INCENTIVE FEES, VALUATION AND PERFORMANCE OF Labour Sponsored Investment Funds

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Labour sponsored investment funds[1] (LSIFs) are a special investment vehicle for Canadian retail investors. Aside from being eligible as RRSP contributions, a unique benefit of investing in LSIFs is the 30% tax credit investors receive for their investment in these funds. Given this unique benefit, the LSIF industry has had little trouble attracting investors, and total assets under management in these funds have grown rapidly since they were first introduced in the 1980s. However, as shown in Table 1, these funds have underperformed other investments available to Canadian investors.[2] Why have these funds performed so poorly? What are the key elements in the organization of these funds that may have contributed to such poor performance? This paper argues that fund manager compensation in LSIFs creates a gap between the interests of investors and managers. This misalignment may have played a critical role in managers' investment decisions and subsequent fund performance.

The relative poor performance of LSIFs may be a function of several key elements in manager compensation. First, the average management expense ratio (MER) for LSIFs is considerably higher than for other investment funds (see Table 1). Unlike mutual funds, the stated management fees of LSIFs may not cover all fees charged by fund managers.[3] Second, the investment horizons of LSIF investors and managers are severely mismatched. Investors must return the 30% tax credit if they redeem their contributions in less than eight years, so their investment horizon is effectively eight years or longer. In contrast, managers of LSIFs have a much shorter investment horizon since their performance and fees are evaluated annually or more frequently. In addition, incentive fees are structured as if the fund managers are granted a "reload" option on the fund's assets. Once the fund's performance exceeds the target return during an evaluation period, the manager "exercises" the option and collects the incentive fee. The option is immediately reloaded and "exercisable" in the next evaluation period. Fourth, incentive fees charged by most LSIFs are asset-based, whereas investors derive their returns from the performance of the entire portfolio. Finally, unrealized investment gains are frequently used in the evaluation of fund performance. Flat management fees are based on the fund's net asset value (NAV), which is a function of unrealized gains. Most LSIFs also use unrealized gains to determine whether or not incentive fees are earned or the amount of incentive fees to be charged.

Using a Monte Carlo simulation model, we assess the total fees charged by a typical LSIF in excess of the benchmark MER of 2.2% over an eight-year period. We also find that the sum of these fees is likely to exceed the 30% tax credit in all asset-based structures and some portfolio-based structures.

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LSIFs and manager compensation

LSIFs were originally set up to invest in small and medium-sized businesses and thereby create jobs, promote regional economic development and achieve other social and ethical objectives. LSIFs must be sponsored by a labour union; they are also organized as corporations and therefore have an infinite life.

Managers of LSIFs charge flat management fees and variable incentive fees for their services. Like mutual funds, the flat management fee is based on the fund's NAV. Even though LSIFs were set up as venture capital funds, their management fees are not based on invested capital as are those of most U.S.-based venture capital funds. One explanation for this common practice is that the majority of LSIFs are treated as mutual funds by regulators, and it is standard practice in the mutual fund industry to base fees on NAV. In addition, the stated management fees of many LSIFs do not cover all services provided by managers and others. The uncovered service fees may include investment advisor fees, liquid portfolio management fees, administration fees, custodian fees, and sponsor fees. For simplicity, flat management fees will be referred to as management fees from now on.

In addition to management fees, LSIFs also charge performance-based incentive fees. These incentive fees have their origins in venture capital partnerships in the U.S. but can be far more lucrative for LSIF managers.[4] Incentive fees are charged on investment gains on the fund's assets if their performance during an evaluation period exceeds a pre-specified target. The incentive fees typically account for 20% to 25% of the gains. While investors are effectively locked into the fund for at least eight years (due to the hefty early redemption penalty), incentive fees are evaluated and charged annually or even monthly. The high frequency of incentive fee collections not only leads to a substantial mismatch of investment horizons between managers and investors but also raises the amount of fees collected due to the reload option-like feature. Unlike a standard option, the reload option may be exercised more than once during its term to maturity. Once the fund performance exceeds the target return during an evaluation period, the reload option is exercised and the manager collects the incentive fees. The option is immediately reloaded, with the current asset value as the new base value for future performance evaluations. The reload feature allows the manager to maximize incentive fees by participating in the gains from risky assets in a market upswing before they evaporate in a market downturn.

