

The Great White North

The untapped riches of the Great White North have been luring adventurers for centuries. The first Europeans came to the land we now call Canada for fish, fur and spars for the Royal Navy. As the land was cleared, treasures from underground started to beckon. Precious metals, minerals and then potash, oil and gas became the economic backbone of this country and represent a major part of its capital markets today. Investors are attracted by the healthy returns and diversification benefits our resource-based markets can provide.

Hedge fund managers have also started to take note. Although the growth of our hedge fund sector lagged other developed countries, a sizable industry now exists in Canada. Our extensive system of securities regulation and our strong economy provide a fertile environment for hedge fund trading strategies, particularly since our capital markets are relatively un-crowded.

Many articles have been written on the global hedge fund industry as a reasonable time series of performance data has started to become available. In contrast, very little has yet been done on the Canadian industry. This is because it did not develop until very recently and there has been no reliable source of data. Domestic as well as international investors would greatly benefit from an analysis of the risk and return characteristics of the Canadian hedge fund industry but there have as yet been no comprehensive studies.¹

In a recent working paper² we provide such an analysis based on a database we compiled of approximately 200 Canadian hedge funds. Using data from 2005, we compare and contrast the risk and return of the Canadian hedge fund sector with the global hedge fund industry. We also compare these characteristics to commonly-used traditional investment benchmarks to put the

¹ Gregoriou (2004) presents a limited analysis of the Canadian hedge fund industry using data for nine funds from 1998 to 2002.

² See [author names deleted] "Risk and Return in the Canadian Hedge Fund Industry", working paper, [affiliation deleted], 2009.

true risk of Canadian hedge funds into perspective. We find that Canada's hedge funds have provided attractive returns as well as diversification opportunities for Canadian and foreign investors.

How did we collect our data?

We compiled data on 198 active and inactive Canadian hedge funds. A fund qualifies as Canadian if the actual investment management team is based in Canada. This excluded some funds which were offered by a Canadian-based institution, but for which the investment manager was located in some other centre such as New York or London.³ In general, the funds included in our database focus their efforts on Canadian securities although they may also invest in securities from other countries if this is consistent with their trading strategy. Details on how we identified funds are provided in the full version of this paper. These funds were grouped into the commonly-used set of trading strategies which are analogous to the industry sectors of major stock market indices. Table 1 provides information on the number of funds overall, and in each strategy sector, at the end of each year from 1998 to 2008.

What does our data say?

Table 2 presents summary statistics for returns on equally-weighted portfolios of all of the funds in our database or in a particular strategy sector. During the 2005 to 2009 period returns were strongly positive for the Canadian hedge fund industry. The arithmetic mean monthly return was .823% for the entire universe which represents 10.3% annually. The monthly standard deviation was only 2.9% (10.1% annualized) which resulted in an annual Sharpe ratio of 0.67. The largest drawdown for our overall index was 19.6% starting in July 2008 and still has 7.6% to recover.

³ For example, Arrow Hedge offers a number of funds under their banner for which the advisor or manager is based in the United States. None of these funds have been included in our database of Canadian hedge funds.

The returns for the sub-indices corresponding to the various strategy sectors were also strong, with the best being Futures, closely followed by Global Macro.

Table 2 also shows that our indices exhibited negative skew and high kurtosis which is usually interpreted as evidence of extreme events in hedge fund returns. This is not necessarily the case, however, because skew and kurtosis can be misleading measures, as demonstrated by Figure 1. It provides histograms of the monthly returns for the sub-indices with the highest and lowest kurtosis, which was 19.1 for Fixed Income and 3.1 for Futures. Since the scales have been kept the same the relative risk of extreme events for these two sub-indices is readily apparent. Despite its much higher kurtosis the histogram for Fixed Income indicates the historical risk of extreme events has been similar, or possibly even smaller, than for Futures. This observation is consistent with the estimates of the third and fourth statistical moments also provided in Table 1.⁴

It is important to recognize that the statistics in Table 2 have been calculated on the basis of taking a portfolio approach. If the risk and return is considered for individual funds instead, the risks would appear much larger. For example, the average standard deviation of all of the funds in our index, when considered individually, is 5.48% instead of 2.94% for the equally-weighted portfolio of these funds. We also note that a small number of individual funds contained in this portfolio provided returns in some months that appear extreme when considered on their own. For example, the highest and lowest single month returns for the funds in our database were 103.83% and -44.93% respectively.

