

# Passive Indexing and the Percentile Comparison

*What a personal passive-index portfolio actually achieved versus the median pension, the median endowment, and Yale — with 2025 data*

<b>Source documents</b>	(1) Passive_index_investing.pptx, S. Berkowitz; (2) Investment_Intro.docx, S. Berkowitz; (3) Investment_Policy_Statement_Generic.docx
<b>External data window</b>	Fiscal 2024 and Fiscal 2025 reporting cycles (June 30, 2024 / June 30, 2025 / March 31, 2025/2026)
<b>Institutional sources</b>	NACUBO-Commonfund Study of Endowments (FY24, FY25); CPP Investments Annual Reports (FY25, FY26); Ontario Teachers' Pension Plan (CY2024); Yale Investments Office (FY24, FY25); Harvard Management Company; Cliffwater state pension reports; NYU Stern (Damodaran) S&P 500 dataset
<b>Methodology</b>	Synthesis of source documents, current-period institutional return data, percentile placement of personal portfolio using NACUBO/Cliffwater dispersion statistics, antithesis of the Yale-model lag, and replication-cost analysis
<b>Personal portfolio reference</b>	Stuart Berkowitz, 11.0%/yr nominal (10-yr ending Feb 2013); 14.2%/yr nominal (10-yr ending April 2019). Expected mean reversion: ~13%/yr forward.

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*This document accompanies the bi-jurisdictional Monte Carlo retirement optimizer. Its purpose is to make explicit the empirical and methodological foundation on which the default return and volatility assumptions in that tool rest, and to test those assumptions against the most recent reporting cycle of the world's largest institutional investors.*

## ONE

## Executive summary

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Three documents prepared by the author over the last decade make a single, repeated, empirically-grounded claim: a low-cost, broadly-diversified, equity-tilted passive index portfolio — held with discipline through drawdowns — outperforms the great majority of professionally-managed pension funds and university endowments over rolling 10-year periods. The position is not original to the author (Sharpe, Bogle, Fama, Swensen, Buffett, Kahneman, and Lynch are cited in support) but the documents test it against specific, dated institutional benchmarks. This note updates those benchmarks to the FY24 and FY25 reporting cycles and re-runs the percentile placement of the author's reference portfolio.

### Principal findings

- **The 10-year US equity index return (~13% nominal, ~10% real) has handily exceeded the median pension and median endowment 10-year return in every standard reporting universe.** NACUBO-Commonfund FY25 reports a 10-year average of 7.7% across 657 institutions. CPP Investments reports 8.3% (FY25) and 8.8% (FY26). Ontario Teachers' reports 7.4% (CY2024). Yale, the canonical Yale-model exemplar, reports 9.4% (FY25). The S&P 500 over the comparable period delivered roughly 13% per annum total return.
- **The author's reference portfolio (11%/yr 10-yr to Feb 2013; 14.2%/yr 10-yr to April 2019) places at or above the 95th percentile of NACUBO-reported endowment 10-year returns in both windows.** Updated for the FY25 universe and standard normal-approximation dispersion, a 13% mean-reversion expectation would place at approximately the 97th-99th percentile of the most recently reported 10-year endowment universe.
- **The institutional underperformance is not an indictment of the investment professionals running these funds.** Two mechanical factors explain most of it: (a) substantial allocation to fixed income (CPP, OTPP, NACUBO median all carry 20-30% non-equity allocations as a liability-matching requirement); (b) substantial allocation to private equity, real estate, and venture growth which suffered specifically in FY22-FY24 as the rate-hiking cycle re-priced illiquid assets. A retail investor not facing those constraints captures the equity premium without paying the diversification toll.
- **The largest endowments do considerably better than the median.** Cliffwater FY24 shows the >\$5B endowment cohort at 9.1% 10-year (versus 6.8% median). The Yale-model advantage was real for two decades but has eroded over the last five-year window as venture capital and growth private equity marked down. The Markov Processes (2025) review concludes that for the second consecutive fiscal year, the average Ivy underperformed the global 70/30 stock/bond passive portfolio.
- **Two methodological warnings apply to any "passive beats institutions" claim.** First, 10-year windows ending in 2024-2025 are unusually generous to US large-cap because the AI productivity cycle and zero-interest-rate compounding both fell inside the window; rolling 20-year and 30-year medians are closer to 10% nominal, not 13%. Second, comparing a tax-exposed personal portfolio to tax-exempt institutional returns under-counts roughly 1-3 percentage points of tax drag at typical Canadian marginal rates.

**TWO**

## The three source documents

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Before turning to current institutional data, this section summarises what the three uploaded documents actually claim. They are consistent with each other and form a coherent personal investing philosophy across a 15-year span.

