

Determinants of Management Expense Ratio for Canadian Mutual Funds

By

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Abstract

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This study examines how the management expense ratio varies across bank and non-bank financial institutions. The dataset containing 10,818 Canadian mutual funds is built from the Fundata website. While determining expenses other factors that were considered are: size and age of the fund, its asset classes, the geographical allocation of its securities, risk adjusted return and mutual fund versus ETF. The main findings are that banks charge lower MERs than non-bank financial institutions, probably because of economies of scope; larger funds benefit from economies of scale and charge a lower MER; older funds charge a higher MER; funds that give higher net return have a lower MER; equity funds are more expensive and ETFs are cheaper as compared to mutual funds.

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Dedicated to my family

Chapter 1

INTRODUCTION

As interest rates decreased in the early nineties, savers transferred their investments from low-return saving products to mutual funds. Between 1990 and 1999, the size of the mutual fund industry grew from \$25 billion to \$390 billion (Figure 1). As of 2015, this industry represents \$1.14 trillion (The Investment Funds Institute of Canada, 2015). The popularity of mutual funds is explained by the fact that they allow small investors to pool their financial resources and thus benefit from diversification, professional management and liquidity. These benefits, however, come at a cost: mutual funds charge investors a management expense ratio (MER). The MER includes management fees, operating expenses and taxes.

This report studies the determinants of the MER within the Canadian mutual fund industry. Using a sample of 10,818 Canadian mutual funds in 2015 built from the Fundata website, it is found that the management expense ratio varies across bank and non-bank financial institutions. While determining expenses other factors that were considered are size and age of the fund, its asset classes, the geographical allocation of its securities, risk adjusted return, mutual fund versus ETF. The main results of this study are that banks charge lower MERs than non-bank financial institutions probably because of economies of scope; larger funds benefit from economies of scale and charge lower MERs; older funds charge a higher MERs; funds that offer higher net return have lower MERs; mutual funds are more expensive than index ones while among asset class equity funds are more expensive.

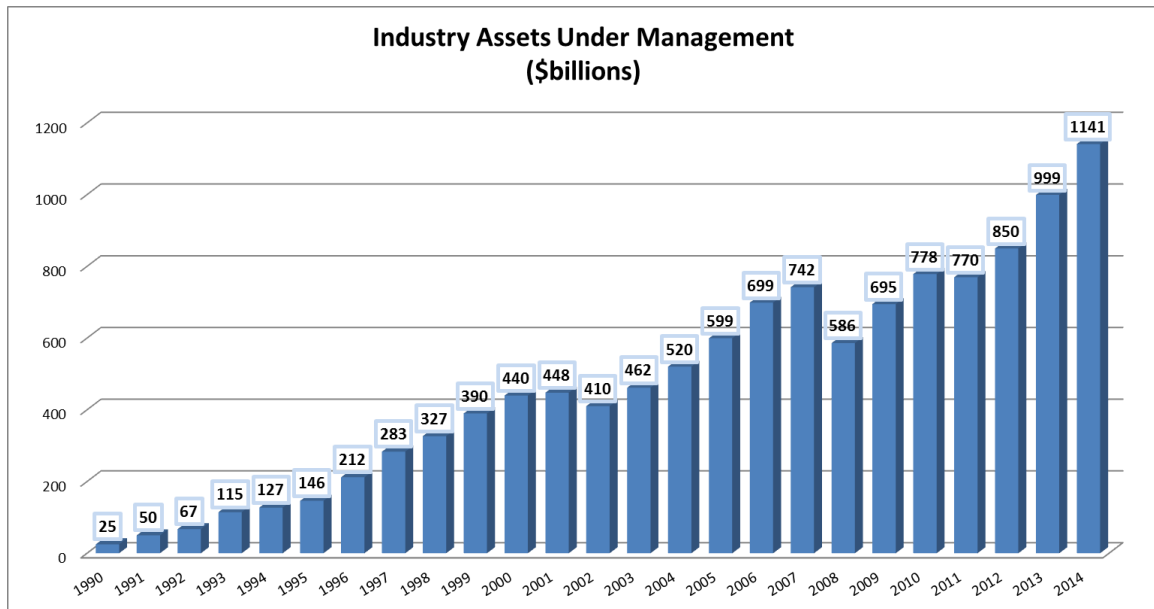


Figure 1. Size of Canadian mutual fund industry.
 Reprinted from The Investment Funds Institute of Canada (2015).

The comparison between bank and non-bank financial institutions has not been studied before while the rest of the results complement previous findings such as Carhart's (1997) who ruled out the existence of skilled or informed mutual fund managers that could influence performance. He found that turnover negatively impacts performance and that the latter is inversely related to expenses. Thus, a passive style of investment is considered better, this style is followed by ETFs. Wu (2014) and Khorana et al. (2008) supported the same findings for the Taiwanese equity market and for 18 developed countries respectively. Research by Ruckman (2003) found the average expense ratio paid by Canadian mutual fund investors is 50% higher than that paid in U.S. This study also found it is expensive to invest in Canadian securities. Dellva and Olson (1998) observed that 12b-1 fees (known as trailer fees in Canada), deferred sales charges and redemption charges increase expenses for investors; thus investors should not select

funds with hidden loads but avoidance of fees does not mean superior risk-adjusted returns.

