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On the performance of Bank-managed mutual funds: Canadian evidence

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Abstract
Commercial bank involvement in the mutual fund industry has been growing globally for the last few decades. General perception of the performance of these bank-managed funds has been negative. Academic studies of the issue have had varying results. This paper examines the issue in Canada where bank and independent funds have similar overall market shares and thus market power is not an issue. Our results show that after properly accounting for double-clustering, risk-adjusted returns are not significantly different between the two groups. Systematic risk, however, is different for equity funds but not for bond or balanced funds. These findings will be useful for both regulators and individual investors.

Keywords Mutual funds · Fund performance · Commercial banks

JEL classification G20: G21: G23

1 Introduction

Mutual funds have experienced significant growth as a global investment tool over the last several decades. According to the Investment Company Institute, total net assets of all mutual funds grew globally from $US 9.6 trillion in 1998 to $US 46.7 trillion in 2018.[1] Similar growth has occurred in the Canadian mutual fund market with total net assets of $Cdn 398 billion in 2000 growing to $Cdn 1.4 trillion by the end of 2018.[2] Not surprisingly, commercial bank involvement in this market has also increased. Ferreira et al. (2018) find that approximately 40% of mutual funds globally are

[1]2019 Investment Company Fact Book, Investment Company Institute
[2]IFIC Industry Statistics

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sponsored by commercial banks but this percentage varies significantly between countries. In the US, it is closer to 20% (Ferreira et al. 2018) and in France, it is over 80% (Dieu 2015). In Canada, the country of study in this paper, it is approximately 50% (O'Hara 2018). This range of market shares could have important implications for the behaviour and performance of bank-run funds.

Although mutual funds were first introduced in Canada in 1932, the involvement of Canadian chartered banks in the mutual fund industry did not begin until the 1990s. Prior to that time, under Canadian banking laws, chartered banks were not allowed to participate in the securities industry in general and the mutual fund market specifically. This changed with revisions to the Bank Act in 1987 and 1992. By 2005, 31% of all mutual funds in Canada were managed by the Big Six banks and credit unions. This increased to 47.5% by 2015.[3] While much of this growth was internal, the banks have also been active in acquiring independent funds. For instance, National Bank acquired the Altamira family of funds in 2002, Royal Bank purchased PH&N funds in 2008, and Scotiabank bought DundeeWealth (Dynamic family of funds) in 2011. As a result, bank-managed funds are now in a majority position (47.5%) compared to independent funds (42%).

The popular press has a generally negative perception of bank-managed mutual funds. "Bank-run mutual funds tend to perform poorly",[4] "Bank-run funds are poor performers",[5] and "All 29 funds run by banks fail to shine"[6] are just a few examples of headlines regarding bank-run mutual fund performance. Academic literature has generally found similar results. Frye (2001) studied the performance of US bonds funds and found that while performance of bank-run and independent funds was not significantly different, the bank-run funds were more conservative (less risky) in their investments. Dieu (2015) studies this issue using a sample of equity funds from France. In this market, banks dominate the mutual fund market. She finds that bank-run funds significantly underperform non-bank funds.

Given the growth in both the mutual fund market and bank involvement in mutual funds, how bank-run mutual funds perform is an important question. Canada provides an interesting sample to test these issues for several reasons. First, Canadian banks have emerged over the last decade as some of the most respected financial institutions in the world. In 2017, the World Economic Forum ranked the Canadian banking system as the most sound in the world. This reputational factor may influence fund performance. Second, while banks are significant players in the Canadian mutual fund market, they do not dominate as they do in the French market, nor are they niche players as in the US. Previous studies of this topic have tended to focus on markets in which bank-run funds were either a very large or very small part of the overall mutual fund market. Studying this issue in a country where banks and non-banks have approximately equal market share, which removes the impact of market control on performance, may provide a purer measure of performance differences attributable to the fund manager. Finally, Canadian banks have been active acquirers of mutual fund companies over the last 20 years. This provides a unique opportunity to examine funds when they were independent and after they were acquired by a bank to determine what, if any, changes there have been to performance.

This paper extends previous studies by examining the performance of bond, equity, and balanced funds – not just one type of fund. As discussed in Dieu (2015), the different

[3] Banks taking share from independent mutual-fund firms, Globe and Mail., May 25, 2015
[4] Wall Street Journal, August 14, 2000
[5] FT.com, January 9, 2011
[6] The Telegraph, September 11, 2015

investment opportunities for different classes of funds may cause performance differences. By examining all three major types of funds, the impact of class can be isolated. Our paper focuses on both risk and return differences of the mutual funds. Our model simultaneously allows for both risk and return differences between bank and non-bank funds. Finally, we use econometric techniques to account for the two-way clustering (both firm and time) of the data to better account for any possible dependencies in the data.

Our results show that there are, in fact, differences in Canadian bank-managed mutual funds compared to non-bank-managed funds when properly controlling for double-clustering. These differences, however, tend to be in the risk of the portfolio rather than returns. They also depend on the type of fund and the time period examined. These results tend to contrast with those of other studies and thus suggest the need for further research on this topic.

Section 2 of this paper examines past research on this issue. Section 3 provides the testable hypotheses. Section 4 describes the data and methodology for our study. Section 5 has our results, and conclusions are presented in Section 6.

2 Literature review

There are several theoretical reasons why bank-managed mutual funds could perform differently compared to independently run funds. Some of these reasons have to do with bank-specific incentives and some with investor characteristics.

Alexander et al. (2001) find that the financial literacy of bank-managed mutual fund purchasers is significantly less that those using other distribution channels. Holliday (1994) finds that unsophisticated investors focus more on convenience and service rather than performance and that they deem bank funds more trustworthy. Both studies support the idea that bank investors may have different risk profiles than investors in independent funds. If banks are aware of this, they may alter their mutual fund investment strategies to better match investor risk profiles.

When fund management companies are owned by commercial banking groups, fund managers may benefit the bank's lending business at the expense of fund investors. This conflict of interest hypothesis would suggest that bank mutual funds invest in companies to earn other banking business rather than maximize the return of the fund. Golez and Marin (2015) find that bank-managed funds in Spain tend to invest in stocks that support the bank parent (including the bank parent stock itself). Hao and Yan (2012) find US investment banks hold disproportionate amounts of customer stock in mutual funds. This conflict of interest could lead to lower returns by bank-managed mutual funds.

Alternatively, the bank lending business may generate private information about borrowers via credit origination, monitoring, and renegotiation that is beneficial to the affiliated fund manager (information advantage hypothesis). Korkeamaki and Smythe (2004) suggest that given the important role banks have in the Finnish economy as a whole, and the mutual fund market in particular, it is possible for banks to gain preferential access to executives that leads to informational advantages over competitors and therefore to higher risk-adjusted returns.