### 2.1 The passive-index argument (PPTX, 42 slides)

The presentation marshals the standard active-versus-passive case using the canonical evidence base. The cost asymmetry is starkly framed: total all-in active management cost is estimated at 6.5-9.5% per year (Management Expense Ratio 1-3%, impact cost 1-2% per trade, commissions ~0.8%/yr, load amortisation ~0.7%/yr, tax inefficiency from turnover ~3%) against 0.1-0.3% per year for index. The base-rate evidence cited is the standard SPIVA-equivalent claim that approximately 88% of active managers underperform their benchmark over 5 years and 98.6% over 10 years. The theoretical foundation is Sharpe's "Arithmetic of Active Management" (1991): in aggregate the average active dollar must under-perform the average passive dollar by the cost differential, because both own the same market in aggregate.

Asset-allocation principles are drawn from Fama-French (1992, 1996) factor research: a value premium of approximately 4.40% per year and a small-cap premium of approximately 3.36% per year over 1927-2004, on top of an equity premium of 8.33%. The recommended "Portfolio A" targets approximately 19% Large Value, 9.5% Small Cap, 9.5% Small Value, 9.5% Real Estate, 19% International Value, 28.5% Emerging Markets, 5% short bonds — with an expected 14.5% nominal return at 15% standard deviation, geometric. This allocation is heavily tilted toward small, value, and international/emerging exposure and is materially different from a vanilla S&P 500 portfolio.

The treatment of mean-variance optimisation is methodologically careful: the deck explicitly acknowledges Michaud's (1989) input-sensitivity critique — that the efficient frontier is extremely sensitive to small variations in expected returns, standard deviations, and correlations — and recommends studying the portfolio across multiple historical sub-periods (1927-2006, 1950-1970, 1950-2006) to check stability.

Volatility is reframed via a useful heuristic the deck calls the "(x%, x%) portfolio": a portfolio with mean x% and standard deviation x%. Under normal approximation, 1-in-7 years see returns between -x% and 0% and 1-in-40 see returns between -2x% and -x%. A (15%, 15%) portfolio supports an after-tax inflation-adjusted Safe Withdrawal Rate of approximately 5.2%; a (20%, 20%) supports approximately 7.0%. Standard-deviation drag is explicitly accounted for via the heuristic that the "equivalent zero-risk return" of a (R, SD) portfolio is approximately  $R - SD/3$ .

On alternatives, the deck is sceptical. Hedge funds: Kat and Palaro (2005) found that no more than 17.7% of 1,917 hedge funds beat a replication benchmark of mechanical S&P 500 / T-bond / Eurodollar futures trading. Private equity: IRR overstates effective return by ignoring callup-capital opportunity cost — a 20% IRR can become 8% after accounting for the cash drag of uncalled commitments. Berkshire Hathaway: Buffett's 21.1% (1965-2007) is largely a function of insurance float, intercorporate dividends, and zero shareholder dividends — the implied investing return after stripping these is approximately 14%, below the 15.47% delivered over

the same period by a small-value index.

On pension and endowment alternatives specifically, the deck makes a sharp structural observation: because they are tax-exempt, pensions and endowments can buy 100% of an operating company, substitute debt for equity, and extract all profits as tax-deductible interest. This adds 2-3% per year to returns without increasing volatility — an advantage simply not available to a taxable retail investor. This means apparent endowment-style alpha may be a tax-arbitrage structural advantage rather than skill, and the strategy does not transplant to taxable accounts.

## 2.2 The investment introduction (DOCX, ~3,500 words)

The introduction is a personal letter that translates the deck into prescriptive advice. Three quantitative anchors recur. **Save ~26% of after-tax income** over a 40-year working life to fund a constant-real-spending retirement (rising to ~45% over a 30-year career). **Save ~25× annual after-tax spending** net of pension income as a target nest egg, corresponding to a 4% Safe Withdrawal Rate. **Expect an 11%/yr nominal long-run return** from a small/value/international-tilted ETF portfolio with ~1.79% yield, real return ~9% — doubling every ~6.5 years.

The introduction makes the explicit claim: "Here is how I invest in ETFs with a low cost, buy and hold strategy to deliver performance better than 99% of pensions and endowments." A 2013-era benchmark check is provided: 10-year endowment returns at 75th percentile reported as 7.9% (NACUBO 2013) and the author's 11% claimed return for the 10-year window ending Feb 2013. By April 2019 the author reports the 10-year return at 14.2% — an unusually strong result driven by the 2009-2019 post-GFC US bull market and the small-value tilt. The author estimates this places at the 99th percentile or higher of the institutional universe.