In this study, the relation between performance and expenses is the same as that found by previous studies such as Gil-Bazo and Ruiz-Verdu (2008) who found that in equilibrium worse performing funds charge fees that match their better performing peers or surpass them. The inverse relation between size and fees found by this research is consistent with the findings of Khorana et al. (2008) and Wu (2014) who noticed fees are lower for larger funds. Khorana et al. (2008) found index funds are cheaper; management fees are lower in nations with higher per capita GDP and higher literacy rate, which have older fund industries and countries where banks are not allowed to enter the securities business. They also found fees are lower in countries with stronger investor protection.

This study examines factors associated with the MER to determine how it varies across funds and which funds provide better risk adjusted returns for a given MER percentage. The rest of the report is organized as follows: Chapter 2 describes the cost structure of mutual funds; Chapter 3 contains the literature review as well as the determinants that affect MER; Chapter 4 focuses on methodologies utilized, including data collection and the sample used after refining the data; Chapter 5 presents the regression results and Chapter 6 holds the conclusion and recommendation.

Chapter 2

COST STRUCTURE OF MUTUAL FUNDS

Costs associated with mutual funds can be broadly classified as management expense ratio fees (MER), load and others. The MER includes a fund's management fees, operating expenses and taxes. Management fees further take into account investment management expenses, trailing commissions as well as salaries of managers and other employees, while operating expenses can include account and record keeping as well as audit/ legal fees etc. The second type of fees is load which refers to transaction fees paid either in advance, front load, or at the time of selling the fund, back load. Another possibility is the use of wrap accounts. In a wrap account, investors pay a flat periodic fee that includes all costs. Lastly, other fees include miscellaneous fees charged for opening/closing the account, starting a registered plan or switching accounts etc.

Mutual funds recover their cost through the MER and loads. In most cases, there is a trade-off between them. Usually the combinations are: Front load + low MER; Back load + high MER or No Load + High MER. For instance, *AGF Precious Metals Fund Series F* is a no load fund with 1.69% MER while *AGF Short-Term Income Class* charges a lower MER of 0.87% but with load of either 6% front end or 5.5% back end. Funds also tend to reduce the back load if the investor maintains the investment for a certain time period; sometimes the back load is totally removed if a determined amount of time is exceeded. Khorana et al. (2008) included loads in their study of fees across 18 countries. They assumed a 5 year investment horizon to estimate the back end loads. However, as they themselves acknowledged, these estimates are ad hoc and do not correspond to

actual holding periods, because of the 5 year assumption. Ignoring load fees, Carhart (1997) found load funds underperform no load funds. It is difficult to quantify the effect of load, especially the back load. This study includes analysis of MER collectively on all funds, funds with no load, funds with load and funds excluding front load. No regression analysis was performed specifically targeted towards back load because an investor can completely avoid paying back load if they keep their money invested for a pre-determined time period; thus, it is a safe assumption made in this study to ignore back load. It has been assumed that investor keep their money invested until they can completely get rid of back load fees. The results are similar in all scenarios except funds with no load when the sample becomes too small giving inconclusive results. Hence, the results are robust and valid.

Cox and Payne (2005) put mutual fund fees and expenses into two categories. The more transparent one includes transaction fees, which are sales load, and redemption fees. This category is also readily observable. In this case, an investor can easily process loads in dollar amounts as these are one time fees. However, as they further stress, the real issue is with the disclosure of fees that fall into the on-going category, such as MERs. An investor may not understand the source of fees and how they adversely affect their net return. They concluded their study by emphasizing that publicly available information should be made easy to process for an average investor.

The costs covered with the MER form the greatest expenditure for a fund; this is transferred to investors who however do not pay it directly. Then why should they care about it? It is because MER is an on-going expense: an investor has to pay it every year they keep their money invested while all other expenses are mostly one time. Thus, it

becomes the biggest part of total cost. For example, a \$250 million fund with a 10% return and 2% MER will pay an investor a net return of 7.8%. This means the investor paid \$5.5 million per year in MER. Compounding interest makes it so that as time passes the cost increases significantly. For instance over 10 years, a 10% fixed return with a 2% MER will consume around 23% of an investor's gross profit, which in dollar terms equates to \$55 million!

However it is probably the difficulty in processing MER information that still makes investor ignore it. Translating MER from percentage to dollar terms is an overwhelming process for an average investor; as Gil-Bazo and Ruiz-Verdu (2008) highlighted there are gaps in the financial literacy of an investor. However, as these expenses reduce the fund's return and return on investment, it is very important to understand the MER of mutual funds before investing money. In absence of regulations that make information easy to process and comparable across mutual funds, an investor should spend an appropriate amount of time to understand these fees before investing. That's why this study is very important as it tries to look behind the opaque wall constructed by the mutual fund industry by analyzing fees in detail and presenting the results in an easily processable form.

