



Why Canada's top pension plans stand out on the global stage

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The Maple 8



≈ 1.9 Trillion

The Maple 8 are well-known for

Competitive compensation

Direct investments

Illiquid assets

Independent governance

Scale

Risk sharing

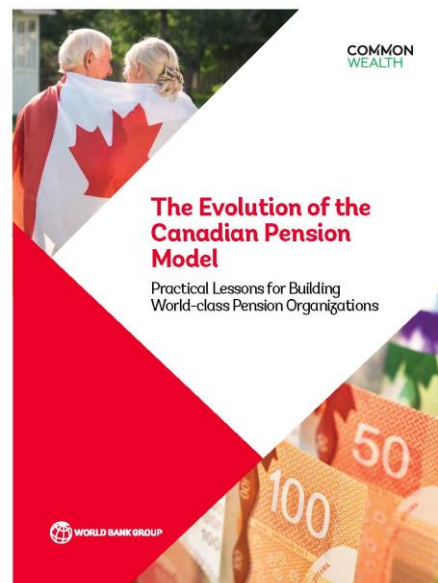
Canada's pension funds

Maple revolutionaries

Canada's public pension funds are changing the deal-making landscape



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We ask four questions:

1. How successful has the Canadian model been over the past two decades?
2. Which features of this model have contributed the most to its success?
3. Is the Canadian model restricted to a few flagship funds?
4. Can other institutional funds borrow features from this model?

To answer these questions, we use data from CEM Benchmarking and analyze performance metrics, asset allocation strategies, and cost structures for 250 pension, endowment, and sovereign wealth funds across 11 countries.

Our sample

| | Number of Funds | | Average AUM | % of public funds | % of pension plans | % of indexed liabilities | Duration of liabilities |
|---------------|-----------------|---------|-------------|-------------------|--------------------|--------------------------|-------------------------|
| | 2014-18 | 2004-18 | | | | | |
| Large | | | | | | | |
| Canada | 17 | 11 | 77,194 | 0.71 | 0.53 | 0.85 | 14.78 |
| Rest-of-World | 109 | 52 | 69,972 | 0.48 | 0.81 | 0.58 | 13.77 |
| Small | | | | | | | |
| Canada | 36 | 24 | 3,158 | 0.33 | 0.83 | 0.65 | 14.06 |
| Rest-of-World | 88 | 18 | 3,865 | 0.48 | 0.97 | 0.65 | 14.64 |

We split funds into large and small (USD 10 Bn +/- in 2018)

We analyze two time periods: 5 years and 15 years

Large CA funds are larger than their peers, mostly public funds, and less likely to manage the pension liabilities

Large CA funds have a high share of indexed liabilities and high duration

We analyze both assets and liabilities

Split assets 3 ways:

- by asset class: stocks / FI / real / hedge / PE / private credit
- active vs. passive
- internal vs. external

Model liabilities as mix of real and nominal local bonds

- match duration and proportion of indexed liabilities reported by funds

Construct portfolio that is long assets and short liabilities

- assume value of liabilities = value of assets

We consider 6 performance metrics

Metrics based on asset portfolio

1. Sharpe ratio of asset portfolio (average excess return / volatility)
2. Geometric average return of asset portfolio
3. Value-added relative to policy portfolio

Metrics based on asset – liability portfolio

4. Sharpe ratio of asset-liability portfolio
5. Geometric average return of asset-liability portfolio
6. Correlation between assets and liabilities

All metrics are based on returns that are expressed in the fund's local currency and are net of costs.

Large Canadian funds outperform their peers

| | | Assets | | | Asset - Liabilities | | |
|--------------------|------------------|--------------|----------------|-------------|---------------------|----------------|---------|
| | | Sharpe Ratio | Average Return | Value Added | Sharpe Ratio | Average Return | Correl. |
| Large Funds | 2014-2018 | | | | | | |
| | Canada | 0.93 | 0.079 | 0.006 | 0.55 | 0.040 | 0.48 |
| | Rest-of-World | 0.59 | 0.061 | 0.002 | 0.12 | 0.012 | 0.28 |
| | 2004-2018 | | | | | | |
| Canada | 0.75 | 0.075 | 0.005 | 0.34 | 0.03 | 0.46 | |
| Rest-of-World | 0.62 | 0.070 | 0.002 | 0.17 | 0.02 | 0.20 | |

Large CA funds have higher portfolio efficiency, higher average return, and higher value added.

Large CA funds also do a more efficient job at aligning the risk of their liability portfolio to their assets.