A complete SWR sensitivity table is attached, covering returns 4-19% and volatilities 3-21% under specific Canadian-tax assumptions (25% RRSP-deferred, 2% unqualified dividends, 1% forced capital gain, 35-year horizon, 95% confidence). For the author's central assumption (11% return, 12% SD) the 35-year SWR is 3.97%; for a more aggressive (13%, 15%) it is 4.44%.

## 2.3 The Investment Policy Statement (DOCX template, ~2,500 words)

The IPS is a formal personal-investment governance document — structurally identical to those used by foundations and endowment boards. It contains all the elements of professional practice: time horizon (36 years), expected return (11% real over inflation), loss limit (40% single-year, 3% annualised over 5 years), asset-class targets with explicit lower and upper bounds, evaluation benchmark (top tercile of category over 3 and 5 years), selection criteria (no-load, expense-ratio caps that vary by asset class), monitoring procedures (quarterly review, annual rebalance), and explicit watch-list and sell triggers. The asset-allocation targets — e.g. 10-20% International Large Cap, 10-20% International Large Value, 6-12% Emerging Large, etc. — closely mirror the Portfolio A allocation in the deck.

The IPS embeds a structural realism in its tax-rate footnote: assets held personally attract 46.42% on interest, 30% on Canadian eligible dividend, 46.42% on US dividends (non-qualified), 23.21% on capital gains, 0% on return of capital. Assets in an RRSP face 46.42% on withdrawal regardless of source income. Assets in a corporation face 47.42% on inside ordinary income but with 15% US withholding on US dividends and a 30% extraction rate. These rates are consistent with the more recent Monte Carlo retirement tool's tax engine and

are the basis for the conclusion that buy-and-hold low-turnover ETFs are the most tax-efficient personal vehicle.

## THREE

## Institutional return data — FY24 / FY25

The author's percentile claims are now 6-12 years stale. This section assembles the most recent reported 10-year annualised net returns from the principal institutional investor universes. All figures are net of fees in the reporting institution's home currency. Reporting periods are not uniform: NACUBO uses fiscal years ending June 30; CPP Investments uses fiscal years ending March 31; OTPP uses calendar years; Cliffwater aggregates state pension data on the June 30 cycle.

### 3.1 US college and university endowments

The NACUBO-Commonfund Study of Endowments (NCSE) is the canonical universe: 657-658 US institutions, total endowment assets of approximately \$944.3 billion in FY25.

Reporting period	10-yr avg	1-yr	Largest cohort (>\$5B)	Source
<b>FY2025 (to Jun 30, 2025)</b>	7.7%	10.9%	n/a (not in cited release)	NACUBO press release Feb 12, 2026
<b>FY2024 (to Jun 30, 2024)</b>	6.8%	11.2%	9.1% (FY23 cohort)	NACUBO press release Feb 12, 2025
<b>FY2023 (to Jun 30, 2023)</b>	7.2%	7.7%	9.1%	NACUBO press release Feb 15, 2024
<b>FY2018 (author's prior data point)</b>	5.7%	8.2%	n/a	NACUBO-TIAA FY18 tables
<b>FY2013 (author's original data point)</b>	7.1% (mean); 7.9% (75th pctl)	11.7%	n/a	NACUBO-Commonfund 2013 NCSE

Two-year ago vs current change is small (-0.5pp from FY23 to FY24, +0.9pp FY24 to FY25). The medium-term trend is gradual decline in the 10-year average from the post-GFC peak (2013 numbers reflect 2003-2013, which included the strong 2009-2013 recovery), with a flattening at approximately 7-8% across recent years.

### 3.2 Canadian pensions (Maple 8)

Fund	Reporting period	10-yr net	1-yr	AUM (CAD)	Source
<b>CPP Investments</b>	FY2026 (Mar 31, 2026)	8.8%	7.8%	\$793.3 B	Newswire May 20, 2026
<b>CPP Investments</b>	FY2025 (Mar 31, 2025)	8.3%	9.3%	\$714.4 B	CPP press release May 21, 2025

Fund	Reporting period	10-yr net	1-yr	AUM (CAD)	Source
CPP Investments	Q1 FY2026 (Jun 30, 2025)	8.4%	1.0% Q	\$731.7 B	CPP press release Aug 14, 2025
Ontario Teachers'	CY2024 (Dec 31, 2024)	7.4%	9.4%	\$266.3 B	OTPP press release Mar 20, 2025
Ontario Teachers'	CY2023 (Dec 31, 2023)	7.0% (est)	1.9%	\$247.5 B	OTPP 2023 annual report

CPP Investments materially under-performed its passive reference portfolio benchmark over the most recent reporting period (FY26 benchmark return reported separately as above 8%) primarily due to currency hedging cost and private-asset valuation lag, but the 8.8% 10-year compares favourably to other liability-matched pensions globally and to the NACUBO endowment median. OTPP's 7.4% 10-year reflects a deliberately lower-beta allocation given the mature liability profile of the teachers' pension plan; it explicitly under-performed its own 12.9% benchmark in CY2024 (negative value-add of \$7.6B).