Chapter 3

DETERMINANTS OF MANAGEMENT EXPENSE RATIO

All mutual funds charge a MER. It is usually a fixed percentage of assets under management and deducted annually. Charging fees is usually justified by the claim of a fund's superior performance due to manager's skills. These may include the ability to time the market as well as select securities advantageously. Another justification for the fee is the necessity to cover advertising expenses. The mutual fund industry posits that investor returns are further increased by economies of scale and this forms the basis for explaining trailing commissions paid to advisors and salespersons.

There has also been a lot of work on what factors determine the expense ratio and how it affects the net return in various markets. Carhart (1997), Wu (2014), W.L. Dellva and G.T. Olson (1998), Ruckman (2003), Khorana et al. (2008), Gil-Bazo and Ruiz-Verdu (2008) and Cox and Payne (2005) did extensive studies on the mutual fund industry.

There seems to be no prior study on the Canadian mutual fund industry that includes an analysis on the MERs charged by banks versus those charged by non-bank financial institutions. The study Khorana et al. (2008) performed pointed out that management fees are lower in countries where the banking industry is less concentrated; however, they did not include a comparison of fees charged by banks and non-bank financial institutions.

This report focuses on that comparison in the Canadian mutual fund industry and studies other factors that influence the expense ratio and affect net return of investors.

There are seven factors that influence the amount of MER charged by a mutual fund, these are as follows:

Factor 1: Bank versus Non-bank financial institutions

A bank is a financial institution that is licensed to receive deposits. Non-bank financial institutions are the ones solely involved in the business of investing other people's money in the market. Banks have a competitive advantage over non-banks because of synergies created from joint commercial banking and the sale of mutual funds. The economies of scope thus created help banks cut their costs. Non-banking financial institutions have to undertake expenditures exclusively for the mutual fund industry.

Banks also have a captive audience so they have the power to charge higher fees but their expenses are lower which means they would have the possibility of transferring lower cost to investors. Non-bank financial institutions need to be pro-active in their advertisement and marketing in order to attract customers. It is difficult to predict whether banks will take advantage of being price-setters by choosing higher MER.

Factor 2: Size of assets

MER is always a percentage of assets under management (AUM) therefore AUM closely affects MER. As economies of scale develop when fund size grows, there is usually a reduction in the average fixed cost which should lower the MER charged. AUM is the market value of total assets within a fund (expressed in millions, for this study). It is expected that the larger the amount under management, the lower should be the fees charged. Fixed costs for managing funds, whether it be \$10 billion or \$1 billion, remain the same but a larger fund size gives the advantage of economies of scale. As the fund

size grows so does the number of its shareholders; the cost of managing the fund gets divided amongst more investors which means the fee per shareholder should be lower. On the other hand a smaller fund needs to take care of all these fixed expenses while sustaining them with fewer shareholders and thus the cost per unit is higher. Hence, as economies of scale are developed, shareholders should likely enjoy the privilege of lower MERs.

Previous studies are contradictory; they indicate both positive and negative relation of AUM with the expense ratio. Wu (2014) said larger funds can negotiate lower transaction costs because they have larger positions and trading volumes. Khorana et al. (2008) also says larger funds have lower fees. However, not all economies of scale result in lower costs as Dellva and Olson (1998) pointed out, economies of scale developed by 12b-1 fees (in the U.S. 12b-1 fees are the equivalent of trailer fees in Canada) are not passed on to investors. Similarly, Ruckman (2003) also concluded that Canadian funds suffer less competition therefore they do not need to take advantage of economies of scale.

Factor 3: Age of the fund

Another factor included in the research is the age of the fund. As funds become mature they improve efficiency, thereby cutting costs so they may charge lower a MER. With age, funds gain expertise in the field and could do the same task in a cost effective manner, learning from experience. Along with age, usually, fund size increases too. Thus, economies of scale are developed which should ideally reduce costs. However, older funds have an established track record and could therefore lure risk-averse investors even if they charge higher MER.

Dellva and Olson (1998) defined age as a dummy variable setting it equivalent to 1 if the fund is at least 10 years old. The coefficient of age they found was negative, indicating a lower expense ratio for mature funds. Older funds develop operating efficiencies while newer funds have to bear start-up costs which are further passed on to the investors. Khorana et al. (2008) also concluded there is a negative relation between age and fees. However, Wu (2014) found older funds underperform compared to newer funds and there exist an inverse relation between performance and expense ratio which means older funds have a higher expense ratio.

Factor 4: Risk-adjusted return

Does the performance of funds play any role in MER? To answer this question a risk-adjusted return measure was included in the model. Cox and Payne (2005) highlighted a common perception among investors that higher expenses result in higher performance. People usually think that high performing funds may be employing better resources, such as superior management and/or advanced technologies; therefore, they may have to sustain higher costs for utilizing said exceptional resources. But as Dellva and Olson (1998) discovered funds which are more informed and competent in processing information generate higher returns; thereby, attract more investors and hence lower per unit fees. They concluded that superior funds exhibit lower costs and are operationally more efficient.

