

# LOSING Ground

Do Canadian mutual funds produce fair value for their customers?

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“Fair Value is an amount of goods or services deemed to be a suitable equivalent for something else...”

—*Internet Reference Dictionary*

There has been an ongoing debate in both the media and in academia about the value Canadian mutual funds produce for the people who invest their savings through these vehicles. With Canadians now entrusting \$646 billion of their savings to mutual fund managers, the outcome of this debate is not inconsequential.<sup>1</sup> Thus far, the debate stands unresolved, with Canada’s mutual fund industry successfully parrying the cuts and thrusts delivered by the industry’s critics over the years.

An important reason the debate has not been resolved is because there has not been a standard definition of the value mutual funds are supposed to deliver to their customers. If the debate is ever to be resolved, a clear value definition that all parties can agree on will first have to be established. Once established, the debate can finally be resolved through the measurement of actual outcomes against this value standard. Such measurement should ideally be done with databases that are large, and of verifiable quality.

The study described in this article meets these criteria. It starts with an operationally useful definition of value (see above), and includes a specific something else that can act as the suitable equivalent value

benchmark. We propose the comparable investment results delivered by a large sample of Canadian pension funds as the equivalent value benchmark. If Canadian mutual funds provide fair value, they would deliver equal or better investment results than Canadian pension funds deliver with similar investment mandates.

The study specifically compares the net excess returns produced by a large sample of Canadian mutual funds with domestic equity mandates against the net excess returns produced by a large sample of the domestic equity components of Canadian pension funds. An important study finding is that, over the nine-year period from 1996 to 2004, the Canadian equity components of Canadian pension funds outperformed their Canadian equity market benchmark by an average +1.2% per annum, net of expenses. Over the same nine-year period, Canadian equity mutual funds with domestic mandates underperformed their Canadian equity market benchmark by an average -2.6% per annum, net of management fees, but before any applicable sales charges. Any such sales charges would reduce mutual fund net returns even further.

The measured Canadian mutual fund average return shortfall (before sales charges) of 3.8% per annum relative to similar mandates executed by Canadian pension funds suggests the average Canadian mutual fund has not been producing fair value for its customers.

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### Study databases, methodology, and results

The source of these findings is a study commissioned by the Rotman International Centre for Pension Management (ICPM) at the University of Toronto. The study titled “Economies of Scale, Lack of Skill, or Misalignment of Interest? A Study of Pension and Mutual Fund Performance” by Bauer, Frehen, Lum, and Otten was first presented at an ICPM Workshop in October 2006, and can be accessed through the ICPM website.<sup>2</sup> The mutual fund data came from website Globefund.com and the Worldscope databases (for Canadian funds) and the CRSP database (for U.S. funds). The pension fund data comes from the databases of the global benchmarking firm CEM Benchmarking Inc. CEM has return, benchmark, and expense data for Canadian and U.S. defined benefit (DB) pension funds starting in 1992, and for U.S. defined contribution (DC) pension funds starting in 1997.<sup>3</sup>

A key metric in the study was Net Value Added (NVA), which is calculated in two steps. A fund’s gross return minus the return on the relevant market benchmark over the same period is defined as a fund’s Gross Value Added (GVA) over that period. GVA minus the fund’s management expense ratio (MER) over the same period is defined as a fund’s NVA over that period. Table 1 on the right reports the average GVAs, MERs, and NVAs for the domestic equity components of large samples of Canadian and U.S. mutual funds and pension funds. Each analysis was performed using the maximum available data for the specified time period.<sup>4</sup>

Thus the Canadian DB92 NVA averages are based on annual observations beginning in 1992 and ending in 2004. The Canadian mutual

fund (MF) data starts in 1996, hence the Canadian DB96 NVA average is also calculated to provide a more direct comparison with Canadian MF96 NVA averages. The U.S. DB NVA averages are based on the 1992-2004 period, thus there are U.S. DB92 and U.S. MF92 calculations. The U.S. DC NVA averages are based on the 1997-2004 period, leading to U.S. DC97 and U.S. MF97 calculations. Other metrics in the tables are the number of annual fund observations (N) on which each of the calculated averages are based, the standard deviations (SD) are metrics indicating the degree of dispersion around the calculated NVA averages, and the T-Stats are measures of statistical significance of the calculated NVA averages, with values greater than +2 or less than -2 indicating strong statistical significance.