### 3.3 US state pensions

Reporting universe	Period	10-yr return	Source
Cliffwater state pension universe (66 plans)	10 years to FY24	6.34%	Cliffwater 24-year study (Swedroe, 2025)
NY State Common Retirement Fund	10 years to Mar 31, 2025	7.74%	DiNapoli press release Jun 2025
Cliffwater state pension universe (66 plans)	10 years to FY20	8.6%	Cliffwater FY20 report (P&I, 2021)
Cliffwater state pension universe (66 plans)	10 years to FY16	5.9%	Cliffwater FY16 report (P&I, 2017)
Author's 2013 reference (Cliffwater)	10 years to FY13	6.4% (median)	Cliffwater cited in author's Investment Intro

State pension funds historically slightly under-perform endowments due to higher fixed-income allocations required for benefit-payment cash flows. The Swedroe/Cliffwater (2025) re-analysis is important: across the 24-year 2001-2024 window, the median state pension delivered 6.34%, while a passive 70/30 MSCI ACWI / Bloomberg US Aggregate delivered 5.71%. The 0.63pp alpha to alternatives is real but small relative to the cost and complexity of running an alternatives programme.

### 3.4 Major university endowments (Ivy+ selection)

Endowment	Period	10-yr	1-yr	AUM	Source
Yale	FY2025 (Jun 30, 2025)	9.4%	11.1%	\$44.1 B	Yale News Oct 24, 2025

Endowment	Period	10-yr	1-yr	AUM	Source
<b>Yale</b>	FY2024 (Jun 30, 2024)	9.5%	5.7%	\$41.4 B	Yale News Oct 25, 2024
<b>Yale (author's 2013 reference)</b>	FY2013 (Jun 30, 2013)	11.0%	12.5%	\$20.8 B	Yale News Sep 24, 2013
<b>Harvard</b>	FY2024 (Jun 30, 2024)	n/a (1-yr only)	9.6%	\$53.2 B	Harvard Crimson Nov 11, 2024
<b>Harvard (5-yr average among top-5)</b>	FY2020-FY2024	11.2% (5-yr)	n/a	\$53 B	Crimson, multiple sources
<b>Cornell</b>	FY2024 (Jun 30, 2024)	10% (cited)	8.7%	\$11 B+	Ivy Coach 2024 review
<b>Penn</b>	FY2024 (Jun 30, 2024)	8.7%	7.1%	n/a	Ivy Coach 2024 review
<b>Dartmouth</b>	FY2024 (Jun 30, 2024)	9.4%	8.4%	n/a	Ivy Coach 2024 review
<b>Ivy League average (10-yr)</b>	FY2024	~9.2%	n/a	n/a	Ivy Coach 2024 review

Yale and the Ivy+ average have converged to a 9-10% 10-year range — materially above the NACUBO median, but below US large-cap index returns over the same window. Markov Processes' FY24 review concludes that for the second consecutive year the average Ivy under-performed both the median endowment and a passive global 70/30 benchmark, with the lag concentrated in venture capital and growth private equity that had not yet been marked-to-market. Yale CIO Matt Mendelsohn's own statement notes that the endowment is "structured to support the university's mission in perpetuity through prudent risk-taking and sustainable spending," an objective that differs structurally from individual wealth maximization.

### 3.5 Benchmark — the passive index

Index / portfolio	10-yr period	Annualised total return
<b>S&amp;P 500 (rolling 10-yr through Oct 2025)</b>	Oct 2015 - Oct 2025	~14-15% (industry compilations)
<b>S&amp;P 500 (1928-2024 median rolling 10-yr)</b>	all rolling 10-yr 1928-2015	10.0% median
<b>S&amp;P 500 (50-yr 1975-2024)</b>	1975-2024	10.6% mean / 13.1% median annual
<b>Global 70/30 (MSCI ACWI / US Agg)</b>	FY2001-FY2024 (24-yr)	5.71% (Cliffwater)
<b>Global 70/30 (FY15-FY24)</b>	10 years to FY24	6.52% (Cliffwater)

**This is the central asymmetry.** A US-large-cap-heavy passive portfolio over the 10-year window ending late-2025 returned approximately 13-15% per annum. Every institutional universe in the tables above returned 6-10%. The gap is between 300 and 800 basis points per year — compounded over the decade, this is the difference between an end value of roughly 1.95× and 3.4× on an initial dollar.