These results hold for both time periods

Small CA funds also outperform their peers

Large Canadian funds have 3 distinctive features

| | TOTAL | Internal/External | | Passive/Active | | Asset Class | | | | | |
|-----------------------|-------|-------------------|----------|----------------|--------|-------------|--------------|-------------|-------------|----------------|----------------|
| | | Internal | External | Passive | Active | Stocks | Fixed-Income | Real Assets | Hedge Funds | Private Equity | Private Credit |
| Allocation (%) | | | | | | | | | | | |
| Canada | 100 | 52 | 48 | 19 | 81 | 37 | 29 | 18 | 7 | 7 | 1 |
| Rest-of-World | 100 | 23 | 77 | 21 | 79 | 42 | 34 | 9 | 6 | 6 | 1 |
| Cost (bps) | | | | | | | | | | | |
| Canada | 57 | 18 | 121 | 6 | 75 | 100 | 100 | 100 | 100 | 100 | 100 |
| Rest-of-World | 62 | 7 | 86 | 6 | 81 | 83 | 161 | 155 | 100 | 133 | 253 |

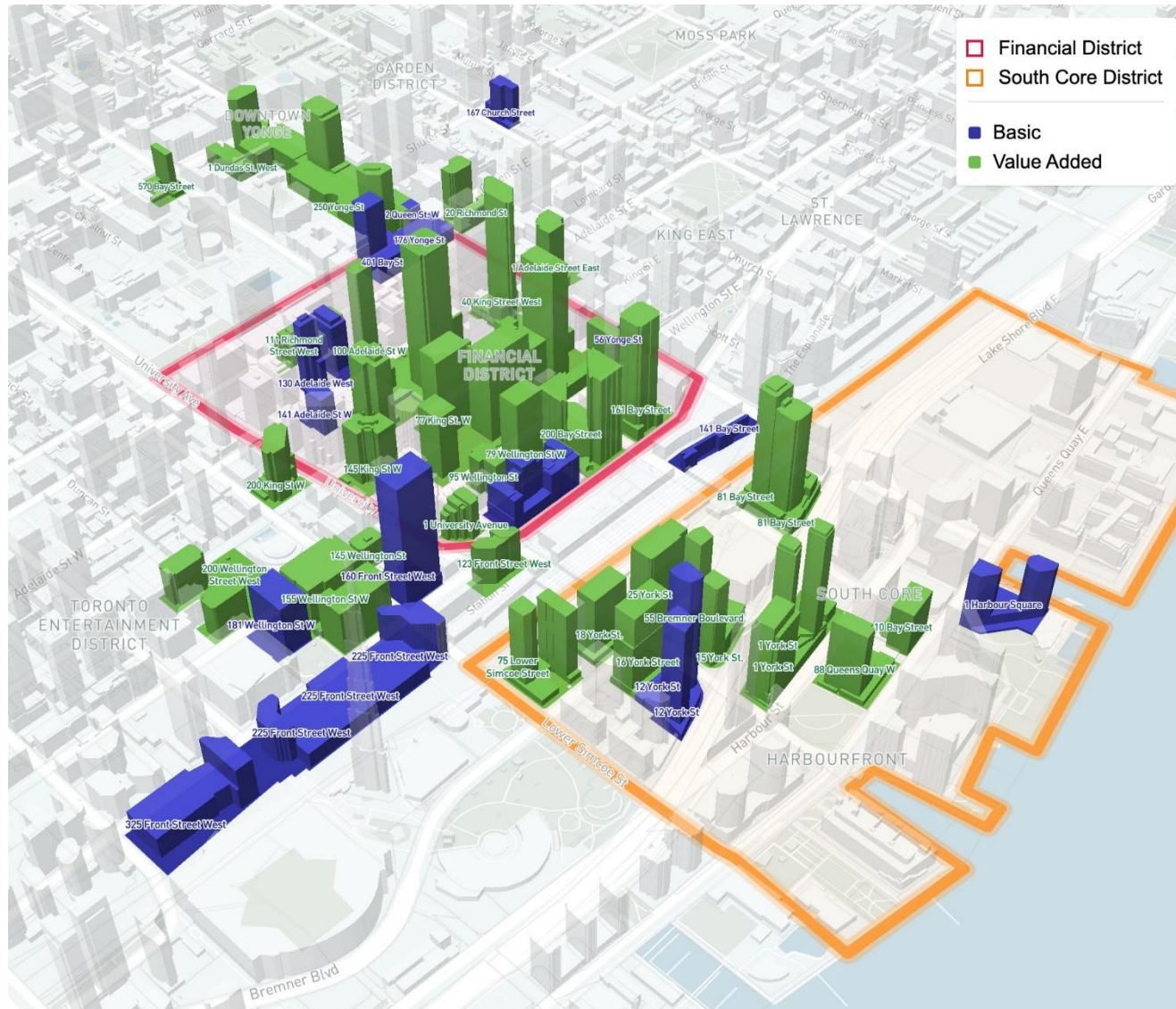
1. More in-house management → lower fees in each asset class