It is also possible that banks erect "Chinese walls" to prevent communication between the mutual fund and banking divisions, so that funds have no informational advantage or conflict of interest. In this situation, we would not expect to see any significantly different performance in bank-managed mutual funds.

Empirical research on bank mutual fund performance finds varied results. The first major study of this issue is Frye (2001). She examines US bond mutual funds from 1991 to 1999 when US banks controlled approximately 18% of the bond mutual fund market. While Frye does not find any significant difference in risk-adjusted fund performance, she does find evidence that bank funds are more conservative in their investment strategies as measured by a lower beta in the market model for the bank funds.

Matallin-Saez et al. (2012) study Spanish equity and balanced funds during the 1998–2007 timeframe. During this period, bank-managed funds dominated the market with approximately four times the number of funds compared to independent managers. They find evidence that bank-managed funds significantly underperform their non-bank counterparts on a risk-adjusted basis. In the equity fund market, the difference was 1.51% per year and in the balanced fund market it was 1.26% per year.

Dieu (2015) examines the French mutual fund industry between 1999 and 2008. Bank funds control the French mutual fund market with close to 80% market share. She finds that non-bank-managed equity funds outperformed bank-managed mutual funds on a risk-adjusted basis by 11 basis points monthly.

Ferreira et al. (2018) conduct an international study of this issue using 28 countries (including Canada) over the 1997–2010 period. They focus solely on equity mutual funds. Overall, they find that bank-affiliated funds underperform independent funds by 92 basis points per year. The bank funds in the 28 countries of their study have a range of market share of between 1.8% (Israel) and 89.8% (Finland) with an average of 18%. They do not provide individual country results.

While the studies above have tended to find negative relative performance for bank-run mutual funds, they all have samples in which bank funds are either dominant or small players in their country's market. The current paper focuses on a market where market dominance should not play a factor as the bank funds and non-banks funds have approximately the same market share based on net assets. As well, this paper examines bond, balanced, and equity funds to determine if any performance differences are dependent on fund type.

3 Hypotheses

This paper tests two hypotheses. As discussed in the introduction, there are theoretical reasons for bank-managed mutual funds to either over- or under-perform non-bank-managed mutual funds.

Hypothesis 1. Bank-managed mutual funds have no significantly different risk-adjusted returns to comparable non-bank-managed funds.

We test this hypothesis by measuring Jensen's Alpha in the 3-factor Fama and French (1993) model.[7]

While most papers on this topic focus on return differences, it is also possible that the funds have different systematic risk levels. If bank-fund investors are less sophisticated than non-bank-fund investors (as found by Holliday (1994) and Alexander et al.

[7] The one-factor market model was also used. The main results were not different from those reported. These are available upon request from the author.

(2001)), they may be more sensitive to risk. If banks are cognizant of this, they may choose to invest in portfolios with less systematic risk. Alternatively, less sophisticated investors may be less aware of fund risk and thus provide an incentive for banks to invest in riskier portfolios. Higher-risk portfolios should lead to higher long-term returns and thus make these funds more attractive.

Hypothesis 2. Bank-managed mutual funds have no significantly different level of systematic risk compared to comparable non-bank-managed funds.

4 Data and methodology

To create the sample, all actively managed funds included in the December 31, 2004 Globefund.com database were analyzed. This is a comprehensive database of Canadian mutual funds. Using the Canadian Investment Funds Standards Committee classification, those classified as Canadian Bond, Canadian Balanced, and Canadian Equity were kept. Appendix 1 has details of how each of these fund types is classified. Only actively managed funds are included in the sample as performance differences for index-related funds should be small and less related to manager type.

Chen et al. (2004) find that fund performance is related to the size of assets under management (AUM). To remove niche funds and less actively traded funds, only those with in excess of $250 million AUM were kept. In order to be included in the sample, the fund must have had at least 24 months of returns data. Often, funds changed their name or merged with other funds. In these situations, the fund remained in the sample as long as the new return data were available. This provides a total sample of 174 funds.

Monthly returns net of fees for all mutual funds were collected from Bloomberg from January 2005 until July 2015, a total of 126 months. For months that had missing data, additional information was collected from the monthly Globefund.com reports. All returns were adjusted by the appropriate benchmark. The benchmark for bond funds is the FTSE TMX Canada Universe, for equity funds the S&P TSX Composite Index. For the balanced funds, the benchmark is based on 70% of the S&P TSX Composite Index and 30% of the FTSE TMX Canada Universe. The risk-free rate is the 30-day Canadian T-bill rate.

Each fund was classified as "bank affiliated" or "non-bank affiliated" based on name and the ultimate management of the fund. One issue that complicates this classification is that banks have been very active in acquiring independent funds. If the acquisition of the independent fund occurred prior to the sample period, the fund is classified as bank-owned. If the acquisition occurred during the sample period, the fund is classified as independent prior to the acquisition and bank-owned subsequently.[8] Table 1 describes the distribution of the sample.

The model used to test our hypothesis is based on the 3-factor Fama-French model. Many studies of mutual fund performance have found that fund characteristics can impact fund returns. Elton et al. (2012) and Chen et al. (2004) find that performance is

[8] In discussions with bank mutual funds salespeople, the authors were told that these funds were considered the same as the bank-branded funds. As a robustness test, these funds were also removed from the sample and the results were not materially impacted.

Table 1 Sample of Bank- and Non-Bank-Affiliated Funds

		Bank-Affiliated	Non-Bank-Affiliated	Total
Total Sample	# of Funds	59	115	174
	# of Monthly Observations	6626	13,509	20,135
Balanced Funds	# of Funds	24	40	64
	# of Monthly Observations	2721	4802	7523
Equity Funds	# of Funds	21	59	80
	# of Monthly Observations	2224	6921	9145
Bond Funds	# of Funds	14	16	30
	# of Monthly Observations	1681	1786	3467

This table presents number of funds classified as bank-affiliated or non-bank-affiliated and the total number of monthly return observations for the Balanced, Equity, and Bond funds

related to fund size. Extending this concept, Pollet and Wilson (2008) find a positive relationship between fund family size and fund performance. Ferreira et al. 2012 show that fund age is negatively related to its performance. There is a long history of studies on the relationship between fees and performance. Gruber (1996) finds that fees and performance are inversely related; however, Grinblatt and Titman (1994) find no such relationship.