This information is consistent with frequent reports in the popular business press that highlight

⁴ See Brulhart and Klein (2005) for more discussion of the problems of using kurtosis as a measure of extreme event risk.

an individual fund that has experienced such extreme returns. Unfortunately this type of analysis ignores the benefits of diversification which are available to investors who take a portfolio approach. The benefits of this approach are common knowledge when investing in equities; unfortunately this point is often forgotten when discussing risk and return in the hedge fund industry.

We find that the risk and return characteristics of our indices are different from those of the Canadian hedge fund industry indices provided by Scotia Capital and CanadianHedgeWatch. As described more fully in our working paper, this is because both indices are based on a much smaller number of underlying funds. Further, the types of funds included in these indices do not appear to be representative of the entire Canadian hedge fund industry with the CanadianHedgeWatch index including funds managed by firms located outside of Canada and which trade primarily in non-Canadian securities. The CanadianHedgeWatch index also includes Principal Protected Notes. The historic returns on these indices are lower than for our more broadly based index which we believe is more representative of the entire Canadian hedge fund industry.

Are Canadian hedge funds unique?

Table 3 presents a comparison of the historical risk and return of the CDN index we have compiled and two popular global hedge funds indices published by CS/Tremont and Hedge Fund Research. The Canadian index and sub-indices have the highest return in all cases. Although the standard deviations of the Canadian indices are often higher than for their global counterparts, the Sharpe ratios were always superior.

These statistics tell us that Canadian hedge funds distinguished themselves from their global peers on a number of dimensions. We believe this outperformance is attributable to three characteristics of the Canadian hedge fund industry which make it unique. First, Canadian hedge funds tend to be smaller in asset size than their global counterparts; the largest funds in Canada would be mid-tier in the global marketplace. This mirrors the Canadian equity markets; the largest Canadian corporations are mid-caps when compared to corporations around the world. Canadian hedge funds tend to be smaller; with a smaller pool of liquid stocks, bonds and other securities to trade, Canadian managers have to limit their capital base at lower levels in order to remain nimble.

Second, as compared to the global security markets, Canadian markets are more inefficient due to the smaller size and relative lack of international investors. Very few US or global hedge funds have exposure to Canada, the market is just too small for multi-billion dollar funds to allocate an amount of capital that will have a meaningful impact on their P&L. The few that did have meaningful exposure to Canada are no longer around. This greater inefficiency has provided greater returns for Canadian hedge fund investors than in global markets.

Third, Canadian hedge fund managers arguably have a local information advantage by being in Canada and trading primarily in their own markets. This observation is consistent with recent findings for hedge funds trading in Asian markets.⁵

How do Canadian hedge funds compare with traditional investments?

As most investors are aware, the period of this study was extremely volatile and includes severe

⁵ See Teo (2009).

market disruptions across almost all asset classes and markets globally. Table 4 presents summary statistics for major global equity benchmarks as well as two major global hedge fund composite indices in the CS/Tremont Hedge Fund Index and also our CDN benchmark index. The traditional equity benchmarks suffered badly during the period studied – large draw downs that are yet to be recovered, significant volatility and generally negative average returns with the exception of the Canadian equity benchmark, the S&P/TSX Composite Index. The statistics for the two global hedge fund indices dominate the traditional benchmarks in virtually all measures. Of particular note is the significantly reduced magnitude of the maximum drawdowns for the hedge fund indices as compared to global equities. Similarly, Sharpe ratios are higher and standard deviations are substantially lower as well, suggesting that the global hedge fund benchmarks fared better during the period than their equity counterparts.

Since standard deviation is only one measure of risk, the skew and kurtosis are also reported in Table 4. As is typically reported in other studies, the kurtosis for the hedge fund indices has been higher than for the equity indices, which is often interpreted as evidence of extreme returns. As discussed above, however, kurtosis can be a misleading. We provide evidence of this in a series of histograms in Figure 2. Note how broad and flat the distributions are for the equity indices and how tall and narrow the distribution is for Canadian bonds. The histograms for the hedge fund indices are much more similar to bonds than to equities.