This relation between performance and expense has been one of the most widely and extensively studied topics. Carhart (1997) found the expense ratio is significantly and negatively related to performance. Gil-Bazo and Ruiz-Verdu (2008) concluded that better quality funds should not be expected to charge higher prices. It is investors' limited

ability to evaluate fund quality that may lead to a disadvantageous equilibrium where worse performing funds actually charge higher fees. They also included advertisements in their analysis, which are part of the expense ratio. The study found that these expenses are associated with lower quality funds and only uninformed investors tend to respond positively to them. The results Wu (2014) reached supported the negative relation between expense and performance.

Factor 5: Asset classes

There are three asset classes that have been considered in this study, equity, fixed income and money market. The more complex the asset class is, the more the effort in research and thus the higher the associated cost charged should be. Equity is the most complex but also has the potential to generate the highest return over multiple years; it should thus be charging the highest fees. Managers demand more fees when they manage their portfolio actively and are trying to outperform a stock market index such as S&P500. They want compensation for their extra hard work and research. Fixed income and money market both invest in debt securities. The difference between them is of maturity where the latter involves short term investments of less than a year. The lower time period is usually associated with fewer risks, therefore, it should also be associated with lower fees. It seems like money market funds should be cheaper than fixed income.

Most of the previous literature has focused on the equity class. This paper tries to determine which asset classes have lower fees. Khorana et al. (2008) considered this aspect, and included asset classes in their cross sectional national analysis of fees. They found that fees for equity funds are higher than bond funds.

Factor 6: Geographies

The four categories considered in this study are Canadian, American (US), Asian and the Global. Investment in a mature financial market such as the US's should be cheaper because of greater transparency and competition since these help reduce transaction costs. However, the domestic market does not exhibit any exchange rate risk and investors have better access to the stock information listed on the domestic exchange; therefore, this market may offer a lower MER than that offered by foreign ones. Not only the exchange rate risk but also different market operations, along with the lack of information, make trading costly in global and Asian markets. In addition, some markets may lack liquidity or may be subject to dramatic changes in value such as the one witnessed in China in August 2015 when the stock market went down by 38% from its peak it experienced in June 2015 (Lee, 2015). All of these factors make it difficult to purchase assets; this in turn increases transaction costs for funds and thus MERs.

The study by Khorana et al. (2008) found that countries with superior judicial systems, higher per capita GDP, an older and smaller domiciled fund industry as well as a less concentrated banking industry have lower fees. In addition, the presence of sophisticated investors depresses fees. Gil-Bazo and Ruiz-Verdu (2008) also talked about sophisticated investors and their ability to identify quality funds which charge lower fees. Dellva and Olson (1998) found that funds investing in international securities are expensive. Higher expenses experienced while purchasing these securities are passed on to investors. Ruckman (2003) pointed out that the average expense ratio paid by a Canadian mutual fund investor is 50% higher than that paid in the US because of monopolistic competition. Accordingly, it seems like US funds would be the cheapest;

they would be followed by the Canadian ones, and the most expensive would be the global.

Factor 7: Mutual Fund versus ETF

The last factor considered is that of exchange traded funds (ETFs) versus mutual funds. An ETF is a combination of mutual funds and equity. It pools together money from investors as mutual funds do and trades on stock exchanges just like equities. However, the distinguishing feature is that, unlike mutual funds, an ETF always follows some index such as the S&P 500 or the FTSE, the TMX Global Debt Capital Markets. So it is a passive style of investment wherein money is invested in the same securities that are present in the respective index it is following. This means lower cost and time are spent on research. The added liquidity and lower costs involved in developing ETFs should transfer into lower fees for investors and thus lower MERs.

Empirical literature also speaks in favour of lower fees charged by index funds. Carhart (1997) said the higher turnover associated with an active style actually worsens performance and thus the managers do not possess the skills to outperform the market. This was supported by Wu (2014) who also concluded that poor performing fund managers engage in higher turnover activity (which increases expenses) to safeguard their jobs. The negative relation between performance and expense fees suggests that the passive style of investment followed by ETFs may lead to lower expense fees.

The above mentioned seven factors have been considered in the analysis of the management expense ratio charged by Canadian mutual funds. Thus, the regression model could be defined as below:

$$MER_i = \alpha + \beta_1 Bank_i + \beta_2 \ln(AUM_i) + \beta_3 Age_i + \beta_4 RiskAdjRet_i + \beta_5 AssetClass_i \\ + \beta_6 Geography_i + \beta_7 MutFund_i + e_i$$

Ordinary least square (OLS) regression was run using robust standard errors which take care of heteroskedasticity problem present in most of the cross-sectional data.

Chapter 4

METHODOLOGY

To collect data, various websites providing information about mutual funds were explored. These included Fundata, Morningstar, The Globe and Mail. Out of these, Fundata was selected to download the data. The most important motivation for this selection is that Fundata allows its user to capture all required data for a particular mutual fund in a single click while for Morningstar and The Globe and Mail multiple clicks are needed to capture data. This aspect eased the Python programming script which was developed to dynamically collect data from the website. Beautiful soup and Selenium in combination with Mozilla browser were used to create an algorithm in Python that could efficiently meet the data collection objective. Once the Python code was fully tested and verified for a small data set, capturing the entire sample of mutual funds was a process that required approximately a week to complete. If the multiple click method had been applied it would have prolonged the time-period necessary for this step. An automated Python script saved the data in an excel file: this made it easy to use it for the analysis that followed the data capturing. The second reason for the selection is that Fundata has the largest set of mutual funds; with 27,870 funds it surpasses the other two websites which only have approximately 21,000 available.