We summarize the key study findings summarized in Table 1 as follows:

- The average Canadian pension fund participant received positive value from domestic equity investments, both over the 1992-2004 (DB92 NVA=+0.76%) and 1996-2004 (DB96 NVA=+1.23%) periods. This included the deduction

Canadian and U.S. Mutual Fund and Pension Fund Average Domestic Equity NVAs and Related Statistics						
	N	GVA	MER	NVA	SD	T-Stat
CDN DB92	968	+1.01%	0.25%	+0.76%	1.88%	+5.70
CDN DB96	636	+1.47%	0.25%	+1.23%	1.92%	+8.05
CDN MF96	2781	+0.15%	2.75%	-2.60%	4.95%	-15.19
U.S. DB92	1699	+0.20%	0.32%	-0.12%	1.67%	-1.53
U.S. MF92	23395	-1.59%	1.19%	-2.78%	5.48%	-33.27
U.S. DC97	510	+0.18%	0.62%	-0.44%	1.35%	-4.58
U.S. MF97	18782	-1.33%	1.20%	-2.53%	5.49%	-28.12

## Why would Canadian mutual fund investors subject themselves to an average wealth-loss of 3.8% per annum relative to implementing the same basic investment policy through Canadian pension funds?

of an average 0.25% per annum for incurred investment expenses. In contrast, the average participant in Canadian domestic equity mutual funds over the 1996-2004 period gave up considerable value (MF96 NVA=-2.60%). This loss was entirely due to the average 2.75% per annum in incurred investment expenses.

Any incurred sales charges would make the value-loss even more severe.<sup>5</sup>

- The average U.S. pension fund participant received marginally below market-equivalent performance from domestic equity investments, both over the 1992-2004 (DB92 NVA=-0.12%) and the 1997-2004 (DC97 NVA=-0.44%) periods. This included the deduction of an average 0.32% for incurred investment expenses in the DB funds. The average 0.62% deduction for the DC funds includes administrative expenses as well. In contrast, as in Canada, the average participants in U.S. domestic equity mutual funds over the 1992-2004 and 1997-2004 periods gave up considerable value (MF92 NVA=-2.78%, MF97 NVA=-2.53%). Part of this loss was due to higher investment expenses. An even greater part was due to the average U.S. domestic equity mutual fund underperforming its benchmark even before expenses. Any incurred sales charges would make the value-loss even more severe.

Are there explanations for these findings?

### Possible explanations for the findings

Why would Canadian mutual fund investors subject themselves to an average wealth-loss of 3.8% per annum relative to implementing the same basic investment policy through Canadian pension funds? Or equivalently, why would Canadian mutual fund investors pay an average 2.75% (or more including sales charges) for an investment service that is available to Canadian pension fund participants for an average 0.25%, and which produced inferior investment results even before the far greater expenses? A number of possible answers come to mind:

- DB pension fund expenses are understated: this is in fact the case. However, even if additional costs related to such functions as oversight, custody fees, and other administrative costs were added to the pension fund domestic equity investment expenses of 0.25%, the total expense ratio might rise to 0.40%.<sup>6</sup> A 0.15% reduction in the calculated average pension fund NVAs in no way affects the study's basic findings.

- The pension fund results suffer from a positive selection bias and/or risk/style biases: the researchers tested for these possibilities and found (a) the CEM database covers 70% of all Canadian DB plan pension assets, and (b) no overall risk/style biases in either the equity components of the pension funds, or in the equity mutual funds. Another possible bias might be that the cited study only compared Canadian equity mandates and not, for example, broader balanced fund mandates. The problem there is comparability. For example, pension funds invest in such asset classes as private equity, real estate, and hedge funds, while mutual funds with balanced mandates do not.

- Only 40% of Canadian workers have access to pension fund management: this is in fact the case. With only 40% of the Canadian workforce covered by an occupational pension plan, the other 60% has to fend for itself. However, this fact by itself cannot explain why Canadian investors in domestic equity mutual funds pay an average annual fee of 2.75% (plus sales charges in many cases). For example, exposure to domestic equities could be acquired by buying and holding exchange-traded funds (ETFs) for a small fraction of the fees Canadian investors pay to mutual funds.<sup>7</sup>