Table 2 shows that there are significant differences in the fund characteristics between the bank and non-bank funds. To account for the possible effects described in the above papers, our model is run controlling for these factors. Specifically,

$$\begin{aligned} R_{i,t} - R_{f,t} = {} & \alpha_i + \beta_1 MktExcess_t + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 Bank_t \\ & + \beta_5 (MktExcess{*}Bank)_t + \beta_6 Size_t + \beta_7 FamilySize_t + \beta_8 Age_t \\ & + \beta_9 MER_t + \beta_{10} Load + \varepsilon_{i,t} \end{aligned} \quad (1)$$

Where,

$$R_{i,t} = monthly\ return\ (net\ of\ fees) of\ mutual\ fund$$

$$R_{f,t} = monthly\ return\ on\ 3\ month\ Canadian\ T{-}bill$$

$$MktExcess_t = R_{(Bench,t)} - R_{f,t}$$

- $R_{(Bench,\ t)}$ = the monthly return on benchmark market.For bond funds, the FTSE TMX Canada Universe, for equity funds the S&P TSX Composite Index, and for balanced funds, 70% of the S&P TSX Composite Index and 30% of the FTSE TMX Canada Universe.

- SMB_t = is the equal-weight average of the returns on the three smallest stock portfolios for North America minus the average of the returns on the three biggest stock portfolios. Obtained from Ken French's website.

- HML_t = is the equal-weight average of the returns for the two highest B/M portfolios for North America minus the average of the returns for the two lowest B/M portfolios. Obtained from Ken French's website.
- $Bank_t$ = Dummy variable that takes the value of 1 for bank-managed mutual funds, 0 for non-bank funds.
- $Size_t$ = Assets under management ($million)
- $FamilySize_t$ = Total assets under management ($million) of underlying fund manager. This is proxied by the total assets under management in the sample for the underlying manager in the month.
- Age_t = number of days since the inception of the fund
- MER_t = total expense ratio of the fund
- Load = dummy variable that takes the value of 1 if the fund has a load, 0 if it is a no-load fund.

Table 2 Summary Statistics

Panel (A) Bank vs Non-bank				
Total Sample	Average Monthly Return (%)	.443	.450	.007
	Average Funds Under Management ($ million)	2054.40	1166.86	−890.54***
	Average Fund Family Size ($ million)	13,727.9	5036.47	−8691.43***
	Average MER (%)	1.83	2.08	.25***
	% that are load funds	11.86	76.52	64.65***
	Average age as of Jan 2005 (years)	12.9	12.7	−.145
	Standard Deviation of Monthly Returns (%)	2.53	.2.98	.455**
	Sharpe Ratio	.210	.182	−.029**
Balanced Funds	Average Monthly Return (%)	.397	.418	.022
	Average Funds Under Management ($ million)	2642.24	1258.59	−1383.65***
	Average MER (%)	1.92	2.05	.13***
	% that are load funds	12	75	62***
	Average age as of Jan 2005 (years)	11.06	11.08	.02
	Standard Deviation of Monthly Returns (%)	2.06	2.23	0.17
	Sharpe Ratio	.196	.192	−.004
Equity Funds	Average Monthly Return (%)	.564	.499	−.065
	Average Funds Under Management ($ million)	976.49	1022.03	45.53**
	Average MER (%)	2.13	2.30	.17***
	% that are load funds	0	62	62***
	Average age as of Jan 2005 (years)	11.7	13.7	2.04***
	Standard Deviation of Monthly Returns (%)	4.00	4.03	−.03
	Sharpe Ratio	.139	.131	−.008
Bond Funds	Average Monthly Return (%)	.357	.340	−.017
	Average Funds Under Management ($ million)	2532.63	1463.21	−1069.42***
	Average MER (%)	1.26	1.26	.00
	% that are load funds	19	81	62***
	Average age as of Jan 2005 (years)	17.4	13.4	−4.01***
	Standard Deviation of Monthly Returns (%)	1.12	.99	−.13

Table 2 (continued)

	Sharpe Ratio	.330	.349	.019
Panel (B) – Internal vs Acquired				
Total Sample	Average Monthly Return (%)	.452	.402	.050
	Average Funds Under Management ($ million)	2299.05	1063.01	1236.03***
	Average MER (%)	1.87	1.62	.24***
	% that are load funds	0	46.66	−46.66***
	Average age as of Jan 2005 (years)	12.40	14.75	−2.35***
	Standard Deviation of Monthly Returns (%)	2.44	2.76	−.31
	Sharpe Ratio	.216	.188	.027
Balanced Funds	Average Monthly Return (%)	.405	.357	.048
	Average Funds Under Management ($ million)	3065.00	674.06	2390.94***
	Average MER (%)	1.97	1.71	.25***
	% that are load funds	0	60	−60***
	Average age as of Jan 2005 (years)	11.91	7.15	4.76***
	Standard Deviation of Monthly Returns (%)	2.00	2.28	−.27*
	Sharpe Ratio	.204	.157	.046
Equity Funds	Average Monthly Return (%)	.604	.442	.161
	Average Funds Under Management ($ million)	1133.03	493.91	639.12***
	Average MER (%)	2.17	1.99	.17***
	% that are load funds	0	57.14	−57.14***
	Average age as of Jan 2005 (years)	10.36	15.62	−5.26***
	Standard Deviation of Monthly Returns (%)	4.08	3.83	.24
	Sharpe Ratio	.146	.115	.030
Bond Funds	Average Monthly Return (%)	.347	.401	−.053
	Average Funds Under Management ($ million)	2475.23	2813.31	−338.08*
	Average MER (%)	1.36	.80	.55***
	% that are load funds	0	0	0
	Average age as of Jan 2005 (years)	15.64	25.70	−10.05***
	Standard Deviation of Monthly Returns (%)	1.13	1.07	.06
	Sharpe Ratio	.320	.375	−.055

This table presents summary statistics on monthly return, size of fund, size of fund family, management expense ratio, % of no-load funds, standard deviation of returns, and the Sharpe Ratio for the entire sample and the sub-samples based on fund type. T-tests of difference of means between bank-managed and non-bank-managed funds are also included. Panel (A) compares bank-managed funds versus non-bank-managed funds. Panel (B) compares bank internal funds and funds acquired by banks

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Risk-adjusted performance differences are measured by the bank dummy variable. This dummy variable captures any difference (positive or negative) in alpha return for bank-managed mutual funds. A systematic risk interactive dummy variable is added to the model to capture any incremental difference in systematic risk between the two types of funds.

Our sample contains panel data with 174 fund observations over 126 months. This can lead to two types of dependence – time dependence and fund/firm dependence. If residuals

are correlated for either (or both) of these reasons, the regression coefficients will be unbiased, but the standard errors may be biased. The Fama and MacBeth (1973) method that is commonly used in studies of this type only addresses the time dependence. Petersen (2009) finds that 42% of panel data papers in the *Journal of Finance*, *Journal of Financial Economics*, and *Review of Financial Studies* published between 2001 and 2004 did not adjust for possible dependencies in the panel data, which can result in biased standard errors. He compares the performance of several different standard error estimation methods used in previous studies such as White's heteroskedasticity-robust standard errors, single clustering (by firm or by time) and double clustering (by both firm and time). He finds the performance of different methods depends on the forms of residual dependence. For example, in the presence of a firm effect, the double-clustered standard errors are unbiased and can produce correctly sized confidence intervals while those estimated by OLS, White, or Fama-MacBeth method are biased.