## FOUR

## Percentile placement of the personal portfolio

This section places the author's claimed 10-year returns within the dispersion of the institutional universe. The methodology is the one used in the author's Investment Intro: assume the cross-sectional distribution of 10-year endowment returns is approximately log-normal-leaning-normal, estimate the standard deviation from the spread between the median and 75th percentile (using normal-distribution inverse-CDF), and compute the z-score of the personal return relative to the universe mean.

### 4.1 Calibration of dispersion

From the FY24 NACUBO data: mean 10-year 6.8%, with a typical cross-sectional standard deviation across the 658 institutions estimated at approximately 1.5-2.0% (NACUBO does not publish the full quartile spread in press releases, but the 75th percentile across recent years has run 1.0-1.5pp above mean). Conservatively assuming  $\sigma = 1.5\%$ , the implied normal-distribution percentile placements are as follows.

Personal portfolio claim	10-yr return	z-score vs FY24 mean (6.8%)	Implied percentile (if $\sigma=1.5\%$ )
Author claim, 10-yr to Feb 2013	11.0%	+2.80	>99.7th
Author claim, 10-yr to Apr 2019	14.2%	+4.93	>99.99th
Mean-reversion expectation, forward	13.0%	+4.13	>99.9th
Stress test: assume only 11% 10-yr forward	11.0%	+2.80	>99.7th
Conservative case: 9.5% (like Yale)	9.5%	+1.80	~96th
Floor case: 8% (close to CPP)	8.0%	+0.80	~79th

### 4.2 Direct ranking against named institutions, 10-year window ending mid-2025

Rather than rely on dispersion assumptions, a cleaner approach is to rank a hypothetical 10-year return for the author's portfolio (which, given its US large-cap exposure plus Vanguard small-value and emerging-market tilt, would have tracked the S&P 500 within approximately  $\pm 100\text{bp}$  over the 2015-2025 window) directly against named institutions.

Position	10-yr ann. return	Entity	Notes
1	13-14% (est)	Author's portfolio (US large-cap heavy passive)	Approximation: S&P 500 ~13% + small/value/emerging tilt
2	9.4%	Yale University endowment (FY25)	Best Ivy-style long-term operator; private-asset drag
3	~9.2%	Ivy League average (FY24)	All eight schools

Position	10-yr ann. return	Entity	Notes
4	9.1%	Endowments >\$5B (FY23 cohort)	Larger size = better resources
5	8.8%	CPP Investments (FY26)	\$793 B AUM; Maple 8 flagship
6	8.3%	CPP Investments (FY25)	Same fund, earlier reporting cut
7	7.74%	NY State Common Retirement (FY25)	Largest US state plan
8	7.7%	NACUBO-Commonfund 658 endowment universe (FY25)	Median for entire universe
9	7.4%	Ontario Teachers' Pension (CY2024)	Mature liability profile
10	6.8%	NACUBO-Commonfund universe (FY24)	Prior year reporting
11	6.34%	Cliffwater state pension universe (24-yr)	Long-window state pensions
12	5.71%	Global 70/30 passive (Cliffwater 24-yr)	Reference passive portfolio

**The author's central claim — that the personal portfolio "deliver[s] performance better than 99% of pensions and endowments" — is supported by this ranking, but with three important caveats described below.**

### 4.3 Three caveats — what the ranking does not capture

- **Window-dependence.** The 10-year window ending mid-2025 captures the entirety of the post-GFC US bull market plus the AI-led 2023-2024 large-cap surge. A 10-year window ending mid-2000 would have looked very different (US passive ~-1%/yr); a 10-year window ending mid-2009 would have shown US passive near zero. Yale's 20-year 10.3% return remains the single most credible long-window endowment-style performance ever reported. The personal-portfolio outperformance shown above is partially attributable to a fortunate sampling window.
- **Tax exposure.** All institutional returns above are tax-exempt. The author's portfolio is held across personal, corporate, and registered accounts under Canadian tax (top Ontario marginal 53.53% on ordinary income, 26.77% on capital gains, 47.74% on non-eligible dividend). Even with full tax-loss harvesting and ETF tax efficiency, after-tax personal return for a high-marginal Canadian investor running a similar portfolio would be approximately 2-3 percentage points lower than nominal. On a tax-equivalent basis, the comparison is closer.
- **Liability matching.** Pensions cannot run 100% equity allocations because they have specific cash-flow obligations that must be met regardless of equity drawdowns. A retiree drawing 4% per year is in a structurally similar position, but a pre-retirement individual investor has no such constraint and can run all-equity. The author's deck argues explicitly that the "best fixed-asset percentage is ZERO" for an investor with sufficient time horizon. This freedom is a structural advantage that an institutional fund manager cannot exploit, not skill.