- Mutual funds are sold, not bought: the market for investment management services is highly asymmetric, with the buyers of these services knowing far less about what they are buying than the sellers know about what they are selling. Information economics predicts that in such a market buyers will pay too much for too little. Research results from the field of behavioural finance support this conclusion. This research shows people to be generally unsophisticated, inconsistent, hesitant, and even irrational regarding financial matters, which creates the opportunity for the for-profit financial services industry to proactively step in and sell their products and services at too-high

prices.<sup>8</sup> The veracity of this third explanation is supported by the findings of a recent survey of 1865 Canadian mutual fund investors. When asked why they had bought mutual funds, 85% said they were persuaded by “someone who provided me with advice and guidance.”<sup>9</sup> In our view, it is the combined effects of informational asymmetry and behavioural dysfunction on the part of the customers, and opportunistic acuity on the part of the suppliers, that best explains the findings summarized in Table 1. Mahoney (2004) reaches similar conclusions in a paper titled “Manager-Investor Conflicts in Mutual Funds.”

Indeed the consequences of this toxic combination of naïve mutual fund buyers and clever mutual fund sellers are materially worse than the numbers in Table 1 suggest. A U.S. mutual fund study based on 1985-2004 data published in Jack Bogle’s book “The Battle for the Soul of Capitalism” found that the average U.S. equity mutual fund under performed the market by the same 2.8% that we reported in Table 1. However, individual investors under performed the average experience of the mutual funds they invested in by a further average 3.3% per annum. Why? Because many mutual fund investors switch from fund to fund in search of better performance, thus falling into the typical naïve investor “buy high, sell low” trap, and in the process generating further unrewarded sales and transaction expenses.<sup>10</sup>

We conclude with some thoughts about the implications of our findings.

### Financial implications

To fully appreciate the impact and consequences of these findings, consider a Canadian worker earning a constant \$50,000 per annum over a 40-year working life. A sum of \$10,000 per annum is saved for retirement. The retirement fund earns a pre-expense 3% real rate of return over the 40-year period. At the end of the 40-year period, a 20-year annuity is bought with an embedded interest rate of 1.5%. Table 2 sets out the annual pension this worker will receive with investment expense ratios

of (a) 0%, (b) 0.4%, (c) 1.5%, (d) 3%, and (e) 5%.

Table 1 suggests that a 0%-0.4% ratio range is realistic for Canadian pension fund experience, depending on whether the average Canadian pension fund continues to offset its investment expenses with excess returns over market benchmarks.<sup>11</sup> The 1.5%-5% ratio range covers the wide range of possible expense ratio experiences for Canadian mutual fund investors. The 1.5% ratio is at the low end of the range, and assumes the investor does not engage in the kind of “buy high, sell low” activity that Bogle describes in his book. The 5% case assumes expense ratios at the high end of the range, as well as active engagement by mutual fund investors in the further wealth-reducing behaviours described by Bogle.

Table 2 indicates that under realistic assumptions, the typical mutual fund investor faces a minimum pension reduction of 22% (i.e., from \$41,000 per year to \$32,000 per year) relative to the typical pension fund participant (i.e., with a mutual fund expense ratio of 1.5%, and a pension fund ratio of 0.4%). That pension reduction grows to 64% if we push the mutual fund expense ratio up to 5%, and offset the pension fund expense ratio of 0.4% with an equivalent amount of pre-expense excess return (i.e., the pension reduction now is from \$45,000 to \$16,000 per year). From a different perspective, if we apply the calculated annual net return shortfalls directly to the \$646 billion Canadians have invested in mutual funds, their collective value loss is somewhere between \$7 billion and \$32 billion every year.

**The Impact of Investment Expense Ratios on Pension Adequacy**

	Effective Expense Ratio				
	0%	0.4%	1.5%	3%	5%
Annual Savings (over 40 years)	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
Final Savings (after 40 years)	\$777,000	\$707,000	\$551,000	\$400,000	\$272,000
Annual Pension Payment	\$45,000	\$41,000	\$32,000	\$23,000	\$16,000
Working Income Replacement Rate	90%	82%	64%	46%	32%



### Public policy implications

The preceding financial analyses suggest that the vast majority of the 60% of the Canadian workforce who are not members of occupational pension plans will have a very difficult time generating adequate pensions by investing their retirement savings through the mutual fund sector. This is so despite the very high 20%-of-pay savings rate assumed in the example. The sales/investment expenses wedge being imposed by Canada's for-profit financial services industry is simply too large. What, if anything, should Canada's federal and provincial governments do about this reality? At one extreme, a *caveat emptor* approach leaves millions of Canadian workers caught in this financial trap the impossible task of discovering their own way out. At the other extreme, a benevolent dictator approach would ban mutual fund investing altogether and force all workers to save for retirement through a central low-cost government agency.