Thompson (2011) extends this analysis and finds these biases are more pronounced when the number of firms and time periods are similar (as in our case – 174 funds, 126 months). He recommends applied researchers use double-clustering and provides a simple methodology to correct for both time and fund effects. We incorporate these adjustments in our analysis.

5 Results

Table 2 Panel (A) presents summary statistics for the bank and non-bank fund returns. For the total sample, the average monthly return for bank-managed funds is 0.443% while it is 0.450% for non-bank-managed funds. This difference is not statistically different. For Balanced and Bond funds, the non-bank-managed funds outperformed the bank-managed funds. Bank funds outperformed non-bank funds for Equity funds. None of these differences, however, are significant.

It is not surprising, given the dominance of banks in the Canadian financial sector, that bank-managed funds are significantly bigger than non-bank funds – in total by $890 million (significant at the 1% level). Bank Balanced and Bond funds are significantly bigger than non-bank funds. Non-bank Equity funds are slightly (although statistically significantly) larger than bank Equity funds. The bank family of funds is also significantly larger than non-bank families.

Fund fees differ between the bank and non-bank funds. Overall, bank funds have significantly lower MERs and a smaller portion of funds that are load-funds. This is consistent with Chandler and Kaur (2019). This relationship holds for all types of funds except for bond funds where there is no significant difference in MER. Overall, the average age of funds is not different between the two groups, but the non-bank equity funds are older than the bank equity funds and the bank bond funds are older than non-bank bond funds.

The standard deviation of returns of non-banks is significantly larger than bank funds for the total sample. Interestingly, none of the individual fund-type standard deviations was significantly different between bank and non-bank funds. This seemingly unusual result is due to the smaller number of observations in the sub-groups. The smaller number of observations leads to higher standard deviations and thus less

significance. Similarly, the Sharpe ratio for bank funds in the total sample was significantly higher but not significantly different for the specific fund types.

As discussed above, banks have been active in acquiring non-bank funds. Panel (B) of Table 2 compares internal bank funds to the funds they have acquired (both prior to and during our sample period). Overall, there is no difference in the risk (i.e. monthly standard deviation) or return (i.e. average monthly return and Sharpe ratio) between these two groups. This holds for each of the individual fund types except for monthly standard deviation of the balanced funds where the bank-acquired funds have a marginally significant (at the 10% level) higher standard deviation.

The two groups of funds, however, do have different characteristics. The internal bank funds are significantly larger except for bond funds. Internal funds have higher MERs but a lower portion of load funds. The internal funds tend to be younger than the acquired funds except for balanced funds.

While the summary statistics provide interesting information about the funds and their characteristics, we need to use risk-adjusted returns to test our hypotheses. Table 3 shows the results of the OLS regressions of our model. Independent variables are added sequentially to determine their impact on the results. Panel (A) is for the entire sample of funds while Panels (B)–(D) are for the individual fund types. Regression (1) is simply the 3-factor model for the entire sample without distinguishing between bank and non-bank funds. The significantly negative Alpha of 0.074% per month is consistent with previous research as far back as Sharpe (1966). It indicates that, net of fees, mutual funds are not able to beat the market on a risk-adjusted basis.

Regression (2) adds the dummy variable for bank-managed funds to determine if there is any difference in alpha for these bank funds. The significant value of positive 0.038% per month in the total sample suggests that bank funds outperform non-bank funds by approximately 46 basis point annually. This would support the theory that banks can use their informational advantage to earn higher returns on their mutual funds. Regression (2), however, restricts both bank and non-bank funds to having the same level of systematic risk. By allowing for different levels of systematic risk between bank and non-bank funds (as in regression (3)), this alpha difference disappears. These results hold in regression (4) when all other control variables are introduced.

Equity funds in Panel (B) have similar results to the total sample. That is, overall there is a negative alpha associated with all funds, but bank-managed funds have a significantly higher monthly alpha (+.089). This result is contrary to the findings of Dieu (2015) and Ferreira et al. (2018). This difference, however, disappears when accounting for differing systematic risk. Bank equity funds have a significantly higher systematic risk of 0.0906. Again, the results are consistent with the introduction of control variables in regression (4).

Panel (C) shows the results for bond funds. Overall alpha is negative, consistent with Blake et al. (1993). There is no difference in alpha or systematic risk between bank and non-bank funds. While not significant, the difference in the systematic risk of the bond funds is positive for bank funds, which is the opposite finding to Frye (2001). Adding control variables in regression (4) does not alter these results.

In Panel (D), the results for Balanced funds are slightly different. While overall alpha is still negative, there is no difference for bank-managed funds (Bank is not significant). And while the systematic risk dummy is significant, it is lower for Bank

funds (−0.0425). In other words, bank balanced funds have lower levels of systematic risk compared to non-bank funds. This finding holds in regression (4) with control variables.

Overall, Table (3) demonstrates that there are differences between bank-managed and non-bank-managed funds, but these differences are associated with systematic risk rather than return. These differences vary based on the type of fund being examined and generally are not consistent with previous research. These differences, however, may be due to statistical issues as will be tested next.

Table 3 treats the data as pooled. Table (4) uses the Thompson (2011) method to capture potential dependencies in the data both over time and between firms. The regressions of Table (3) are repeated with these adjustments.

Panel (A) of Table (4) contains the results for the total sample. Interestingly, with these clustering adjustments while the alpha is still negative, it is no longer at a significant level. In fact, for the total sample there is no longer any significant difference between risk or return of the bank-managed funds and the non-bank funds. This holds for all model specifications. Very few of the previous studies on this topic adjusted for two-way clustering and these results suggest that they may have found different results had they done so.

Balanced funds (Panel (D)) have similar results to the overall sample, that is, no significant difference between the systematic risk or alpha return between bank-managed and non-bank managed funds and no overall significant alpha. Bond funds (Panel (C)) have a negative overall alpha (except for the full model), but no significant difference in returns for bank funds. Equity funds (Panel (B)), however, do have a significantly higher level of systematic risk. This raises the question of why banks would choose riskier portfolios for their equity funds but not for balanced or bank funds. One possible reason may come from the summary statistics in Table 2. The average size of bank-managed funds by assets are much larger in both the balanced and bond fund areas. In equity funds, however, bank-managed funds were significantly smaller than their non-bank competitors. If banks wish to increase their assets under management for equity funds, they may invest in riskier portfolios to earn higher returns and attract more investors. This is a possible area for future research.

Overall, Table (4) suggests that after controlling for possible dependencies in the data, bank-run funds (with the exception of equity funds) are not statistically different from non-bank funds in terms of risk-adjusted performance or systematic risk. This again contradicts most of the previous studies on this issue. While it is hard to generalize based on the results of one country (i.e. Canada), it does appear that the market share may impact fund performance. This is again a possible area for future research.