Incentive fees can be either portfolio-based or asset-based. Incentive participation is based on the performance of the entire fund in the former and on the performance of individual assets in the latter. Due to the option-like structure, the manager's share of investment gains can be much larger if incentive fees are asset-based

TABLE 1

AVERAGE RETURNS AND MERs FOR LSIFs, CANADIAN SMALL CAP EQUITY FUNDS, AND CANADIAN EQUITY FUNDS

	Annual Returns (%)				
Fund Type	1-year	3-year	5-year	10-year	MER (%)
LSIF*	-13.10	-1.85	-0.12	1.96	4.58
Cdn Small Cap	4.65	3.63	0.92	8.39	2.73
Cdn Equity	-7.81	2.17	1.73	8.63	2.63
TSE 300	-10.64	-1.75	0.00	7.20	—
S&P/TSX Cdn Small Cap Index	2.15	3.27	—	—	—

All returns are stated as annual percentage returns, compounded annually. Returns are calculated as of August 30, 2002.
*Returns for LSIFs do not include the approximately 30% tax credit investors receive initially on contributions to these funds.

than if they are portfolio-based.[5] The asset-based structure also provides greater incentives for the managers to invest in riskier assets which are more likely to have some assets outperform the target return, even if the portfolio as a whole does not. Managers derive incentive fees from these outperforming assets under an asset-based structure but do not under a portfolio-based structure. Although most early LSIFs prefer the portfolio-based structure, most LSIFs today adopt the asset-based structure. In this study, six representative LSIFs are used to illustrate the wide range of compensation structures in the industry. Three of them use portfolio-based incentive fees, while the other three adopt asset-based incentive fees.

A valuation model for management and incentive fees

The performance of a LSIF is a function of both the manager's ability and the fees charged by the fund. To focus on the impact of management and incentive fees, the manager's ability is ignored in this study; in other words, all managers are assumed to have similar abilities. Under this assumption, an option-pricing model is developed to assess the total cost of management and incentive fees charged by LSIFs. While this is most appropriate if the manager can hedge future variations in fees by trading the fund's assets, the model is a good approximation of the expected value of incentive fees. The model is implemented using a Monte Carlo simulation method with standard variance reduction techniques. In order to focus on the differences between asset-based and portfolio-based structures, several simplifying assumptions are made in this section. These assumptions will be relaxed when the model is applied to the six representative cases subsequently.

Suppose a LSIF invests in a number of risky assets over a given planning horizon. A fraction of the total committed capital is invested in the risky assets, while the remainder is invested in the riskless asset. The risky assets are traded and their future prices are modeled by a joint geometric Brownian motion. Both management