The database consists of 27,870 mutual funds available for sale in Canada. It is cross-sectional data as reported on February 28th 2015. The dataset was divided into three categories – Geography, Asset class and Bank versus Non-Bank. The categories are all mutually exclusive with no overlap. In the financial institutions category there are only

two classes, bank and non-bank. Each fund has to fit into one of these subcategories and thus correspond to one of two dummy variables. Non-banking institutes offer 83% of these funds while the remaining 17% are offered by banks. In Canada there are six major banks: TD, Scotiabank, RBC, BMO, CIBC and National Bank. In addition, Credit Union, Desjardins and schedule II bank HSBC are also included within the category of banks since they are also deposit taking institutions. Fidelity, Vanguard, iShares etc. fall into the non-banking institution category. Investment companies overtaken by banks, such as Anchor (managed by Scotiabank) and Axiom (managed by CIBC), were also included in the non-bank category because mutual funds issued by these companies are not available for direct sale in the bank branch.

Similarly, funds were divided according to asset classes where equity was the predominant class at nearly 54% (Table 1, Initial Distribution). Fixed income accounts for 17% while Money market has the smallest presence at 2%. These categories are again mutually exclusive so *OTHERS_AC* contains balanced funds that invest in equity and fixed income as well as money market. *OTHERS_AC* also includes Commodity funds, Target date funds and Alternative Strategies. These fell into this category because the amount of data available on them was not significant. Balanced funds were also included in *OTHERS_AC* because they do not fall into an exclusive category given that they invest in a mixture of asset classes. The last kind of data to fall in to the residual class is that of funds with undisclosed holdings.

Within the Geography classification it can be observed that the greatest category of funds, i.e. 35%, invest in Canadian securities; this category is followed by ones investing in Global securities, with 33%, and then those investing in the US, 9%. All overlapping

geographies such as North American funds investing in both Canada and USA have been classified as a dummy variable in *OTHERS_G*. This class also includes smaller and insignificant geographies such as the European and Latin American ones as well as funds with no information about the physical location of securities they invest in. This ensures the classification accurately predicts fees only for a specific geographical location.

These categories are mutually exclusive. The highest portion of funds in the sample invests their money only in Canadian securities. This is expected as prior studies have shown investors have a home bias and thus prefer investing in domestic markets with which they are more familiar (French, Poterba 1991). Global markets allow for a worldwide diversified fund; this reduces the systematic risk inherent in any investment. Also by distributing the allocation across international markets, a fund manager can take advantage of higher growth rates in emerging economies such as Brazil, China and India. The low percentage of funds investing in US securities can be explained by the fact that funds usually invest in a mixture of US and Canadian securities. Asia is attracting many fund managers because several of its economies have the potential to offer growth in the double digits, or to at least beat their North-American counterparts. In Asia the hottest destinations are Japan, China and India. The opening up of Chinese market, along with the increased ease of trading in India have allowed for funds to flow more freely into these economies, both of which have good GDP growth rate forecasts.

People tend to justify a higher MER on the lines that it may generate a higher return on capital for an investor. However, a traditional measure of return could be misleading as it ignores the risk involved in the investment. Hence the Sharpe ratio is used in this

study as a standardized measure of return which considers the standard deviation of a fund and compares the return with a benchmark. The formula is as follows:

$$SR_{fund} = \frac{R_{fund} - R_{risk-free}}{\sigma_{fund}}$$

Returns are published net of MER. Subtracting the risk-free rate from the net return and dividing that by the annual standard deviation gives an idea as to the extent of the risk exposure involved in the process of generating the excess return for a year. Given that the return for the funds is measured for the one year time period, the 0.47% risk-free rate chosen was that of the one year Canadian treasury bills bought on February 28th 2014, exactly one year before the data on the funds was collected.

Out of a sample of 27,870 mutual funds 8,919 have no information about the MER they charge. The Fundata data analytics department states that information is collected as per a company's reports; therefore, these funds have chosen not to report their MER. It seems that funds following alternative strategies, having undisclosed holdings or existing for less than five years do not report their MER. Out of the funds that do not report their MER, 73% present one or more of those characteristics.

After deleting missing MER funds the sample size is reduced to 18,951 funds. To ensure the consistency of the fund sample, funds were also dropped if they didn't report assets under management. To calculate risk adjusted measures, standard deviation of funds was used. The Fundata website reports a three year standard deviation which was annualized so as to be able to calculate the one year risk-adjusted return. However, employing a three year metric deleted all funds which were less than three years old.

Thus, the parameter age starts from 3. The final sample size after all of the described selections was reduced to 10,818.