## FIVE

## Why institutions under-perform passive indexing

The institutional under-performance is robust across multiple universes and multiple decades. Five distinct mechanisms account for it; only two of them reflect anything that could be called manager skill failure.

#	Mechanism	Approximate annual cost	Skill failure?
1	Liability-matching fixed-income allocation (20-30% of pension portfolios; ~10-20% of endowments)	1.5-2.5%	No — structural
2	Tax-exempt status enabling debt-substitution in 100% buyouts; available only to institutions	(+) 2-3% advantage	No — advantage to institutions
3	Private-equity / private-real-estate marking lag and J-curve (FY22-FY24 specifically)	1.0-2.0% (recent window)	No — valuation method
4	Active-manager underperformance (88% lose over 5 years; 98% over 10 years — SPIVA basis rates)	0.5-1.5%	Yes — partly
5	Manager and consulting fees (1-3% of AUM at active hedge fund or private-equity layers)	0.5-2.0%	Yes — partly

Items 1 through 3 are not failures — they are structural features of running a pool of capital with specific obligations and valuation conventions. Items 4 and 5 are the genuine cost of active management, and the empirical evidence (SPIVA reports going back to 2002, Carhart 1997, Fama-French 2010) overwhelmingly supports the conclusion that they reduce net-of-fee returns by more than they add in gross excess return.

### 5.1 The Yale model specifically

David Swensen's Yale model — high private-asset allocation, illiquidity premium harvesting, concentrated manager relationships — delivered ~13% annualised over the 1985-2015 window, materially above the S&P 500 over the same period. The 2024-2025 data shows the model's edge has narrowed considerably. Yale's 10-year 9.4% (FY25) is above the NACUBO median but well below US equity index. The current Yale CIO Matt Mendelsohn has explicitly acknowledged the lag and attributed it to private-asset valuation timing.

This raises a question the author's deck addresses but is worth re-emphasising: **is the Yale-model alpha real, or was it the realisation of a one-time illiquidity premium during an era when fewer investors competed for private-equity deal flow?** The Markov Processes 2025 review tentatively concludes the latter: private-equity exit multiples have compressed substantially as more capital has chased the same deals, eroding the structural premium. If correct, this means even the best institutional alternative strategy is now competing with passive indexing rather than dominating it.

### 5.2 Implication for the personal investor

The combined evidence supports the author's prescriptive position. A retail investor with a long horizon and no liability-matching constraint can capture the equity premium — net of trivial passive-index fees

(0.03-0.20%) — that institutional investors cannot fully capture for structural reasons. The 99th-percentile claim is not a claim of superior skill; it is a claim that the structural disadvantages of institutional fund management (fixed-income drag, liability matching, private-asset valuation lag, active management fees) compound into a return penalty that a personal investor can simply avoid.

## SIX

## Reference portfolio composition

The reference portfolio in the source documents is multi-version, but two consistent constructions appear. Portfolio A (from the deck, 2006-vintage targets) and the actual ETF portfolio (from the Intro, 2013 holdings) are reproduced below as recorded.

### 6.1 Portfolio A (deck target, geometric mean 14.5%, SD 15%)

Asset class	Target %	Vehicle examples
Large Value	19.0%	IWD / IVE / DFLVX
Small Cap	9.5%	VO / VB / DFSVX
Small Value	9.5%	VBR / IWN / DFSCX
Real Estate	9.5%	VNQ / IYR / DFREX
International Value	19.0%	EFV / DFIVX
Emerging Markets	28.5%	EEM / VWO / DFEMX / DFEVX / DEMSX
1-yr Corporate Bonds	5.0%	LQD
Total	100.0%	—

### 6.2 Actual portfolio (Intro, 2013 snapshot)

The 2013 portfolio has more positions than Portfolio A and includes Berkshire B as a significant individual holding (12.4% by weight) plus iShares Russell Mid-Cap Value, iShares MSCI Frontier, iShares MSCI EAFE Value, and others. Reported aggregate metrics from the Intro: 5.43% YTD (early-2013 partial), 26.57% CY2013, 18.43% CY2012, 16.20% trailing 3-year, 13.95% trailing 5-year, 9.14% trailing 10-year, 5.89% trailing 15-year. Dividend yield 1.89%, blended expense ratio 0.26%, turnover 21.77%. The 10-year 9.14% in 2013 reporting differs from the 11% claim in the Intro narrative because the narrative appears to compute the return on the active portfolio over a different window than the Morningstar snapshot.

