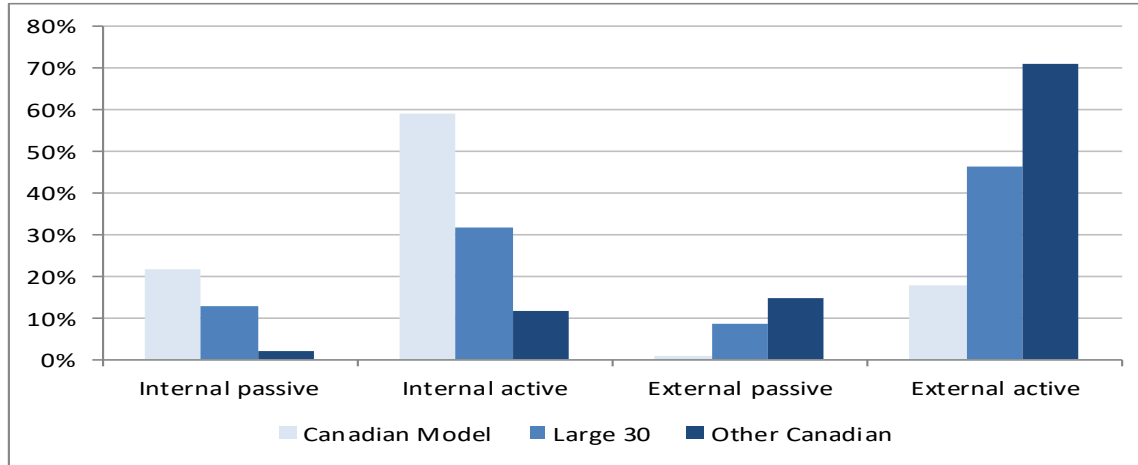
Canadian model funds have higher policy weights in private market asset classes.



Comparison of average 2015 policy weights by asset class

	Canadian Model	Large 30	Other Canadian
Stock	35.6%	43.3%	47.0%
Fixed Income	28.3%	32.0%	40.7%
Real Estate	12.1%	7.3%	5.2%
Infrastructure	7.2%	1.0%	2.8%
Private Equity	8.7%	8.4%	1.9%

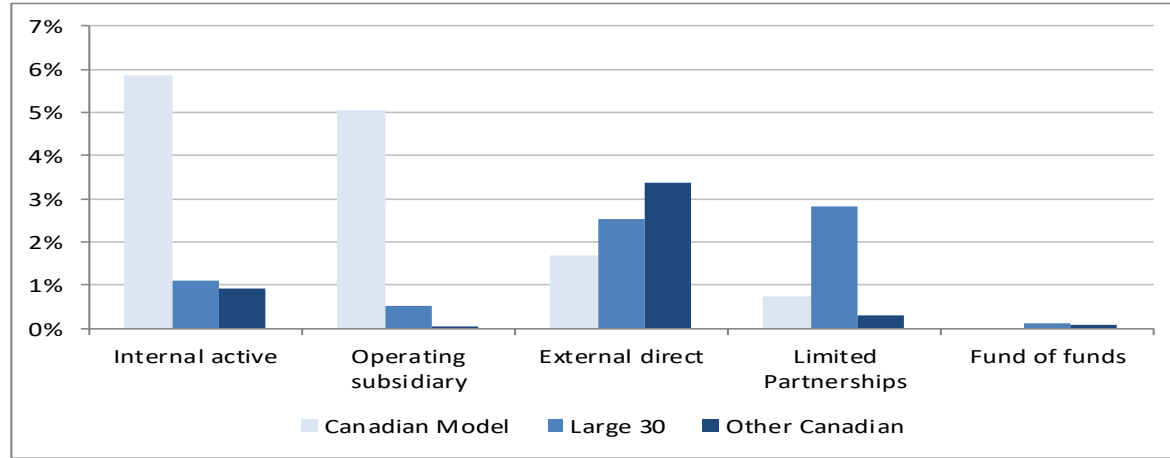
Canadian model funds manage more assets internally.



Comparison of average 2015 implementation style

	Canadian Model	Large 30	Other Canadian
Internal passive	21.9%	12.7%	2.1%
Internal active	59.3%	31.9%	11.9%
External passive	0.9%	8.8%	14.8%
External active	18.0%	46.6%	71.2%