	Final Distribution		Initial Distribution	
Country				
Canada	4,522	41.80%	9,666	34.68%
USA	902	8.34%	2,478	8.89%
Asia	145	1.34%	295	1.06%
Global	3,848	35.57%	9,150	32.83%
<i>Others_G</i>	1,401	12.95%	6,281	22.54%
Financial Institution				
Bank	1,362	12.59%	4,640	16.65%
Non-Bank	9,456	87.41%	23,230	83.35%
Asset Class				
Equity	6,771	62.59%	14,986	53.77%
Fixed Income	1,711	15.82%	4,825	17.31%
Money Market	280	2.59%	551	1.98%
<i>Others_AC</i>	2,056	19.01%	7,508	26.94%
Mutual Fund Vs. ETF				
Mutual Fund	10,668	98.61%	27,239	97.74%
ETF	150	1.39%	631	2.26%
Sample Size	10,818		27,870	

Table 1. Distribution of mutual funds across various categories

As can be observed from Table 1, the final distribution of the narrowed down data is very similar to the distribution of the intact, original sample. Thus the randomness of data has been preserved.

Table 2 shows statistics of non-dummy categories such as Assets under Management (AUM), Age, risk-adjusted return and MER.

Variable	Obs	Mean	Std.Dev.	Min	Max
MER (%)	10,818	2.22	0.97	0.01	8.56
AUM (\$m)	10,818	76.17	157.35	0.01	998.75
Age (yrs)	10,818	9.28	5.55	3.00	58.00
RiskAdjRet (%)	10,818	2.69	5.84	-105.66	128.17

Table 2. Summary statistics for non-dummy categories.

A plot between MER and AUM suggested a logarithmic relation between the two; therefore, a logarithm of AUM has been used in the model where AUM is expressed in millions of dollars. The average AUM of funds is \$76 million ranging from \$10,000 to \$999 million. On the same line, the average age of funds in the sample is 9 years going from 3 to 58 years. Risk-adjusted return varies from -105.66% to 128.17% with an average of 2.69%. Similarly the average MER charged by funds is 2.22% while it varies from 0.01% to 8.56%.

Chapter 5

RESULTS

There are dummy variables for geography, asset class, financial institution and mutual fund versus ETF so the constant term in the regression model contains an omitted category from each classification. The omitted variable acts as a base for all other variables in that particular category. For geography and asset class the missing category is *OTHERS_G* and *OTHERS_AC* as discussed before while for financial institution, non-banking category is omitted and for mutual fund versus ETF, ETF is omitted. Average MER is 2.22% according to the Table 2 so α is 2.22. Regression results have been shown in Table 3.

Coefficient of bank is negative and significant at 1%. Therefore, it can be concluded that banks charge lower MER compared to non-banking financial institutions. On average keeping all else equal, if a non-banking institute charges 2.45% MER, bank would charge 1.98% MER. It is hence, understood that non-bank financial institutions have higher operating expenses to develop a clientele which banks may not have because they already have a captive clientele.

As can be seen from regression results, the coefficient of AUM is negative and significant at 10% and for every one percentage increase in AUM, MER reduces by 0.0067%. If a \$3 billion fund charges 2% MER, then a \$4 billion fund- a 33% increase in AUM- on average charges 1.78% MER, keeping all else equal. The result is consistent with Khorana et al. (2008) and Wu (2014).

MER	Coef.	Robust Std.Err.	t	P> t	[95% Conf.Interval]	
Bank	-0.46906	0.0257994	(-18.18)***	0	-0.51963	-0.41849
lnAUM	-0.00674	0.0034965	(-1.93)*	0.054	-0.01359	0.000118
RiskAdjRet	-0.00709	0.0010841	(-6.54)***	0	-0.00921	-0.00496
Age	0.012867	0.0015588	(8.25)***	0	0.009812	0.015923
Canada	0.049663	0.0287658	(1.73)*	0.084	-0.00672	0.106049
USA	-0.0481	0.0422754	-1.14	0.255	-0.13097	0.034768
Asia	0.158913	0.0737611	(2.15)**	0.031	0.014328	0.303499
Global	0.101554	0.0299438	(3.39)***	0.001	0.042858	0.160249
Equity	0.077901	0.0236927	(3.29)***	0.001	0.031459	0.124343
FixedIncome	-0.4796	0.0268937	(-17.83)***	0	-0.53231	-0.42688
MoneyMarket	-1.5552	0.0360134	(-43.18)***	0	-1.62579	-1.48461
MutFund	1.273261	0.0502383	(25.34)***	0	1.174785	1.371737
Constant	0.945659	0.0557733	(16.96)***	0	0.836333	1.054985
Sample size = 10,818		Prob > F = 0.0000		R-squared = 0.1614		Std.Error = .88941

Table 3. Regression results obtained through Stata software.

The coefficient for age of the fund is positive and significant at 1%. On average, with every one additional year, the average MER increases by 0.013%. This indicates that older funds are charging higher MER and reduction in costs is not being passed to shareholders. This could be due to the fact that in Canada, as showed by Ruckman (2003), there is monopolistic competition and thus established firms with developed clientele continue to charge high fees.