### 6.3 Asset-class single-name SWR (from deck, 1950-2006 window)

The deck includes a direct comparison of 40-year after-tax inflation-adjusted SWR across asset classes at 95% confidence, which provides a useful benchmark for individual asset-class contribution to the portfolio:

Asset class	40-yr after-tax inflation-adjusted SWR (95% CL)
Micro Cap	3.795%
Large Cap	3.825%

<b>Asset class</b>	<b>40-yr after-tax inflation-adjusted SWR (95% CL)</b>
<b>Real Estate</b>	4.248%
<b>International Large Value</b>	4.581%
<b>Small Value</b>	5.193%
<b>Portfolio A (deck construction)</b>	5.335%
<b>Emerging Markets</b>	6.297%

**Conclusion from this section:** Portfolio A's combination of small, value, and international/emerging tilts is theoretically sound under Fama-French factor decomposition but has substantially under-performed pure US large-cap over the specific 2015-2025 window. A diversified Portfolio A would likely have realised ~10-11% nominal over the last decade (international and emerging markets dragging), versus ~13% for US large-cap. The author's reported 14.2% (Apr 2019 trailing 10-yr) reflects the actual portfolio's drift toward US weighting and the BRK.B position, more than the stated Portfolio A target.

**SEVEN**

## **Antithesis — arguments against the position**

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Scientific honesty requires explicit consideration of the counter-arguments. Five are credible enough to merit specific treatment.

### **7.1 The window-selection problem**

Every "passive beats institutions" comparison is computed over a specific 10-year window, and 10-year windows are too short to draw structural conclusions. The 1990-2000 US passive return was approximately 18% per annum; the 2000-2010 return was approximately -1% per annum. If we compare the author's 1995-2005 US-large-cap return (approximately 11%) to the 2005-2015 (approximately 7.5%), the asymmetry is large. The current 10-year window ending mid-2025 has been historically anomalous: post-GFC zero rates, the AI-led mega-cap concentration, and the absence of any year worse than -19% (2022) all flatter US large-cap. A 20-year window ending today shows the S&P 500 at approximately 10% annualised — closer to the long-run average, and closer to Yale's 10.3% 20-year return.

### **7.2 Survivorship in the personal-portfolio claim**

The author's 14.2% (10-yr to April 2019) and 11% (10-yr to Feb 2013) both come from self-reported returns. There is no independent audit. Personal-portfolio returns frequently appear higher than realised because: (a) failed or under-performing positions are forgotten or rolled into accounts not included in the calculation, (b) tax drag is frequently excluded, (c) cash-drag from contributions and withdrawals timing is frequently mis-handled in time-weighted calculations done by spreadsheet. A formal Modified Dietz or true time-weighted return audited against statement records would likely show a number 1-3pp lower than self-reported.

### **7.3 Sequence-of-returns risk in retirement**

The pension-fund 7-9% returns include the cost of de-risking that allows reliable monthly benefit payment regardless of market conditions. A personal portfolio at 100% equity exposure in retirement will experience drawdowns that, if combined with required withdrawals, can permanently impair capital. The author's deck explicitly addresses this via the (15%, 15%) and (20%, 20%) portfolio frame — the Safe Withdrawal Rate of 5.2% versus 7.0% reflects exactly this trade-off. The MC retirement tool that accompanies this note shows that for typical retirement parameters, leverage and all-equity allocations widen P10 outcomes considerably even when they improve P50.

### **7.4 Tax-arbitrage favouring institutions**

The deck's own observation is decisive here. A tax-exempt pension or endowment can buy an operating company at 100%, substitute debt for equity, and extract operating profits as tax-deductible interest. This is a 2-3% annual structural advantage that a taxable personal investor cannot replicate. To the extent that endowment performance includes this kind of operating-company ownership, the comparison to a personal liquid-ETF portfolio is not fully apples-to-apples. The pension fund's 7-9% gross return may correspond to

9-12% if the underlying portfolio could be held tax-free by a personal investor.

## 7.5 Behavioural execution

The largest gap between hypothetical passive returns and realised passive returns is the behaviour gap. Dalbar's annual Quantitative Analysis of Investor Behavior consistently shows that the average mutual-fund investor's realised return is 1.5-3.0% per year below the fund's own time-weighted return, due to buy-high/sell-low timing. A personal investor who claims to be running a passive Portfolio A but actually adjusts it during drawdowns (selling EM in 2008, selling internationally in 2014-2018, reducing US large-cap in 2022) will realise institutional-style returns or worse. The institutional advantage is enforced discipline.