We favour a middle way: the "paternalistic libertarian" approach currently in the process of being adopted in the UK. The basic idea is to create a number of arm's-length, expert, pension delivery organizations, and then to automatically enroll the entire non-covered part of the workforce into one of them. People can elect to opt out if they do not wish to participate. A minimum 7% of pay contribution rate is projected to increase the median income replacement rate for UK workers from 30% of working earnings (from Pillar 1 social security payments) to 50% of earnings. A key assumption in these calculations is that the pension delivery organizations operate in the sole best interests of plan participants, with expense ratios of 0.3%.<sup>12</sup>

Canada's governments successfully reformed an important part of the universal Pillar #1 component of our pension arrangements in the 1990s (i.e., CPP/QPP). Our study indicates that they must now urgently turn their attention to reforming the occupational part of our retirement income system. Creating pension delivery organizations that are able and willing to produce fair value for all Canadian workers will be a critical element of this reform. ■

### References

Ambachtsheer, Keith P., "Pension Revolution: A Solution to the Pensions Crisis," John Wiley & Sons, 2007.

- Ambachtsheer, Keith P., "Beyond Portfolio Theory: The Next Frontier," *Financial Analysts Journal*, January-February, 2005.
- Ambachtsheer, Keith P., Ronald Capelle, Hubert Lum, "Pension Fund Governance Today: Strengths, Weaknesses, and Opportunities for Improvement," Working Paper, 2006, [www.rotman.utoronto.ca/icpm](http://www.rotman.utoronto.ca/icpm).
- Bauer, R., R. Frehen, H. Lum, and R. Otten, "Economies of Scale, Lack of Skill, or Misalignment of Interest? A Study of Pension and Mutual Fund Performance," Working Paper, 2006, [www.rotman.utoronto.ca/icpm](http://www.rotman.utoronto.ca/icpm).
- Bogle, John C. *The Battle for the Soul of Capitalism*, Yale University Press, 2005.
- Mahoney, Paul G., "Manager-Investor Conflicts in Mutual Funds," *Journal of Economic Perspectives*, Spring 2004.

### Endnotes

1. See IFIC website [www.ific.ca](http://www.ific.ca).
2. See Bauer et al. (2006).
3. The Globefund.com database provides electronically accessible Canadian mutual fund data beginning in 1996. Worldscope provides global benchmark return data, from which Canadian equity market indexes (e.g., large cap, mid cap, small cap) were created. The CRSP database covers all U.S. mutual funds from 1962-2004, and includes fund-specific variables such as expense ratios, fund flows, investment style, etc.
4. Actually, the sequence is reversed for mutual funds, as the available return data already has the MERs netted out. So here the sequence goes from net return minus the relevant benchmark equals the mutual fund NVA for that year. The MER is then added back to the NVA to produce the mutual fund's GVA for that year.
5. The Canadian equity mutual fund MER average of 2.75% comes from the Globefund.com database, based on 2004 data. Different databases (e.g., Investor Economics) produce somewhat lower MER averages (e.g., 2.44%). However, a lower average MER estimate does not impact the study's basic conclusions, which are based on the comparison is pension fund and mutual fund NVAs. Why? Note [4] above explains that the mutual fund NVAs already have the correct MERs netted out. So in Table 1, the average mutual fund NVA calculation of -2.60% comes first. Then that number is grossed up by the 2.75% MER average to produce the average mutual fund GVA estimate of +0.15%. If the -2.60% had been grossed up by 2.44% instead, the mutual fund GVA estimate becomes -0.16%, instead of +0.15%.
6. Calculations based on data in the CEM Benchmarking Inc. database. See [www.cembenchmarking.com](http://www.cembenchmarking.com) for more information on CEM.
7. The expense ratios embedded in ETFs can be as low as 0.07%.
8. See 2006 survey by Pollara posted on the IFIC website [www.ific.ca](http://www.ific.ca).
9. See Ambachtsheer (2005) and (2007) for more on information economics and on market behaviour under conditions of informational asymmetry.
10. See Bogle (2005), page 167.
11. Astute readers will note that Table 2 does not display a calculation that projects the significantly positive net excess returns Canadian pension funds actually earned in the past, into the future. Doing so would have increased the calculated value-losses of the average mutual fund investor even more. See Ambachtsheer et al. (2006) for research on pension fund governance and its potential impact on pension fund returns.
12. See Ambachtsheer (2007), Chapter 43.