The coefficient of risk-adjusted return is negative and significant at 1%. According to the above regression, on average if a fund investing in one year Treasury bill with risk-adjusted return 0 charges 0.95% MER, then a fund with risk-adjusted return 3 will charge 0.93% MER. This is in agreement with Gil-Bazo and Ruiz-Verdu (2008) who found that high quality funds never charge higher fees and may charge lower fees; as a result, low quality funds greatly overcharge investors. Even Wu (2014) found that funds with higher portfolio turnover (higher transaction costs and thus higher expense ratio) exhibit inferior

performance and vice-versa. Dellva and Olson (1998) and Carhart (1997) support similar relations as is found in this study.

Among asset class, coefficient of equity is positive and significant at 1%. The coefficient for fixed income is negative and significant at 1%. It is cheaper to invest in fixed income as compared to equity; however, fixed income is more expensive relative to money market. The coefficient for money market is smallest and significant at 1%. Thus, on an average keep all else constant, if a fund investing in all equities charges 2% MER then a fixed income fund charges 1.44% MER, while a money market fund charges 0.37% MER. The results support Khorana et al. (2008) who found equity funds are more expensive and bond funds are cheaper. However it is still worthy to invest in equity as they give the highest return. Average annualized return on S&P/TSX is 7.4% while Canadian Govt. bonds over 10 years generate 2.6% and Canadian 3-month T-bills only 0.9% (TaxTips, 2015). Thus, the higher cost of investing in equity is usually offset by much higher return generated from it as compared to bonds or money market.

MER is not least for domestic market. The base variable is *OTHERS_G* which consist of funds investing in both USA and Canada or investing in Europe, or Latin America or the ones with no information about geographical location of their securities. P-value of 25.5% means it cannot be stated that fees charged by US and *OTHERS_G* are different. As the regression results show, US-invested funds and *OTHERS_G* have lower MER which is probably because mature and most well developed financial market in USA encourages a lot of competition which transforms into lower cost for investors. Funds investing in Canadian securities are more expensive than US and *OTHERS_G* which is probably due to the presence of relatively fewer players. Thus, domestic market

is not the cheapest. Global and Asian funds are more expensive than US and Canadian. On average keeping all else constant, Canadian funds are more expensive than US and *OTHERS_G* followed by Global and Asian funds.

The coefficient of mutual fund is positive and significant at 1%. From the regression results, keeping all else equal, on average if an ETF charges 0.95% MER then a mutual fund charges 2.22% MER.

Regression with load funds only

Table 4 shows regression results for only those funds that have load. The sample size has been reduced to 7,618 funds; however, it gives similar results as the regression with no exclusion. Banks are cheaper, MER reduces as asset size increases, with age MER increases, poor performing funds have higher MER, equity funds are costly, Asian funds are expensive while mutual funds have higher MER than ETFs.

MER	Coef.	Robust Std.Err.	t	P> t	[95% Conf. Interval]	
Bank	-0.0948	0.0310981	(-3.05)***	0.002	-0.15576	-0.03384
lnAUM	-0.0158	0.0033476	(-4.72)***	0	-0.02235	-0.00923
Age	0.01369	0.0017509	(7.82)***	0	0.010257	0.017121
RiskAdjRet	-0.0089	0.001689	(-5.3)***	0	-0.01226	-0.00564
Equity	0.09434	0.0233933	(4.03)***	0	0.048484	0.140199
FixedIncome	-0.514	0.0270256	(-19.02)***	0	-0.56697	-0.46101
MoneyMarket	-1.8098	0.0447677	(-40.43)***	0	-1.89756	-1.72204
Canada	-0.0237	0.0311877	-0.76	0.447	-0.08487	0.037408
USA	0.06149	0.0465676	1.32	0.187	-0.0298	0.152771
Asia	0.17032	0.0641622	(2.65)***	0.008	0.044547	0.296098
Global	0.05094	0.0325532	1.56	0.118	-0.01287	0.114755
MutFund	0.6729	0.0735839	(9.14)***	0	0.528651	0.817141
Constant	1.86718	0.0784395	(23.8)***	0	1.713417	2.020943
Sample Size = 7,618		Prob > F = 0.0000		R-squared = 0.1721		Std.Error = .75763

Table 4. Regression results for load funds only.

Regression with no-load funds only

A third regression was run using no-load funds as shown in Table 5. The sample is very small, only 3,200 funds. The coefficient of Bank is positive which is different from the earlier shown regression results. However, a look at p-value tells that the coefficient of bank is not significant even at 10%. Thus, it cannot be stated that banks and non-banks are different. So it cannot be concluded that banks are less expensive than non-banks; banks and non-banks charge similar fees for no-load funds.