Canadian banks have been active acquirors of independent mutual funds. This provides us a unique ability to test our hypotheses by examining any change in fund performance post–bank acquisition. Unfortunately, during our sample period, only eight funds were acquired by banks (2 bond, 2 balanced, and 4 equity funds.) This limits the statistical analysis we can perform but does still allow us an opportunity for a robustness test of the results from our other tests.

Panel (A) of Table 5 provides summary statistics of funds one year prior and one year after bank acquisition. Due to the small number of funds, only the total sample results are presented. Raw monthly returns are lower after acquisition (although not

Table 3 OLS Regression Results

Panel (A) Total Sample	(1) Excess Fund Return	(2) Excess Fund Return	(3) Excess Fund Return	(4) Excess Fund Return
MktExcess	0.8218***	0.8218***	0.8177***	0.8187***
	(0.0065)	(0.0065)	(0.0079)	(0.0081)
SMB	0.0666***	0.0665***	0.0666***	0.0668***
	(0.0063)	(0.0063)	(0.0063)	(0.0064)
HML	0.0427***	0.0427***	0.0428***	0.0462***
	(0.0063)	(0.0063)	(0.0063)	(0.0064)
Bank		0.0375*	0.0311	0.0419
		(0.0214)	(0.0230)	(0.0346)
MktExcess * Bank			0.0147	0.0138
			(0.0125)	(0.0126)
Size				−0.0000
				(0.0000)
FamilySize				−0.0000*
				(0.0000)
MER				−0.0264
				(0.0240)
Load				−0.0074
				(0.0390)
Age				0.0000***
				(0.0000)
Alpha	−0.0743***	−0.0867***	−0.0848***	−0.1494***
	(0.0120)	(0.0156)	(0.0158)	(0.0489)
Obs.	20,135	20,135	20,135	19,718
R-squared	0.7406	0.7406	0.7407	0.7419
Panel (B) Equity Funds	(1) Excess Fund Return	(2) Excess Fund Return	(3) Excess Fund Return	(4) Excess Fund Return
MktExcess	0.8683***	0.8683***	0.8470***	0.8486***
	(0.0088)	(0.0088)	(0.0103)	(0.0104)
SMB	0.1486***	0.1487***	0.1488***	0.1487***
	(0.0125)	(0.0125)	(0.0124)	(0.0125)
HML	0.0575***	0.0575***	0.0571***	0.0601***
	(0.0119)	(0.0119)	(0.0119)	(0.0120)
Bank		0.0890**	0.0421	0.0790
		(0.0422)	(0.0441)	(0.0665)
MktExcess * Bank			0.0906***	0.0875***
			(0.0161)	(0.0161)
Size				−0.0000**
				(0.0000)
FamilySize				−0.0000
				(0.0000)

Table 3 (continued)

MER				0.0019
				(0.0531)
Load				−0.0049
				(0.0694)
Age				0.0000***
				(0.0000)
Alpha	−0.0971***	−0.1187***	−0.1075***	−0.2069*
	(0.0222)	(0.0265)	(0.0268)	(0.1133)
Obs.	9145	9145	9145	9071
R-squared	0.7621	0.7622	0.7636	0.7643
Panel (C) Bond Funds	(1) Excess Fund Return	(2) Excess Fund Return	(3) Excess Fund Return	(4) Excess Fund Return
MktExcess	0.9386***	0.9385***	0.9244***	0.9148***
	(0.0139)	(0.0140)	(0.0165)	(0.0155)
SMB	0.0102**	0.0102**	0.0102**	0.0112**
	(0.0051)	(0.0051)	(0.0051)	(0.0052)
HML	0.0134**	0.0135**	0.0135***	0.0148***
	(0.0052)	(0.0052)	(0.0052)	(0.0053)
Bank		0.0156	0.0079	0.0015
		(0.0191)	(0.0195)	(0.0303)
MktExcess * Bank			0.0289	0.0391
			(0.0274)	(0.0271)
Size				0.0000
				(0.0000)
FamilySize				0.0000
				(0.0000)
MER				−0.0758***
				(0.0197)
Load				0.0088
				(0.0362)
Age				0.0000
				(0.0000)
Alpha	−0.0488***	−0.0563***	−0.0527***	0.0056
	(0.0097)	(0.0115)	(0.0112)	(0.0426)
Obs.	3467	3467	3467	3401
R-squared	0.7581	0.7582	0.7583	0.7586
Panel (D) Balanced Funds	(1) Excess Fund Return	(2) Excess Fund Return	(3) Excess Fund Return	(4) Excess Fund Return
MktExcess	0.6586***	0.6586***	0.6742***	0.6700***
	(0.0072)	(0.0072)	(0.0095)	(0.0096)
SMB	0.0377***	0.0377***	0.0375***	0.0374***
	(0.0076)	(0.0076)	(0.0076)	(0.0078)
HML	0.0532***	0.0532***	0.0533***	0.0589***

Table 3 (continued)

	(0.0080)	(0.0080)	(0.0080)	(0.0081)
Bank		−0.0084	0.0105	0.0333
		(0.0264)	(0.0276)	(0.0410)
MktExcess * Bank			−0.0425***	−0.0380***
			(0.0127)	(0.0129)
Size				0.0000
				(0.0000)
FamilySize				−0.0000
				(0.0000)
MER				−0.0299
				(0.0297)
Load				0.0187
				(0.0477)
Age				0.0000***
				(0.0000)
Alpha	−0.0319**	−0.0289	−0.0360*	−0.2053***
	(0.0141)	(0.0185)	(0.0188)	(0.0665)
Obs.	7523	7523	7523	7246
R-squared	0.7220	0.7220	0.7226	0.7268

This table represents the results of OLS regressions of monthly excess fund returns (Rm,t − Rf) on market factors, control variables, and dummy variables for bank-managed funds. Panel (A) is for the entire sample, Panel (B) is for equity funds, Panel (C) bond funds, and Panel (D) balanced funds

Standard errors are in parenthesis

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

significantly different) and standard deviation of these returns is higher. These raw return results, however, may be misleading. Five of the eight fund acquisitions occurred in 2008. This means that the 1-year-prior results are from before the financial crisis while the 1-year-post results are during/after the crisis. To control for the impact of the financial crisis, fund alphas are compared.

Abnormal return (as captured by alpha) is significantly higher for the funds post-acquisition. So too is the standard deviation of these alphas. This would imply that the risk/return profile of the funds changes after banks take control. MER expenses do not change significantly. While the funds are smaller after acquisition, this is likely more attributable to the financial crisis than to any actions of the banks. While it is difficult to draw too many conclusions from such a small sample, there is no evidence from these results that bank ownership of funds affects performance negatively.