Table 5 provides correlations among the major markets of traditional investments and hedge funds. The Canadian HF composite index showed high correlation to Canadian equities (0.91). Of the sub-indices the highest correlations were the Equity Long/Short index 0.92 to TSX and Multistrategy at 0.87. The Global Macro and Managed Futures sub-indices showed the lowest

correlations to Canadian equities at 0.21 and 0.16, respectively. Canadian hedge funds showed little to no correlation to Canadian bonds (0.03). The most correlated sub-index was the fixed income arbitrage index at 0.17, the other sub-indices ranged from -0.09 to 0.04.

Canadian hedge funds were less correlated to US and global equities. The Canadian HF composite index showed a correlation of 0.65 to S&P500, 0.74 to MSCI EAFE and 0.72 to Nikkei. Most of the Canadian HF sub-indices were as correlated to these benchmarks as the composite index, except for Equity Market Neutral (0.20 to 0.35), Global Macro (0.10 to 0.18) and Managed Futures (-0.05 to 0.02).

What are the implications for investors?

The above empirical findings have important implications for investors. First, it is important to take a portfolio approach when investing in hedge funds. The best way for an investor to add exposure to Canadian hedge funds is likely through a diversified portfolio of Canadian hedge funds, or a fund of Canadian funds. Rather than attempting to pick the best one or two funds, representing only one or two hedge fund strategies, far greater diversification benefits can be obtained by investing in more than one or two funds.

Second, investment opportunities in the Canadian hedge fund industry appear not to be well represented by the Canadian hedge fund indices provided by Scotia Capital and CanadianHedgeWatch. The broader index we have compiled has higher returns over the time period we considered, which is important to know when making asset allocation decisions.

Third, the risk and return of Canadian hedge funds is distinct from that of the global hedge fund

market, as well as traditional asset classes. The returns have generally been higher with only slightly higher risk. This implies investors should make large allocations to Canadian hedge funds in addition to any allocation they may already have to the global hedge fund sector.

We provide further evidence of the benefits of investing in Canadian hedge funds in our working paper by presenting the same summary statistics for two stereotypical investors with varying allocations to hedge funds. We find that adding hedge funds to any of the basic portfolios would have improved the various statistics. Of primary interest however is the evidence that adding Canadian hedge funds to such a portfolio, either solely or in addition to global hedge funds, is most beneficial to investors. With the lower volatility, lower drawdowns and higher returns, adding any amount of Canadian hedge funds to an investor's portfolio, would have lowered the volatility, lowered the draw downs and increased the return of that portfolio. This combined with the low correlation to traditional markets implies that Canadian hedge funds should be part of both Canadian and global investors' portfolios.

Before concluding it is important to note some caveats. First, the benefits of including hedge funds in a portfolio outlined above ignore other practical considerations, such as the relatively low liquidity of hedge funds, which may be important for investors. Second, we have based our conclusions on historical evidence and need to make the usual disclaimer that "past performance is not indicative of future results". Third, although we believe our indices are representative of the Canadian hedge fund industry they may not be investible. Although the majority of funds included in our CDN indices are open for new investments some are closed or may be closed in the future.

What is the bottom line?

Our analysis shows that the unique risk characteristics of Canada's capital markets have been clearly evident in its hedge fund industry. When considered on a portfolio basis, Canadian hedge funds have continued to be attractive for Canadian as well as foreign investors. In short, the longstanding allure of the Great White North appears not to have diminished.

References

Brulhart, Todd, and Peter Klein, (2005), “Are extreme hedge fund returns problematic?”, *working paper*, Simon Fraser University; 2005 AIMA Canada research award winner.

Gregoriou, Greg N., (2004), “Performance of Canadian Hedge Funds Using a Modified Sharpe Ratio”, *Derivatives Use, Trading & Regulation*, 10(2), 149-55.

Teo, Melvyn (2009), “The Geography of Hedge Funds”, *The Review of Financial Studies*, *forthcoming*.

Table 1
Number of Canadian Hedge Funds between 1998 and 2008

This table provides the number of live Canadian hedge funds in our entire database for each strategy sector at the end of the calendar years as indicated.