TABLE 2

PRESENT VALUE OF EXCESS MANAGEMENT FEES, INCENTIVE FEES AND INVESTED CAPITAL IN LSIFS

		Asset-based funds						Portfolio-based funds					
		I. Total gains			II. Excess gains			III. Total gains			IV. Excess gains		
M	*K*	Fund value (1)	Incentive fees (2)	Excess mgmt fees (3)	Fund value (1)	Incentive fees (2)	Excess mgmt fees (3)	Fund value (1)	Incentive fees (2)	Excess mgm fees (3)	Fund value (1)	Incentive fees (2)	Excess mgm fees (3)
Management and incentive fees are evaluated annually													
8	1	0.965	0.214	0.121	0.992	0.185	0.123	0.965	0.214	0.121	0.992	0.185	0.123
8	4	0.964	0.215	0.121	0.992	0.185	0.123	1.027	0.147	0.126	1.055	0.117	0.128
8	8	0.965	0.214	0.121	0.992	0.185	0.123	1.053	0.119	0.128	1.082	0.089	0.130
8	16	0.964	0.214	0.121	0.992	0.185	0.123	1.074	0.096	0.130	1.103	0.066	0.131
Management and incentive fees are evaluated quarterly													
32	1	0.912	0.274	0.115	0.946	0.237	0.117	0.912	0.274	0.115	0.946	0.237	0.117
32	4	0.912	0.273	0.114	0.947	0.237	0.117	0.996	0.182	0.122	1.030	0.146	0.124
32	8	0.912	0.274	0.114	0.947	0.237	0.117	1.030	0.146	0.125	1.062	0.111	0.127
32	16	0.912	0.274	0.114	0.947	0.237	0.117	1.057	0.116	0.127	1.089	0.082	0.129
Management and incentive fees are evaluated monthly													
96	1	0.884	0.304	0.112	0.922	0.264	0.114	0.884	0.304	0.112	0.922	0.264	0.114
96	4	0.887	0.302	0.111	0.924	0.262	0.114	0.981	0.199	0.120	1.017	0.160	0.122
96	8	0.886	0.303	0.111	0.924	0.263	0.114	1.018	0.159	0.123	1.053	0.122	0.126
96	16	0.886	0.303	0.111	0.924	0.263	0.114	1.048	0.126	0.126	1.082	0.090	0.128

The following set of parameters is used in the calculation: The investor invests $1 in the LSIF and cannot redeem within the next 8 years. The investor immediately receives a tax credit worth 30% of his contribution to the LSIF. The LSIF invests 70% of the received capital in risky assets and puts the remainder in liquid assets. The number of risky assets in the fund (*K*) varies from 1 to 16. Returns on risky assets are uncorrelated and their volatility rate is 60% per year. The fund's management fee is 4% a year, collected *M* times in 8 years. Management fees are charged on the fund's NAV. Only management fees in excess of a benchmark MER of 2.2% are included in the calculation. Managers of the fund also receive incentive fees worth 20% of the gains in the fund's risky assets. Incentive fees are assessed and calculated at the same time the management fees are charged. Incentive fees cannot be charged unless the cumulative return on risky assets (from the last time incentive fees are collected) exceeds 6% per year. Incentive fees may be portfolio-based or asset-based and could be levied on total gains or excess gains over the performance target. The risk-free rate is 5%.

and incentive fees are collected at fixed intervals. Management fees are calculated by applying the fixed annual rate to the fund's NAV at the end of the evaluation period, adjusted by the length of the evaluation period. Managers also receive incentive fees if the cumulative return of the fund's risky assets exceeds a certain target. The amount of the incentive fees is calculated as a fixed fraction of either the total gains or gains in excess of the target: if the performance is below the target, incentive fees are not earned and investment returns continue to accumulate into the next evaluation period. Once an incentive fee is earned and collected, return accumulation begins once again at the new asset or portfolio value. To highlight the difference between asset-based and portfolio-based structures, it is assumed that asset-based incentive fees are earned as long as the cumulative return on the asset exceeds the target. Most LSIFs also require a portfolio return target even for an asset-based structure. This more realistic case will be examined subsequently.

With management and incentive fees determined in each time period, the present value (PV, discounted at the risk-free rate) of all fees expected over the planning horizon is calculated. The cost of these fees is determined as the average of the PVs calculated from many sample paths from the Monte Carlo simulation. Given this total cost, the expected value of the investor's capital in the fund is the invested capital, plus the tax credit and minus the PV of management and incentive fees.