Panel (B) runs the previous regressions (accounting for 2-way clustering) on the acquired fund from 1 year prior to 1 year after acquisition. In these regressions, the bank dummy represents the fund after acquisition. It is not significant in any of the model specifications. This suggests that the performance of the funds did not change in the short-run after being acquired by banks. Panel (C) uses the entire sample period and finds that the bank dummy is positively significant. This suggests that over a longer period, banks were able to improve the return performance of the funds they acquired. As

Table 4 Two-way Clustering Results

Panel (A) Total Sample	(1) Excess Fund Return	(2) Excess Fund Return	(3) Excess Fund Return	(4) Excess Fund Return
MktExcess	0.8218***	0.8218***	0.8177***	0.8187***
	(0.0271)	(0.0270)	(0.0302)	(0.0301)
SMB	0.0666**	0.0665**	0.0666**	0.0668**
	(0.0300)	(0.0300)	(0.0300)	(0.0300)
HML	0.0427	0.0427	0.0428	0.0462
	(0.0331)	(0.0331)	(0.0330)	(0.0325)
Bank		0.0375	0.0311	0.0419
		(0.0322)	(0.0302)	(0.0442)
MktExcess * Bank			0.0147	0.0138
			(0.0366)	(0.0365)
Size				−0.0000
				(0.0000)
FamilySize				−0.0000
				(0.0000)
MER				−0.0264
				(0.0412)
Load				−0.0074
				(0.0634)
Age				0.0000***
				(0.0000)
Alpha	−0.0743	−0.0867	−0.0848	−0.1494
	(0.0542)	(0.0620)	(0.0621)	(0.0931)
Obs.	20,135	20,135	20,135	19,718
R-squared	0.7406	0.7406	0.7407	0.7419
Panel (B) Equity Funds	(1) Excess Fund Return	(2) Excess Fund Return	(3) Excess Fund Return	(4) Excess Fund Return
MktExcess	0.8683***	0.8683***	0.8470***	0.8486***
	(0.0301)	(0.0301)	(0.0339)	(0.0337)
SMB	0.1486***	0.1487***	0.1488***	0.1487***
	(0.0400)	(0.0400)	(0.0399)	(0.0399)
HML	0.0575	0.0575	0.0571	0.0601
	(0.0464)	(0.0463)	(0.0464)	(0.0461)
Bank		0.0890	0.0421	0.0790
		(0.0635)	(0.0506)	(0.0821)
MktExcess * Bank			0.0906**	0.0875**
			(0.0385)	(0.0381)
Size				−0.0000
				(0.0000)
FamilySize				−0.0000
				(0.0000)

Table 4 (continued)

MER				0.0019
				(0.0798)
Load				−0.0049
				(0.1239)
Age				0.0000**
				(0.0000)
Alpha	−0.0971	−0.1187	−0.1075	−0.2069
	(0.0698)	(0.0767)	(0.0770)	(0.1744)
Obs.	9145	9145	9145	9071
R-squared	0.7621	0.7622	0.7636	0.7643
Panel (C) Bond Funds	(1) Excess Fund Return	(2) Excess Fund Return	(3) Excess Fund Return	(4) Excess Fund Return
MktExcess	0.9386***	0.9385***	0.9244***	0.9148***
	(0.0489)	(0.0489)	(0.0644)	(0.0580)
SMB	0.0102	0.0102	0.0102	0.0112
	(0.0130)	(0.0130)	(0.0130)	(0.0132)
HML	0.0134	0.0135	0.0135	0.0148
	(0.0143)	(0.0143)	(0.0143)	(0.0143)
Bank		0.0156	0.0079	0.0015
		(0.0226)	(0.0298)	(0.0369)
MktExcess * Bank			0.0289	0.0391
			(0.0802)	(0.0750)
Size				0.0000*
				(0.0000)
FamilySize				0.0000
				(0.0000)
MER				−0.0758***
				(0.0108)
Load				0.0088
				(0.0208)
Age				0.0000
				(0.0000)
Alpha	−0.0488**	−0.0563**	−0.0527**	0.0056
	(0.0239)	(0.0254)	(0.0264)	(0.0592)
Obs.	3467	3467	3467	3401
R-squared	0.7581	0.7582	0.7583	0.7586
Panel (D) Balanced Funds	(1) Excess Fund Return	(2) Excess Fund Return	(3) Excess Fund Return	(4) Excess Fund Return
MktExcess	0.6586***	0.6586***	0.6742***	0.6700***
	(0.0312)	(0.0312)	(0.0356)	(0.0353)
SMB	0.0377	0.0377	0.0375	0.0374
	(0.0335)	(0.0335)	(0.0335)	(0.0333)
HML	0.0532	0.0532	0.0533	0.0589

Table 4 (continued)

	(0.0405)	(0.0405)	(0.0405)	(0.0394)
Bank		−0.0084	0.0105	0.0333
		(0.0285)	(0.0275)	(0.0406)
MktExcess * Bank			−0.0425	−0.0380
			(0.0341)	(0.0345)
Size				0.0000
				(0.0000)
FamilySize				−0.0000
				(0.0000)
MER				−0.0299
				(0.0321)
Load				0.0187
				(0.0532)
Age				0.0000***
				(0.0000)
Alpha	−0.0319	−0.0289	−0.0360	−0.2053
	(0.0632)	(0.0661)	(0.0660)	(0.1360)
Obs.	7523	7523	7523	7246
R-squared	0.7220	0.7220	0.7226	0.7268

This table represents the results of two-way clustering regressions (based on Thompson (2011) of monthly excess fund returns (Rm,t − Rf) on market factors, control variables, and dummy variables. Panel (A) is for the entire sample, Panel (B) is for equity funds, Panel (C) bond funds, and Panel (D) balanced funds

mentioned above, the small number of acquisitions limits the generalizability of any conclusions that can be drawn, but the results are not consistent with bank ownership having a negative impact on return performance.

During our sample period, the world endured the global financial crisis (GFC) of 2008–2009. Although the GFC did not impact Canada as much as the US and other countries, it did influence Canadian markets (and thus mutual funds) and Canadian investors. The TSX-S&P Index dropped 35% in 2008.[9] The Index bottomed out on March 9, 2009 at 7479. By the end of 2009, it had climbed back to 11,746.[10] It is possible that the effect of the GFC changed the management of bank-managed mutual funds (and indeed all funds). Table 6 explores this possibility. Since previous results have suggested the need for 2-way clustering, this method is applied in Table 6.

For the entire sample, there is no significant difference in bank-managed fund alpha or systematic risk either before or after the GFC. Interestingly, the overall alpha is negative before but insignificant after the crisis.

For balanced funds, there is no significant difference in alpha either before or after the crisis between bank and non-bank funds. Bank-managed balanced funds did have significantly less systematic risk after the crisis compared to non-bank-managed funds. This suggests that banks invested in less risky balanced portfolios after the crisis perhaps to provide less volatility for their investors.