MER	Coef.	Robust Std.Err.	T	P> t	[95% Conf. Interval]	
Bank	0.040446	0.0314054	1.29	0.198	-0.02113	0.102023
lnAUM	-0.02987	0.0056657	(-5.27)***	0	-0.04098	-0.01876
Age	0.023383	0.0024061	9.72)***	0	0.018666	0.028101
RiskAdjRet	-0.0025	0.0010793	(-2.32)**	0.02	-0.00462	-0.00039
Equity	0.029838	0.0396599	0.75	0.452	-0.04792	0.107599
FixedIncome	-0.25161	0.044265	(-5.68)***	0	-0.3384	-0.16482
MoneyMarket	-0.98193	0.0521116	(-18.84)***	0	-1.08411	-0.87975
Canada	-0.03468	0.0406972	-0.85	0.394	-0.11447	0.045119
USA	-0.2105	0.0535521	(-3.93)***	0	-0.3155	-0.1055
Asia	0.101825	0.1009289	1.01	0.313	-0.09607	0.299718
Global	0.002318	0.0410147	0.06	0.955	-0.0781	0.082736
MutFund	0.54487	0.0402597	(13.53)***	0	0.465932	0.623807
Constant	0.81306	0.0548715	(14.82)***	0	0.705473	0.920647
Sample Size = 3,200		Prob > F = 0.0000		R-squared = 0.1253		Std.Error = .72831

Table 5. Regression results for no-load funds only.

Regression excluding front end load funds

Table 6 shows regression results for funds that exclude front fees only and both front fee as well as back fee. The sample size has been reduced to 9,368; however, the results are similar to the one obtained without excluding front load funds. Banks are cheaper than non-banks, MER reduces as size of fund increases, older funds and poor performing

funds charge higher MER, equity is expensive relative to other asset classes, Canadian funds are not the cheapest and Mutual funds are more expensive than ETFs.

MER	Coef.	Robust Std.Err.	t	P> t	[95% Conf. Interval]	
Bank	-0.53832	0.0269445	(-19.98)***	0	-0.59114	-0.48551
lnAUM	-0.01518	0.0038472	(-3.95)***	0	-0.02273	-0.00764
Age	0.013102	0.0016551	(7.92)***	0	0.009858	0.016346
RiskAdjRet	-0.00589	0.0009971	(-5.91)***	0	-0.00784	-0.00393
Equity	0.08916	0.025721	(3.47)***	0.001	0.038742	0.139579
FixedIncome	-0.48576	0.0296219	(-16.4)***	0	-0.54382	-0.42769
MoneyMarket	-1.59847	0.0386527	(-41.35)***	0	-1.67423	-1.5227
Canada	0.092361	0.03163	(2.92)***	0.004	0.030359	0.154363
USA	-0.05043	0.0453733	-1.11	0.266	-0.13937	0.038517
Asia	0.121317	0.083928	1.45	0.148	-0.0432	0.285834
Global	0.111539	0.0329011	(3.39)***	0.001	0.047046	0.176033
MutFund	1.308154	0.0519829	(25.17)***	0	1.206256	1.410052
Constant	0.967795	0.0586186	(16.51)***	0	0.85289	1.0827
Sample Size = 9,368		Prob > F = 0.0000		R-squared = 0.1794		Std.Error = .89832

Table 6. Regression results excluding front end load funds.

Back load funds were not segregated for regression analysis. It was mentioned before, in Chapter 2 on cost structure of mutual funds that it is assumed that investor has escaped paying back load by keeping their money invested for some specific investment horizon.

Chapter 6

CONCLUSION

The major finding is that it is cheaper to buy funds from banks than non-banking financial institutions. Often when deciding which mutual fund to buy, the major dilemma is whether to purchase it from the bank if an investor already has an account or to buy from wealth management companies, referred to as non-banking financial institutions. The results of this study can help investors make an informed decision while deciding which financial institution to choose from. Banks are often criticized in newspapers for charging higher fees and lacking information transparency (The Globe and Mail, 2014 and CBC, 2013). However, this study favors banks over non-bank financial institutions for charging lower MER except for no load funds. Therefore, banks may use these results to highlight the low cost of their mutual funds. In no-load category, an investor could be indifferent between banks and non-banks. The result that banks are inexpensive holds true for load funds and fund with no front fee at all.

Mutual funds give the benefit of diversification and the complete diversification should include international securities. However, added benefits come with a cost. Funds that invest in international securities are more expensive than funds investing solely in Canadian securities, which in turn are more expensive than funds buying exclusively US securities, so an investor has to balance between diversification and cost. Similarly there is a tradeoff between potential high return offered by equities and their highest cost in the asset class. Markets seldom offer free lunches so an investor has to pay more fees if they want to earn a potentially greater return.

The Canadian mutual fund industry does not offer age advantage. Older funds are charging higher fees which seem to be due to the industry setup in Canada that favors monopolistic competition. Increase in fund size lowers fees charged to investors and ETFs are cheaper than mutual funds.

This study could be further expanded in the future by segregating banks into six major categories that includes RBC, BMO, TD, Scotiabank, CIBC and National Bank; and non-banking financial institutions that includes Vanguard, Fidelity, iShares etc. Better measures of risk-adjusted return such as beta or Treynor ratio could further improve results that allow comparing excess return with relevant benchmarks rather than risk-free securities. One relevant benchmark could be S&P/ TSX composite index for equities and bond index for fixed income. This study utilized return after deducting MER, but another addition could be to run the model with return before deducting MER and then compare the funds.

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