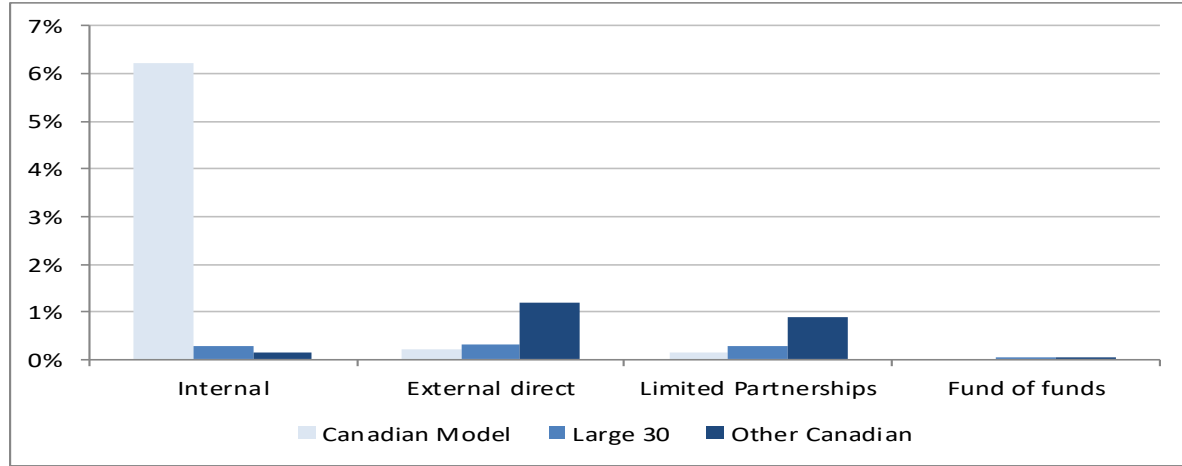
Canadian model funds manage more of their real estate internally (including operating subsidiaries).



Real Estate, comparison of average 2015 implementation style

	Canadian Model	Large 30	Other Canadian
Internal active	5.9%	1.1%	0.9%
Operating subsidiary	5.0%	0.5%	0.0%
External direct	1.7%	2.5%	3.4%
Limited Partnerships	0.7%	2.8%	0.3%
Fund of funds	0.0%	0.1%	0.1%

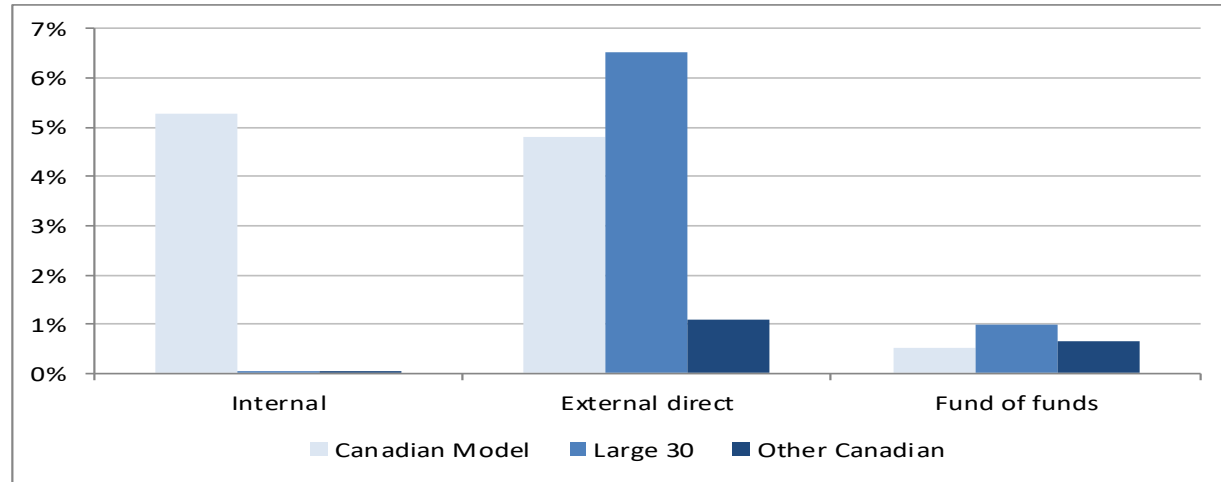
Canadian model funds manage more of their infrastructure internally.



Infrastructure, comparison of average 2015 implementation style

	Canadian Model	Large 30	Other Canadian
Internal	6.2%	0.3%	0.2%
External direct	0.2%	0.3%	1.2%
Limited Partnerships	0.2%	0.3%	0.9%
Fund of funds	0.0%	0.0%	0.0%

Canadian model funds manage more of their private equity internally.