[9] https://www.cbc.ca/news/business/tsx-down-35-in-2008-1.814643 retrieved Dec. 16, 2019
[10] https://www.cbc.ca/news/business/tsx-gains-30-7-in-2009-1.827732 retrieved Dec. 16, 2019

Table 5 Funds that have been Acquired by Banks

Panel (A)			
	1 year Prior to Acquisition	1 year Post Acquisition	Difference
Monthly Return (%)	.111	−.657	.768
Standard Deviation of Monthly Returns (%)	2.58	5.74	−3.16***
Monthly Alpha	−.648	−.197	−.451*
Standard Deviation of Monthly Alpha	1.42	1.97	−.55***
MER (%)	1.12	1.14	.02
Funds under Management ($Million)	1698.02	1314.38	383.63**

	Panel (B) – One year pre/post			Panel (C) – Total Sample		
	(1)	(2	(3)	(1)	(2)	(3
	Excess Fund Return	Excess Fund Return	Excess Fund Return	Excess Fund Return	Excess Fund Return	Excess Fund Return
MktExcess	0.8858***	0.7550***	0.8096***	0.9868***	1.0647***	1.0748***
	(0.0621)	(0.1008)	(0.0903)	(0.0879)	(0.1663)	(0.1685)
SMB	0.2338**	0.2502**	0.2390**	0.0653	0.0576	0.0567
	(0.1105)	(0.1145)	(0.1062)	(0.0439)	(0.0468)	(0.0469)
HML	0.1505***	0.1380***	0.1407***	0.0230	0.0294	0.0315
	(0.0578)	(0.0525)	(0.0496)	(0.0477)	(0.0465)	(0.0459)
Bank	0.3213	0.2547	0.5225	0.2726*	0.3427**	0.4109**
	(0.3476)	(0.3520)	(0.3169)	(0.1462)	(0.1474)	(0.1988)
MktExcess * Bank		0.1548	0.1296		−0.1390	−0.1305
		(0.1257)	(0.1143)		(0.1745)	(0.1748)

Table 5 (continued)

Size			0.0001			0.0000
			(0.0001)			(0.0000)
MER			−0.1398			0.1229
			(0.2524)			(0.1145)
Age			0.0000			0.0000*
			(0.0000)			(0.0000)
Alpha	−0.4755*	−0.4017	−0.6841	−0.2174*	−0.2662**	−0.6387**
	(0.2515)	(0.2439)	(0.4803)	(0.1119)	(0.1274)	(0.2726)
Obs.	192	192	182	1008	1008	982
R-squared	0.8602	0.8633	0.8757	0.7964	0.8001	0.8039

This table represents the difference pre/post acquisition of independent mutual fund by a bank. Panal (A) contains summary statistics while Panel (B) has two-way clustering regressions (based on Thompson (2011) for one year prior to one year after acquisition of monthly excess fund returns (Rm,t − Rf) on market factors, control variables, and dummy variable for bank-managed funds (1 if bank managed, 0 otherwise) and bank systematic risk (BankDum * (Rm,t − Rf). Panel (C) contains the cluster regression for the entire sample period

Standard errors are in parenthesis

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 6 Two-way Clustering Results – Pre and Post Financial Crisis

Panel (A) – Total Sample	(1) Pre March 2009	(2) Post March 2009	(3) Pre March 2009	(4) Post March 2009	(5) Pre March 2009	(6) Post March 2009
MktExcess	0.8150***	0.8253***	0.8067***	0.8264***	0.8077***	0.8279***
	(0.0312)	(0.0422)	(0.0346)	(0.0462)	(0.0345)	(0.0461)
SMB	0.0312	0.0878**	0.0310	0.0878**	0.0312	0.0886**
	(0.0521)	(0.0374)	(0.0520)	(0.0374)	(0.0522)	(0.0376)
HML	0.0645	0.0152	0.0645	0.0152	0.0646	0.0181
	(0.0438)	(0.0374)	(0.0438)	(0.0374)	(0.0434)	(0.0373)
Bank	0.0740	−0.0072	0.0771	−0.0044	0.1061	−0.0432
	(0.0512)	(0.0445)	(0.0498)	(0.0451)	(0.0716)	(0.0588)
MktExcess * Bank			0.0309	−0.0035	0.0271	−0.0025
			(0.0394)	(0.0369)	(0.0388)	(0.0376)
Size					0.0000***	−0.0000*
					(0.0000)	(0.0000)
FamilySize					−0.0000**	−0.0000
					(0.0000)	(0.0000)
MER					−0.0534	−0.0099
					(0.0706)	(0.0481)
Load					0.0474	−0.0889
					(0.1194)	(0.0658)
Age					0.0000	0.0000
					(0.0000)	(0.0000)
Alpha	−0.3081***	0.0666	−0.3089***	0.0657	−0.2540**	0.1057
	(0.0976)	(0.0777)	(0.0973)	(0.0788)	(0.1191)	(0.1066)
Obs.	8256	11,879	8256	11,879	8182	11,536

Table 6 (continued)

R-squared	0.7703	0.6968	0.7705	0.6968	0.7714	0.6981
Panel (B) – Equity Funds						
MktExcess	0.8693***	0.8609***	0.8432***	0.8445***	0.8437***	0.8469***
	(0.0344)	(0.0428)	(0.0385)	(0.0472)	(0.0386)	(0.0467)
SMB	0.0931	0.1815***	0.0933	0.1815***	0.0933	0.1824***
	(0.0660)	(0.0503)	(0.0659)	(0.0502)	(0.0672)	(0.0502)
HML	0.0619	0.0455	0.0616	0.0457	0.0598	0.0473
	(0.0616)	(0.0516)	(0.0616)	(0.0515)	(0.0611)	(0.0518)
Bank	0.1083	0.0448	0.1332	−0.0196	0.1894	−0.0546
	(0.1156)	(0.0810)	(0.0891)	(0.0800)	(0.1189)	(0.1073)
MktExcess * Bank			0.1160**	0.0656*	0.1090**	0.0655*
			(0.0451)	(0.0384)	(0.0438)	(0.0390)
Size					0.0001**	−0.0001***
					(0.0000)	(0.0000)
FamilySize					−0.0000	0.0000
					(0.0000)	(0.0000)
MER					0.0406	−0.0415
					(0.1418)	(0.0772)
Load					0.0223	−0.0585
					(0.2252)	(0.1251)
Age					−0.0000	0.0000
					(0.0000)	(0.0000)
Alpha	−0.3702***	0.0633	−0.3746***	0.0805	−0.5057**	0.1840
	(0.1203)	(0.1023)	(0.1193)	(0.1043)	(0.2573)	(0.2041)
Obs.	3769	5376	3769	5376	3753	5318

Table 6 (continued)