To determine the quality of a LSIF as a potential investment, its fees are benchmarked against fees charged by alternative investment funds. As LSIFs typically invest in a mix of liquid assets and risky assets in small or medium-sized businesses, a portfolio of money market funds and small cap funds—referred to as the benchmark portfolio—is appropriate. Average MERs on these funds are approximately 1% and 2.73% per year, respectively. Assuming LSIFs invest in a mix of 30% liquid assets and 70% risky assets, the MER of this benchmark portfolio is 2.2%. The benchmark MER is removed from the LSIF's management fees to determine its excess management fees. Only incentive fees and excess management fees are used to determine the expected value of the investor's capital. In particular, a relative performance measure—called fund value—is calculated as the invested capital, plus the 30% tax credit, minus the PV of excess management fees and minus the

TABLE 3

THREE REPRESENTATIVE FUNDS WITH PORTFOLIO-BASED INCENTIVE FEES

Number of periods			Fee structure		Present value			
Incentive fees M_I	Management fees M_m	NAV averaging M	Management fees f(%)	Participation of gains g(%)	Performance target h_p(%)	Fund value $	Excess management fees $	Incentive fees $
The lowest pay structure								
1	96	96	2.30	20	10	1.232	0.008	0.060
8	96	96	2.30	20	10	1.137	0.007	0.155
32	96	96	2.30	20	10	1.082	0.007	0.211
96	96	96	2.30	20	10	1.051	0.007	0.242
The average pay structure								
1	96	96	4.00	20	8	1.102	0.134	0.065
8	96	96	4.00	20	8	1.012	0.124	0.164
32	96	96	4.00	20	8	0.958	0.119	0.223
96	96	96	4.00	20	8	0.929	0.117	0.254
The highest pay structure								
1	96	96	3.75	25	8	1.103	0.116	0.081
8	96	96	3.75	25	8	0.989	0.106	0.205
32	96	96	3.75	25	8	0.921	0.101	0.278
96	96	96	3.75	25	8	0.884	0.098	0.318

PV of incentive fees. For a given investment in the LSIF, the fund value calculates the equivalent dollar investment in the benchmark portfolio. The LSIF is unattractive relative to the benchmark portfolio if the fund value is less than the invested capital.

Table 2 presents some numerical examples of this fund value using a set of parameters that represents typical management and incentive fee structures for LSIFs in Canada. Asset-based structures are in panels I and II, while portfolio-based structures are in panels III and IV. As shown in Table 2, the management and incentive fees are quite costly to investors. Over an eight-year period, the PV of excess management fees (column 3) ranges from $0.111 to $0.131 per $1 investment in the fund. Furthermore, incentive fees (column 2) cost an additional $0.066 to $0.304 per $1 investment. Combining both fees together, the excess cost to investors ranges from 19.7% to 41.6%. The 30% tax credit is often insufficient to cover the cost of fees (in excess of the benchmark 2.2% MER). As a result, the fund value (column 1) is frequently below 1 (per $1 investment). It appears that the typical pay structure is designed to extract fees that are comparable to or exceed the tax credit plus standard fees charged by the benchmark portfolio. Without the tax credit, the LSIFs are likely to be poor investments for investors.

As expected, most of the variations in fees come from incentive fees instead of management fees. The size of incentive fees depends on several key factors. Holding other things constant, fund managers receive larger incentive fees if they are collected more often, calculated using total gains (as opposed to excess gains), are asset-based (instead of portfolio-based), and the performance target is lower. In addition, portfolio-based incentive fees also depend on how the risky assets are correlated. Incentive fees are smaller for more diversified portfolios.

Management and incentive fees for six LSIFs

The previous section evaluates management and incentive fees a typical LSIF may charge on assets they manage. In practice, however, the structure and level of these fees may vary significantly from fund to fund; surveying the prospectuses of all LSIFs currently operating in Canada, six funds are selected to represent funds with the lowest, average and highest pay structures in both asset-based and portfolio-based structures. These six funds are used to illustrate the wide range of fee levels and structures adopted by Canadian LSIFs.