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
All Strategies	12	18	27	39	56	68	95	116	144	165	149
Multi	3	3	5	6	6	6	8	8	8	9	9
Convert	1	1	1	1	2	2	3	3	3	3	3
Fixed Income	1	1	1	1	3	3	4	6	6	8	5
Market Neutral	0	1	2	3	5	9	11	17	18	22	21
Event Driven	1	2	2	3	4	4	5	5	6	7	7
Equity Long/Short	5	7	13	18	25	32	49	58	75	86	75
Managed Futures	1	3	3	5	9	10	12	14	20	21	23
Global Macro	0	0	0	2	2	2	3	5	8	9	6

Table 2
Summary Statistics for Canadian Hedge Fund Indices

The statistics in this table are for monthly returns from January 2005 to June 2009 for the CDN hedge fund index and sub-indices created by the authors of this paper. Statistics are for monthly data and are not annualized, except for the Sharpe ratio as indicated. The Sharpe ratio is based on a riskless rate of 3%.

	Average Monthly Return	Standard Deviation	Skew	Kurtosis	3rd Moment	4th Moment	Sharpe Ratio (annual)	Maximum Drawdown (%)	Period of Maximum Drawdown	Months to Recovery / Left to Recover
CDN Composite	0.823%	2.944%	-1.2400	5.4982	-3.163%	4.508%	0.6745	-19.57	5 months	7.564
CDN - Multi	0.742%	3.946%	-0.9923	4.7179	-3.936%	5.816%	0.4319	-29.11	13 months	10.35
CDN - EMN	0.450%	1.224%	-1.5210	7.2560	-1.407%	2.009%	0.5653	-5.38	6 months	2.222
CDN - FI	0.251%	1.862%	-3.2631	19.1198	-2.762%	3.893%	0.0011	-15.66	18 months	7.896
CDN - Convert	0.723%	5.534%	-2.5640	11.2010	-7.575%	10.125%	0.2960	-40.19	4 months	18.804
CDN - Event Dr.	1.506%	5.419%	-1.0450	5.7161	-5.500%	8.380%	0.8025	-32.39	13 months	10.923
CDN - Equity LS	0.837%	3.964%	-1.1120	4.8706	-4.107%	5.889%	0.5132	-27.73	13 months	12.816
CDN - Futures	1.202%	1.948%	0.4065	3.1006	1.443%	2.585%	1.6935	-3.68	2 months	2 months
CDN - Macro	1.460%	3.093%	2.2369	12.1188	4.045%	5.771%	1.3549	-5.54	2 months	2 months

Table 3
Summary Statistics for Canadian and Global Hedge Fund Indices

The statistics in this table are for monthly returns from January 2005 to June 2009 for the CS/Tremont, Hedge Fund Research and CDN hedge fund index and sub-indices as indicated. Statistics are for monthly data and are not annualized, except for the Sharpe ratio. The Sharpe ratio is based on a riskless rate of 3%.