R-squared	0.7916	0.7175	0.7939	0.7182	0.7948	0.7192
Panel (C) – Bond Funds						
MktExcess	0.8880***	0.9634***	0.8860***	0.9448***	0.8858***	0.9263***
	(0.0660)	(0.0429)	(0.0778)	(0.0591)	(0.0782)	(0.0495)
SMB	0.0080	0.0112	0.0080	0.0111	0.0082	0.0115
	(0.0194)	(0.0102)	(0.0194)	(0.0102)	(0.0197)	(0.0104)
HML	0.0084	0.0159	0.0085	0.0159	0.0091	0.0164
	(0.0207)	(0.0171)	(0.0207)	(0.0171)	(0.0209)	(0.0171)
Bank	−0.0391	0.0330	−0.0397	0.0200	−0.0392	−0.0179
	(0.0457)	(0.0391)	(0.0525)	(0.0366)	(0.0860)	(0.0364)
MktExcess * Bank			0.0044	0.0357	0.0043	0.0562
			(0.0850)	(0.0790)	(0.0854)	(0.0703)
Size					0.0000	0.0000
					(0.0000)	(0.0000)
FamilySize					−0.0000	0.0000
					(0.0000)	(0.0000)
MER					−0.0073	−0.1064***
					(0.0286)	(0.0186)
Load					0.0177	−0.0567*
					(0.0654)	(0.0345)
Age					0.0000**	−0.0000**
					(0.0000)	(0.0000)
Alpha	−0.1235***	−0.0089	−0.1233***	−0.0022	−0.1749	0.2394***
	(0.0466)	(0.0329)	(0.0474)	(0.0287)	(0.1302)	(0.0618)

Table 6 (continued)

Obs.	1400	2067	1400	2067	1390	2011
R-squared	0.7237	0.7819	0.7237	0.7822	0.7241	0.7854
Panel (D) – Balanced Funds						
MktExcess	0.6468***	0.6606***	0.6537***	0.6894***	0.6501***	0.6847***
	(0.0396)	(0.0476)	(0.0427)	(0.0537)	(0.0421)	(0.0541)
SMB	0.0219	0.0481	0.0218	0.0480	0.0231	0.0469
	(0.0609)	(0.0417)	(0.0609)	(0.0417)	(0.0607)	(0.0417)
HML	0.0927*	0.0133	0.0928*	0.0134	0.0926*	0.0178
	(0.0542)	(0.0441)	(0.0542)	(0.0441)	(0.0532)	(0.0437)
Bank	0.0097	−0.0268	0.0075	0.0383	−0.0403	0.0418
	(0.0343)	(0.0463)	(0.0335)	(0.0489)	(0.0548)	(0.0668)
MktExcess * Bank			−0.0188	−0.0783*	−0.0163	−0.0743*
			(0.0303)	(0.0408)	(0.0305)	(0.0419)
Size					0.0000	−0.0000
					(0.0000)	(0.0000)
FamilySize					−0.0000	−0.0000
					(0.0000)	(0.0000)
MER					−0.0020	−0.0577
					(0.0345)	(0.0422)
Load					−0.0724	−0.0389
					(0.0668)	(0.0484)
Age					−0.0000	0.0000
					(0.0000)	(0.0000)
Alpha	−0.2820***	0.1478*	−0.2815***	0.1242	−0.2104*	0.2635
	(0.1054)	(0.0809)	(0.1054)	(0.0813)	(0.1101)	(0.1858)

Table 6 (continued)

Obs.	3087	4436	3087	4436	3039	4207
R-squared	0.7614	0.6666	0.7616	0.6686	0.7628	0.6721

This table represents the results pre and post financial crisis of two-way clustering regressions (based on Thompson (2011) of monthly excess fund returns (Rm,t − Rf) on market factors and dummy variable for bank-managed funds and bank systematic risk. Panel (A) is for the entire sample, Panel (B) is for equity funds, Panel (C) bond funds, and Panel (D) balanced funds

Standard errors are in parenthesis

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

For equity funds, the results are quite different. The differential alpha return is insignificant for all models. The bank equity funds have significantly more systematic risk than non-bank funds both prior to and after the crisis but the difference is less after the crisis.

Finally, for bond funds there is no difference in either alpha or systematic risk both before and after the GFC.

6 Conclusion

Bank-managed funds are perceived as being worse performers than independent funds. Academic research has found varying results. Frye (2001) found no significant difference in US bank-managed bond funds compared to non-bank-managed bond funds. During the sample period of this study, banks controlled approximately 18% of the US fund market. Matallin-Saez et al. (2012) and Dieu (2015) find that mutual funds in Spain and France, respectively, both underperform non-bank funds. In both these markets, bank funds dominated the mutual fund industry. Ferreira et al. (2018) study equity funds in 28 countries and again find underperformance of bank funds. While the market share varies in each of these countries, overall, banks only controlled 18.1% of the market.

Our paper examines the issue of bank mutual fund performance in Canada. Canada is an interesting market to study because the overall market share of the mutual fund industry is roughly equal for banks and non-banks. This removes any impact from being market-dominant (as in the European and international studies) or a niche player (as in the US study). We also examine equity, balanced, and bond funds to determine if there are differences based on fund type. Finally, we correct for two-way clustering based on both fund and time.

Our results differ from previous findings. In general, we do not find any significantly negative performance for bank funds. Given that all previous studies had bank funds as either a majority or minority participant in the market, this suggests that their results may be impacted by market power and not just bank ownership.

However, we did find differences in the systematic risk of bank funds, suggesting that banks tailor their funds to the risk preferences of their customers. Finally, we find that the results are dependent on fund type (i.e. equity, balanced, or bond) suggesting that generalizations regarding performance of bank funds that do not take fund type into account may be misleading.

Appendix 1

Canadian Bond Fund Classification

Based on median values calculated from observations of fund holdings data over a period of three years, a minimum of 70% of the market value of portfolio must be allocated to Canadian dollar-denominated Government and/or corporate bonds, debentures, and short-term notes. Average term-to-maturity of portfolio including short-term investments must be greater than three years. Of the non-cash assets, the proportion of non-Canadian holdings must be no more than 30% and the equity component must be no more than 10%.

Canadian Balanced Fund Classification

Based on median values calculated from observations of fund holdings data over a period of three years, at least 70% of the market value of the portfolio must be in a combination of Canadian equity and Canadian fixed income. The equity component must be no less than 30% and no more than 70% of the portfolio. Fixed income and cash together must represent no less than 30% or more than 70% of the portfolio.

Canadian Equity Fund Classification

Based on median values calculated from observations of fund holdings data over a period of three years, a minimum of 50% of the total assets and 70% of non-cash assets of the portfolio must be in Canadian equities listed on a recognized exchange. In addition, based on median values calculated from observations of fund holdings data over a period of three years, at least half of the industry sectors or a recognized security classification scheme should be represented, each at least 50% of the comparable industry sector weighting within the S&P/TSX Composite Index.

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