2. Redeployment of resources to investment teams for each asset class

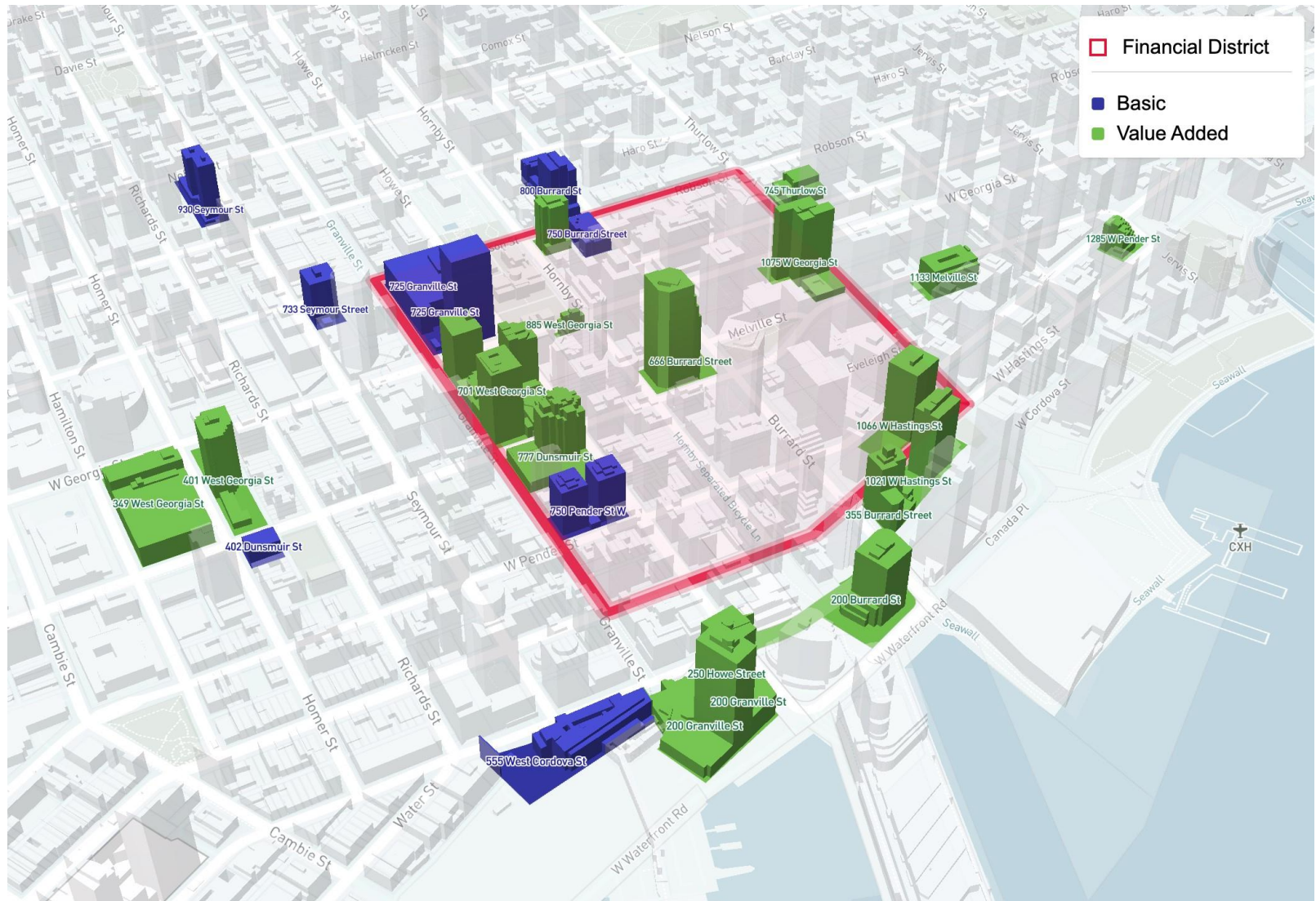
3. Allocation of capital toward assets that increase portfolio efficiency and hedge against liability risks

- More than a simple shift toward private markets
- Similar patterns within each asset class

Example of value-added strategies (Toronto)



Example of value-added strategies (Vancouver)



Scope of green urban development

Wide!