Sub-Strategies	Average Monthly Return	Standard Deviation	Skew	Kurtosis	3rd Moment	4th Moment	Sharpe Ratio (annual)	Maximum Drawdown	Period of Maximum Drawdown	Months to Recovery / Left to Recover
CS/Tremont Index	0.353%	2.055%	-1.4197	6.0546	-2.309%	3.223%	0.1743	-19.68	16 months	13.913
HFRI Comp	0.408%	2.177%	-1.0594	5.2086	-2.219%	3.289%	0.2514	-21.42	16 months	12.792
CDN Composite	0.823%	2.944%	-1.2400	5.4982	-3.163%	4.508%	0.6745	-19.57	5 months	7.564
CS/T - Multi	0.304%	2.169%	-1.5837	6.9308	-2.528%	3.519%	0.0859	-24.72	14 months	15.471
HFRI - Multi	0.164%	1.886%	-2.4435	12.5217	-2.541%	3.548%	-0.1574	-21.48	19 months	11.704
CDN - Multi	0.742%	3.946%	-0.9923	4.7179	-3.936%	5.816%	0.4319	-29.11	13 months	10.35
CS/T - EMN	-0.246%	5.698%	-6.8886	52.2549	-10.842%	15.320%	-0.3017	-45.10	8 months	41.864
HFRI - EMN	0.242%	0.900%	-1.4673	5.7929	-1.022%	1.396%	-0.0298	-9.04	10 months	7.775
CDN - EMN	0.450%	1.224%	-1.5210	7.2560	-1.407%	2.009%	0.5653	-5.38	6 months	2.222
CS/T - Fixed Income	-0.150%	2.680%	-3.2790	17.0809	-3.981%	5.448%	-0.5168	-29.02	14 months	20.626
HFRI - Fixed Income	0.092%	2.352%	-1.9721	10.5534	-2.950%	4.240%	-0.2331	-28.11	19 months	18.005
CDN - Fixed Income	0.251%	1.862%	-3.2631	19.1198	-2.762%	3.893%	0.0011	-15.66	18 months	7.896
CS/T - Convert Arb	0.038%	3.144%	-2.2425	11.2079	-4.116%	5.753%	-0.2333	-32.88	14 months	16.803
HFRI - Convert Arb	0.178%	3.507%	-2.2614	13.0192	-4.603%	6.661%	-0.0707	-35.32	13 months	15.507
CDN - Convert Arb	0.723%	5.534%	-2.5640	11.2010	-7.575%	10.125%	0.2960	-40.19	4 months	18.804
CS/T - Event Dr.	0.435%	1.896%	-1.1811	5.0984	-2.004%	2.849%	0.3377	-19.15	16 months	13.484
HFRI - Event Dr.	0.303%	2.213%	-1.4367	6.6642	-2.497%	3.555%	0.0828	-24.79	16 months	16.576
CDN - Event Dr.	1.506%	5.419%	-1.0450	5.7161	-5.500%	8.380%	0.8025	-32.39	13 months	10.923
CS/T - Equity LS	0.429%	2.567%	-1.0577	4.7182	-2.616%	3.784%	0.2416	-22.00	16 months	14.298
HFRI - Equity LS	0.313%	2.894%	-1.0310	5.2622	-2.924%	4.384%	0.0754	-30.60	16 months	19.734
CDN - Equity LS	0.837%	3.964%	-1.1120	4.8706	-4.107%	5.889%	0.5132	-27.73	13 months	12.816
CS/T - Futures	0.467%	3.141%	-0.0057	1.8753	-0.562%	3.676%	0.2396	-9.18	2 months	4 months
HFRI - Futures	0.992%	2.560%	0.2626	2.8998	1.639%	3.341%	1.0046	-4.41	1 month	3 months
CDN - Futures	1.202%	1.948%	0.4065	3.1006	1.443%	2.585%	1.6935	-3.68	2 months	2 months
CS/T - Macro	0.691%	1.936%	-1.3199	7.1037	-2.124%	3.161%	0.7882	-14.94	4 months	9.704
HFRI - Macro	0.584%	1.419%	0.2383	2.9510	0.880%	1.860%	0.8151	-4.94	3 months	7 months
CDN - Macro	1.460%	3.093%	2.2369	12.1188	4.045%	5.771%	1.3549	-5.54	2 months	2 months

Table 4
Summary Statistics for Traditional Market and Hedge Fund Indices

The statistics in this table are for monthly returns from January 2005 to June 2009 for the various traditional asset class and hedge fund indices as indicated. Statistics are for monthly data and are not annualized, except for the Sharpe ratio. The Sharpe ratio is based on a riskless rate of 3%.

	Monthly Return	Monthly SD	Skew	Kurtosis	3rd moment	4th moment	Sharpe ratio (annual)	Maximum drawdown	Length of Maximum Drawdown	Months to Recovery / Left to Recover
S&P 500	-0.087%	4.707%	-1.0341	5.3929	-4.760%	7.173%	-0.2478	-52.56%	16 months	36.27%
DEX Universe Bond	0.444%	2.210%	0.2612	7.0011	1.413%	3.595%	0.3042	-2.77%	2 months	2 months
MSCI EAFE	-0.010%	4.914%	-0.9869	4.6602	-4.892%	7.219%	-0.1831	-53.29%	21 months	40.09%
S&P/TSX Composite	0.406%	4.966%	-1.1544	5.7704	-5.210%	7.697%	0.1091	-44.80%	9 months	26.69%
CS/Tremont Index	0.353%	2.055%	-1.4197	6.0546	-2.309%	3.223%	0.1743	-19.68%	16 months	13.91%
HFRI Composite	0.408%	2.177%	-1.0594	5.2086	-2.219%	3.289%	0.2514	-21.42%	16 months	12.79%
CDN Composite	0.823%	2.944%	-1.2400	5.4982	-3.163%	4.508%	0.6745	-19.57%	5 months	7.56%

Table 5
Correlations between Traditional Market and Hedge Fund Indices

This table provides correlations of monthly returns from January 2005 to June 2009 for the traditional asset class and hedge fund indices as indicated.