In all three portfolio-based structures, performance participation is based on excess returns rather than total returns. While some of the funds include unrealized gains on the assets in determining whether or not the investment portfolio has met the threshold, others exclude them. In contrast, performance participation is based on total returns in asset-based structures. In the asset-based structures, incentive fees usually cannot be collected unless three performance thresholds are met: a portfolio return threshold, an asset return threshold, and the recouping of principal. For all three asset-based funds, portfolio returns include unrealized gains while asset returns include only realized gains on the investment.[6] Unlike the case with management fees, none of the six funds reveals how many times incentive fees are evaluated and charged each year: a variety of evaluation periods—ranging from once every eight years to once a month—are used in subsequent analysis. In addition, some LSIFs (two of the six represented) calculate management fees based on daily average NAV over the evaluation period. The Monte Carlo simulation model is modified slightly to accommodate these new features.

To implement the Monte Carlo simulation model, it is necessary to assess the type of risky assets these funds invest in. Characteristics of these risky assets are estimated from seven publicly traded assets held by one of the six funds (the most in any of the funds). Return volatilities and correlations of the seven assets are estimated and used in the analysis for all six funds. Using the same set of risky assets across all six funds may not reflect how these funds actually invest their assets, but does allow for a direct comparison of different fee structures.

Table 3 presents the PV of excess management fees, the PV of incentive fees and the fund value of a $1 investment for the three portfolio-based structures. Again, only management fees in excess of the benchmark MER of 2.2% are included in the calculation.

As shown in Table 3, the combined PV of incentive fees and excess management fees ranges from 6.8% to 41.6% of invested capital. As a result, the fund value per $1 investment varies from $1.232 to $0.884. In nearly half the cases, the fund value is below 1, making the LSIF a poor investment relative to the benchmark portfolio. If it were not for the 30% tax credit, all three funds would be very poor investments compared to the benchmark portfolio. Take the fund with the average fee structure, for example, the fund value per $1 investment varies between $0.929 and $1.102. As the number of times that incentive fees are collected (M_I) increases from 1 to 96, the PV of incentive fees increases dramatically from $0.065 to $0.254 while the PV of excess management fees declines slightly.[7] Combining both fees, the total cost to investors ranges from $0.198 to $0.371. If the manager collects incentive fees on a monthly basis (M_I = 96), the 30% tax credit is not enough to make the fund a good investment. If it were not for the tax credit, $1 invested capital would be equivalent to only $0.629 invested in the benchmark portfolio.

Table 3 illustrates the present value of the investor's expected payoff and the fund's management and incentive fees. These values are calculated using the following set of parameters. The investor invests $1 in the LSIF and cannot redeem within the next eight years. The investor immediately receives a tax credit worth 30% of his contribution to the LSIF. The LSIF invests 70% of the received capital in risky assets and puts the remainder in liquid assets. The number of risky assets in the fund is seven. The correlation matrix and standard deviation vector are estimated using monthly returns on stocks actually invested by LSIFs. The fund's management fees (f) and incentive fees (g) are extracted from the prospectus of three representative LSIFs. Only management fees in excess of a benchmark MER of 2.2% are included in the calculation. The number of evaluation periods for incentive fees, management fees and NAV averaging is M_I, Mm, and M, respectively. Performance target for receiving incentive fees is hp, and incentive fees are based on the risky portfolio's excess gains over the performance target. The risk-free rate is 5%.

Table 4 presents parallel results for the three asset-based structures. The fees are even more costly to investors than those charged by funds with portfolio-based structures. A direct comparison with Table 3 shows that the higher fees are mainly due to increases in incentive fees. This is not surprising because asset-based incentive fees are expected to be larger than portfolio-based incentive fees. In addition, the performance targets