**Conclusion of the antithesis.** The author's underlying claim is broadly supported by the evidence and by the structural advantages a retail investor enjoys, but the specific 99th-percentile placement and the 11-14% expected forward return require downward adjustment for window-selection bias (call it -2pp), realistic auditing (-1pp), and tax drag (-2pp at high Canadian marginal rates). A more defensible long-run expectation for a tax-exposed Canadian Portfolio-A-style investor is in the 7-9% real range after tax and inflation — still better than the median pension but not the dramatic 99th-percentile gap the original documents claim.

## EIGHT

## Practical implications

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The combined evidence supports a small number of operational conclusions for the personal investor that are internally consistent across the three source documents and the current institutional data.

- **Do not pay for active management of any flavour above 25-50bp.** The SPIVA base rate (88% under-perform over 5 years, 98% over 10 years) is robust across two decades of measurement. Active management at retail-fund expense ratios (1-2%) is overwhelmingly negative-expected-value.
- **Hold for at least 20 years.** The rolling-window analysis shows that 10-year returns have ranged from -1.5% to +20% (1928-2015 windows). Twenty-year rolling windows have all been positive (3.1% to 17.7%). The probability of negative real returns falls below 5% only at horizons beyond 15-20 years.
- **Tilt the portfolio toward documented factor premia — but expect long stretches of under-performance.** The Fama-French value and small premia were largely absent from 2015-2024. A factor-tilted portfolio under-performed pure US large-cap by 200-400bp per year for nearly a decade. The expected-return case is correct but the realised path can include very long drawdowns.
- **Use the Investment Policy Statement framework formally.** The IPS in the source documents has all the elements of a foundation IPS — loss limits, rebalance thresholds, sell triggers, monitoring procedures. Writing it down and following it is the single largest defence against the behaviour gap that destroys most realised retail returns.
- **Cap total fixed-income exposure at the level required to fund 1-2 years of mandatory expenses.** The deck's argument that "the best fixed-asset percentage is ZERO" is too strong for a retiree but qualitatively correct in direction. A 5-10% fixed allocation funding immediate expenses provides drawdown defense without dragging long-run returns materially.
- **Avoid alternatives unless tax-exempt access is available.** Hedge funds (17.7% beat replication per Kat & Palaro), private equity (IRR overstatement; illiquidity premium compression), and private real estate (correlation with equity in stress periods) do not justify their fee structures for a retail investor. The institutional case for them rests on tax-exempt status and operating-company access that the retail investor cannot replicate.
- **Hold a tax-aware buy-and-hold portfolio in taxable accounts; hold higher-turnover, higher-yield positions in registered accounts.** The IPS footnote tax table makes this point precisely: a non-eligible foreign dividend in a personal account faces 46.42% Canadian marginal tax; the same security inside an RRSP faces 0% inside but 46.42% on withdrawal, while a buy-and-hold position attracts only 23.21% capital gain at realisation. The location decision is worth 1-2 percentage points of after-tax return per year for typical retiree portfolios.

## NINE

## References and data sources

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### Source documents (uploaded)

- Berkowitz, S. *Passive\_index\_investing.pptx*. 42-slide presentation covering active vs passive arithmetic, factor premia, asset allocation, SWR sensitivity, alternatives critique, Buffett deconstruction.
- Berkowitz, S. *Investment\_Intro.docx*. ~3,500-word personal letter with savings rate prescription, SWR sensitivity table, portfolio composition, pension/endowment percentile comparison (2013 and 2019 data).
- *Investment\_Policy\_Statement\_Generic.docx*. ~2,500-word IPS template with executive summary, asset-allocation bounds, evaluation benchmarks, monitoring procedures, and Canadian tax footnote.

### Institutional return data (2024-2025)

- NACUBO and Commonfund. *2025 NACUBO-Commonfund Study of Endowments*, press release Feb 12, 2026. 657 institutions, \$944.3B AUM, 10-year average 7.7%.
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*This document is a methodological note accompanying the bi-jurisdictional Monte Carlo retirement withdrawal optimizer. It is not financial advice. The author of the source documents is not a licensed financial advisor in any jurisdiction. The percentile claims are computed under explicit normal-distribution approximations as noted in Section 4 and should be understood as orders of magnitude, not precise rankings. Past returns of any institution or index do not guarantee future returns. Consult a licensed advisor for personal financial decisions.*