	S&P 500 Index	DEX Universe Bond Index	MSCI EAFE Index	S&P/TSX Composite Index	CS/T HF Index	HFRI Composite Index	CDN Composite
S&P 500 Index	1.0000	0.1057	0.9001	0.8257	0.6822	0.7826	0.6518
DEX Universe Bond Index	0.1057	1.0000	0.0782	0.0843	-0.0448	-0.0037	0.0279
MSCI EAFE Index	0.9001	0.0782	1.0000	0.8467	0.7517	0.8572	0.7403
S&P/TSX Composite Index	0.8257	0.0843	0.8467	1.0000	0.8787	0.9312	0.9057
CS/Tremont HF Index	0.6822	-0.0448	0.7517	0.8787	1.0000	0.9623	0.9297
HFRI Composite Index	0.7826	-0.0037	0.8572	0.9312	0.9623	1.0000	0.9398
CDN Composite	0.6518	0.0279	0.7403	0.9057	0.9297	0.9398	1.0000

Figure 1

Distribution of monthly returns of selected Canadian Hedge Fund Sub-indices

These histograms are based on monthly returns from January 2005 to June 2009 for the CDN hedge fund sub-indices created by the authors of this paper.

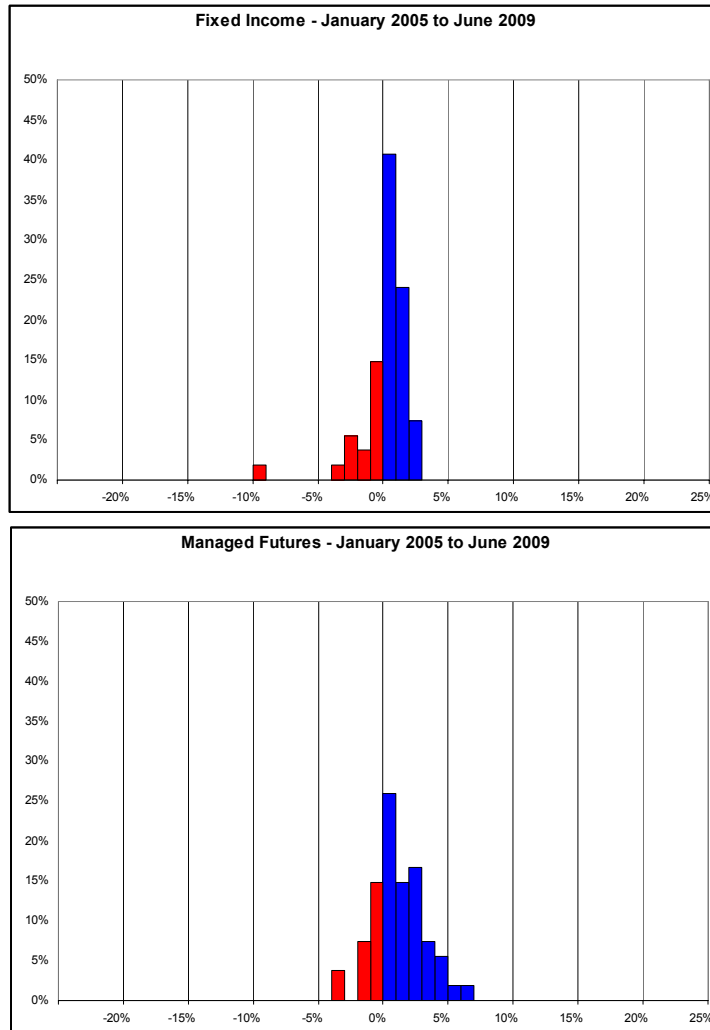


Figure 2

Distribution of monthly returns of selected global Traditional and Hedge Fund indices

These histograms are based on monthly returns from January 2005 to June 2009 for various global traditional and hedge fund indices as indicated.