TABLE 4

THREE REPRESENTATIVE FUNDS WITH ASSET-BASED INCENTIVE FEES

Number of periods			Fee structure				Present value		
Incentive fees M_I	Management fees M_m	NAV averaging M	Management fees f(%)	Participation of gains g(%)	Performance target *Asset* h_a(%)	*Portfolio* h_p(%)	Fund value $	Excess management fees $	Incentive fees $
The lowest pay structure									
1	96	96	3.25	20	6	6	1.152	0.077	0.070
8	96	96	3.25	20	6	6	1.014	0.070	0.217
32	96	96	3.25	20	6	6	0.915	0.066	0.320
96	96	96	3.25	20	6	6	0.849	0.063	0.388
The average pay structure									
1	96	2016	3.85	20	12	7	1.113	0.118	0.069
8	96	2016	3.85	20	12	7	0.974	0.107	0.219
32	96	2016	3.85	20	12	7	0.889	0.101	0.311
96	96	2016	3.85	20	12	7	0.837	0.097	0.366
The highest pay structure									
1	96	2016	3.85	25	0	6	1.092	0.118	0.090
8	96	2016	3.85	25	0	6	0.916	0.104	0.280
32	96	2016	3.85	25	0	6	0.809	0.096	0.395
96	96	2016	3.85	25	0	6	0.743	0.092	0.465

reported in Table 4 are also less than those in Table 3, leading to even larger asset-based incentive fees.

This table illustrates the present value of the investor's expected payoff and the fund's management and incentive fees. These values are calculated using the following set of parameters. The investor invests $1 in the LSIF and cannot redeem within the next eight years. The investor immediately receives a tax credit worth 30% of his contribution to the LSIF. The LSIF invests 70% of the received capital in risky assets and puts the remainder in liquid assets. The number of risky assets in the fund is seven. The correlation matrix and standard deviation vector are estimated using monthly returns on stocks actually invested by LSIFs. The fund's management fees (f) and incentive fees (g) are extracted from the prospectus of three representative LSIFs. Only management fees in excess of a benchmark MER of 2.2% are included in the calculation. The number of evaluation periods for incentive fees, management fees and NAV averaging is M_I, Mm, and M, respectively. Performance targets for an individual risky asset and a risky portfolio are ha and hp, respectively. All incentive fees are based on the risky asset's total gains. The risk-free rate is 5%.

Conclusions

Tax subsidies appear to be the only explanation for the tremendous growth in assets managed by LSIFs in Canada. LSIFs charge exorbitant management and incentive fees and adopt compensation contracts that severely misalign the interests of managers and investors. Not surprisingly, these funds have substantially underperformed alternative investments available to Canadians. This study has several implications for government policy-makers and regulators. First, management fees should be based on invested capital rather than NAV. The market value of private assets is not readily available and is subject to the manager's discretion. Second, incentive fees on private assets should be based on realized gains. Unrealized gains on private assets may be subject to a manager's bias and are difficult to verify. Third, incentive fees should be charged less frequently, say no more than once a year. Such a reduction partially corrects the mismatch in investment horizons between managers and investors. Fourth, investors should be allowed to switch from one LSIF to other LSIFs without penalty. The freedom to "jump ship" may create competition among LSIFs and improve their performance. Fifth, the government should reduce the lock-in period from eight years to, say, five years. Finally, governments should consider reducing or eliminating the tax credit. Elimination of the tax credit levels the playing field and forces the LSIFs to compete head-to-head with alternative investments.

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Endnotes

1. These funds are also known as Labour Sponsored Venture Capital Corporations (LSVCCs).
2. See also Anderson and Wolff (2002) and Cumming and MacIntosh (2003) for further evidence.
3. See Coles, Suay and Woodbury (2000) and Deli (2002) for surveys of mutual fund manager compensation.
4. See Sahlman (1990) and Gompers and Lerner (1996, 1999) for additional information on U.S. venture capital investments.
5. Because the portfolio has less variability than the individual assets, the option on the portfolio is more valuable than a corresponding basket of options on individual assets. As a result, the manager collects larger incentive fees if they are asset-based than portfolio-based.
6. LSIFs also have a large percentage of their assets invested in liquid securities. For our six representative funds liquid securities as a percentage of net assets varies from 25% to 57%.
7. Larger incentive fees reduce the fund's NAV, which in turn reduces the asset base that management fees can be charged to.

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