Private Equity, comparison of average 2015 implementation style

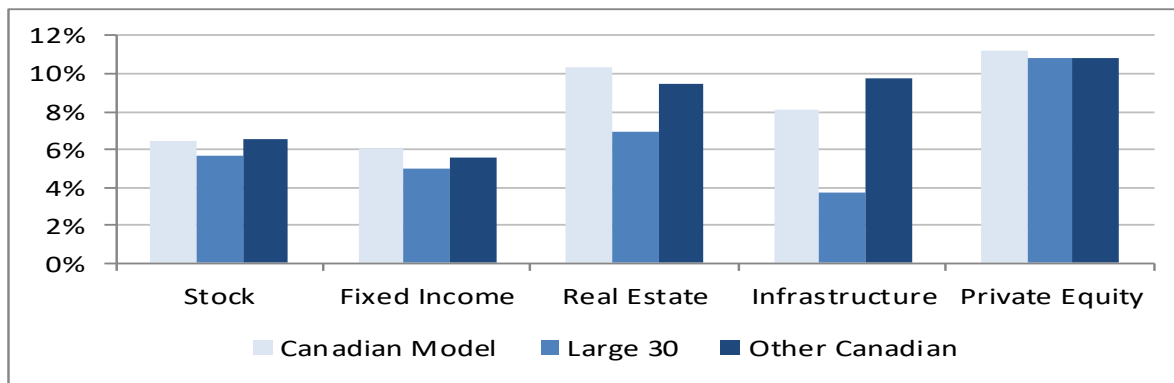
	Canadian Model	Large 30	Other Canadian
Internal	5.3%	0.1%	0.0%
External direct	4.8%	6.5%	1.1%
Fund of funds	0.5%	1.0%	0.6%

Canadian model funds have higher total net returns, policy returns, and net value added over the 10-year period ending December 31, 2015.

Comparison of 10-year performance			
	Canadian Model	Large 30	Other Canadian
Net return			
Average	7.11%	5.92%	6.35%
Standard deviation	2.84%	3.55%	2.66%
Policy return ¹			
Average	6.77%	5.80%	6.21%
Standard deviation	2.70%	3.57%	2.40%
Net value added ¹			
Average	0.33%	0.12%	0.14%
Standard deviation	2.28%	1.49%	1.60%
Sharpe ratio			
Average	0.86	0.64	0.76
Standard deviation	0.19	0.18	0.12

1. To reduce noise caused by self-selected private equity (PE) benchmarks, CEM has calculated a default PE benchmark for all database participants. This default is comprised of regionally-blended, small cap public equity indices with customized lags for each participant.

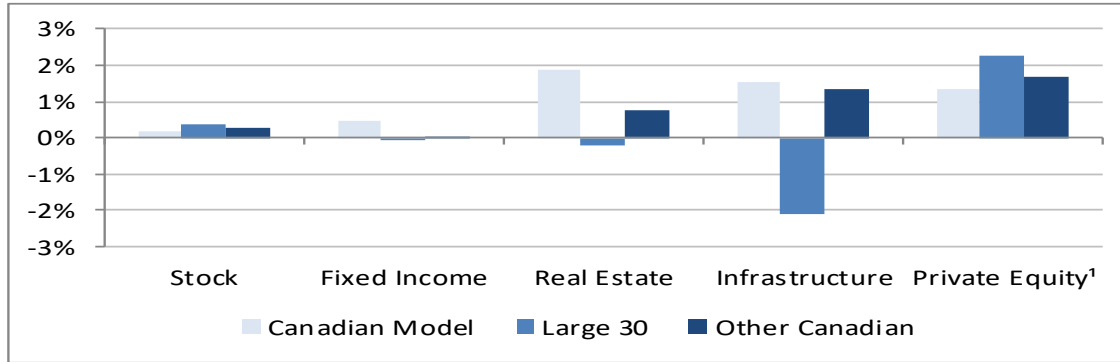
Net return comparisons by asset class:



10-year net returns

	Canadian Model	Large 30	Other Canadian
Stock	6.48%	5.72%	6.51%
Fixed Income	6.06%	4.97%	5.59%
Real Estate	10.29%	6.92%	9.50%
Infrastructure	8.11%	3.77%	9.75%
Private Equity	11.18%	10.79%	10.82%

Net value added comparisons by asset class:



10-year net value added

	Canadian Model	Large 30	Other Canadian
Stock	0.17%	0.36%	0.26%
Fixed Income	0.45%	0.00%	0.04%
Real Estate	1.90%	-0.21%	0.77%
Infrastructure	1.54%	-2.12%	1.32%
Private Equity ¹	1.35%	2.25%	1.69%

1. To reduce noise caused by self-selected private equity (PE) benchmarks, CEM has calculated a default PE benchmark for all database participants. This default is comprised of regionally-blended, small cap public equity indices with customized lags for each participant.

Internal implementation of private market asset classes is much lower cost than external implementation, as shown in the real estate example below.

Total Real Estate costs by implementation style for all funds, 2015 data

Average cost in bps
based on NAV

Internal (including operating subsidiaries)	30.0
External direct	102.8
Limited Partnerships	260.2
Fund-of-funds	301.3

Key takeaways:

- Canadian model funds have similar characteristics:
 - They are large and benefit from scale economies.
 - They have higher policy weights in private market assets.
 - They manage a higher proportion of their assets internally.
 - They manage a much higher proportion of their private assets internally.
- As a group, Canadian model funds have outperformed:
 - They have higher net total returns, policy returns and net value added.
 - Much of this outperformance is related to private market asset classes.
- CEM believes that much of this outperformance is due to cost advantages derived from more internal management.
- There is variability in the performance of Canadian model funds. Adopting a similar asset mix and implementation approach is not a guarantee of outperformance. Other factors are also important success drivers.