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Systematically applied across large urban centers

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Concentrated around the financial district and emerging neighborhoods

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– e.g. Ivanhoe Cambridge, Cadillac Fairview, Oxford...

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Generates net value added of 1.4% per year

Quantifying the impact of these features on costs

Cost Structure as a Proportion of Total AUM

| | TOTAL | Asset Class | | | | | |
|---|-------|-------------|--------------|-------------|-------------|----------------|----------------|
| | | Stocks | Fixed-Income | Real Assets | Hedge Funds | Private Equity | Private Credit |
| Canadian Model | | | | | | | |
| (1) Rest-of-World | 60.6 | 10.5 | 5.7 | 10.7 | 13.3 | 20.0 | 0.5 |
| (2) + in-house management | 41.6 | 10.1 | 3.0 | 5.5 | 9.9 | 12.8 | 0.3 |
| (3) + increased investment in each asset clas | 45.9 | 14.0 | 2.9 | 6.3 | 9.9 | 12.3 | 0.5 |
| (4) + revised asset allocation | 51.3 | 12.4 | 2.5 | 12.6 | 10.5 | 12.8 | 0.6 |

(1) Start with an “average” large non-Canadian fund: cost of 60bps

(2) In-house asset mgmt reduces costs by 20bps

(3) Increased investment in each asset class adds 5bps

(4) Revised asset allocation adds 5bps

→ Overall, the CA model enables funds to do more while spending less

Small CA funds also have these features

1. More in-house management (13% vs. 3%)
2. More active investing (82% vs. 72%)
3. Greater allocation to real assets (10% vs. 7%)



'Light' version of the Canadian model

- degree of application depends on scale

Quantifying the impact of these features on perf.

| | Asset Sharpe Ratio | | Asset-Liability Sharpe Ratio | | Asset-Liability Correlation |
|-------------------------------------|--------------------|-------|------------------------------|-------|-----------------------------|
| | 5-yr | 15-yr | 5-yr | 15-yr | |
| (1) US public fund | 0.428 | 0.703 | 0.019 | 0.113 | 0.151 |
| (2) + CA liability profile | 0.428 | 0.703 | 0.061 | 0.160 | 0.218 |
| (3) + CA asset allocation | 0.468 | 0.778 | 0.046 | 0.148 | 0.308 |
| (4) + CA tilts inside asset classes | 0.561 | 0.830 | 0.122 | 0.191 | 0.358 |
| (5) + additional tilts | 0.524 | 0.838 | 0.125 | 0.254 | 0.420 |
| (6) + CA cost structure | 0.536 | 0.850 | 0.158 | 0.287 | 0.420 |

(1) Start with an “average” large US public fund

(2) Adopt liability profile of CA funds

(3) Adopt overall asset allocation of CA funds

(4) Adopt allocation of CA funds inside each asset class

(5) Swap Canadian assets for assets aligned with U.S. liability risks

(6) Incorporate cost differential for each asset class

These effects add up

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15-year asset Sharpe ratio increases from 70% to 85%

15-year asset-liability Sharpe ratio increases from 11% to 29%

Asset-liability correlation increases from 15% to 42%

In summary

1. How successful has the Canadian model been over the past two decades?

CA-model funds have outperformed their peers in terms of risk-adjusted asset performance, asset-liability management, and costs

2. Which features of this model have contributed the most to its success?

Cost reduction resulting from in-house mgmt opens the door to a broad range of additional resources

- greater resources spent on internal teams & value-add strategies
- increased allocation to strategic assets
- synergies resulting from fund-wide investments into risk mgmt and IT infrastructure

Gains associated with 3-pillar model go beyond value-creation

- ability to generate an efficient portfolio that aligns with risk of liabilities

In summary

3. Is the Canadian model restricted to a few flagship funds?

No. The Canadian model has trickled down to a large number of smaller funds

4. Can other institutional funds borrow features from this model?

Yes. Small Canadian funds implement a light version of the CA-model

Important benefits associated with having indexed liabilities

- ability to hedge against these risks by investing in a diversified mix of growth assets
- does not require the fund to invest exclusively in low-yield bonds