THE PERFORMANCE OF
CANADIAN POOLED EQUITY FUNDS

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PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF FINACIAL RISK MANAGEMENT

In the Segal Graduate School of Business Program
of the
Faculty
of
Business Administration

Approval

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Degree: **Master of Financial Risk Management**

Title of Project: **THE PERFORMANCE OF CANADIAN POOLED
                                    EQUITY FUNDS**

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Abstract

In this paper, we evaluate and rank the performance of 65 Canadian Equity Pooled Funds. We adopt traditional performance measures to evaluate pooled fund managers' performances from January 1999 to December 2008. We employ the geometric mean as a reward measure, standard deviation and beta coefficient as risk measures, and Capital Asset Pricing Model (CAPM) risk-adjusted measures that include Jensen's (1968) alpha, the Treynor (1965) ratio, the Sharpe (1966) ratio, and Modigliani and Modigliani's (1997) M-Squared. Treynor-Mazuy (1966) and Henriksson-Merton (1981) are used to measure market-timing. According to our results, thirty-five percent of 65 Canadian Equity Pooled Funds managers have abnormal returns in terms of Jensen's (1968) alpha. Only eight pooled fund managers have market-timing ability. None of 65 pooled fund managers has both selectivity and market-timing ability at the same time.

Dedication

       I wish to dedicate this paper to my dearest and respectful parents for fully supporting me from my undergraduate to graduate study in Canada. Without their love and support, I never can achieve my goal.

       Tingting

Acknowledgements

We would like to express great gratitude to our supervisor, Dr. Robert Grauer, who has been continuously and patiently providing us with valuable suggestions and comments. We also want to thank Dr. Christina Atanasova , our second reader, for giving us constructive advice to improve our project.

Table of Contents

Appendices

Bibliography

List of Tables

1. Introduction

Generally speaking, return and risk are positively correlated. Investors are concerned about whether mutual fund and pooled fund managers help them get a desirable return at a certain risk level. The issue raised from this statement is how investors should evaluate the performance for their mutual fund and pooled fund managers. Based on the previous studies, most researchers analyze mutual fund performance. In Ferson and Warther's (1996) research, they use Jensen's (1968) alpha and Treynor-Mazuy (1966) market-timing model to measure 63 open-end mutual fund managers' abilities from January 1968 to December 1990. The results show that the abnormal rate of returns are not statistically significant at the 5% level in terms of Jensen' (1968) alpha. Market-timing ability exists only for maximum gain open-end fund managers based on statistical significance of Treynor-Mazuy (1966) market-timing model at the 5% level. In addition, they criticize Jensen's (1968) alpha. First, Jensen's (1968) alpha assumes that risk is constant. Therefore, it cannot adjust for changes in economic condition. Secondly, Jensen's (1968) alpha cannot distinguish between pooled fund managers' selectivity ability and market timing ability. Therefore, Ferson and Warther (1996) use Treynor-Mazuy's (1966) model to adjust the problems in Jensen's (1968) alpha. In our paper, we employ Treynor-Mazuy (1966) and Henriksson-Merton (1981) market-timing models for 65 Canadian Equity Pooled Funds and for the 10 portfolios from January 1999 to December 2008. We also analyze the geometric mean as a reward measure, standard deviation and beta as risk measures, Capital Asset Pricing Model (CAPM) risk-adjusted measures which include Jensen's (1968) alpha, the Treynor (1965) ratio, the Sharpe (1966) ratio, the Modigliani and Modigliani's (1997) M-Squared, and Treynor-Mazuy (1966) and Henriksson-Merton (1981) market-timing models. Based on the results, thirty-five percent of

Jensen's alphas of 65 Canadian Equity Pooled Funds are statistically significant at the 5% level. The results show that only two portfolios have market-timing ability.

We organize our paper into six sections. We will explain our methodology and data source in section 2 and 3. In section 4, we analyze the performance of 65 Canadian Equity Pooled Funds. In section 5, we analyze and compare 10 portfolios performance. Finally, we give a conclusion in section 6.

2. Methodology

Geometric Mean

Geometric mean refers to the average of a set of products, the calculation of which is commonly used to determine the performance results of an investment or portfolio. Technically defined as "the 'N 'th root product of 'N' numbers", the formula for calculating geometric mean is most easily written as[1]:

$$[\prod_{i=1}^{N}(1 + r_i)]^{\frac{1}{N}} \tag{1}$$

Where r_i is the rate of return.

Standard Deviation

Standard deviation measures the variability of a population or a probability distribution. In finance, standard deviation represents risk level for a particular security or portfolio. The formula for calculating standard deviation is written as follows:

$$\sigma = \sqrt{\frac{1}{N}\sum_{i=1}^{N}(r_i - \mu)^2} , \quad i = 1,\dots, N \tag{2}$$

N is the number of monthly returns for a security or portfolio. μ is average monthly return of a security or portfolio.

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[1] The definition of Geometric Mean is retrieved from investopedia.com

Capital Asset Pricing Model (CAPM)

The Sharpe (1964) and Lintner (1965) CAPM describes linear relationship between the expected return and its systematic risk of a particular risky security. All pooled funds plot on the security market line (SML), the formula for SML is written as follows:

$$E(r_i) = r_f + (E(r_m) - r_f)\beta_i, \quad i = 1,\ldots, N \tag{3}$$

Where $E(r_i)$ denotes the expected return of each asset. r_f is riskfree rate of interest. $E(r_m)$ is the expected return on the market. β_i is the covariance of the return on an asset with the return on the market portfolio divided by the variance of the return on the market. $(E(r_m) - r_f)\beta_i$ is a security's risk premium that compensate for systematic risk related to the market.

Capital Market Line (CML)

The capital market line shows a linear relationship between expected return and standard deviation for efficient portfolios. The formula is written as follows:

$$E(r_i) = r_f + \left[\frac{E(r_m) - r_f}{\sigma_m}\right]\sigma_i, \quad i = 1,\ldots, N \tag{4}$$

Where $E(r_i)$ denotes the expected return of each efficient portfolio. σ_i is the standard deviation on the MeanVariance-efficient portfolio i. σ_m is the standard deviation on the market portfolio. $\left[\frac{E(r_m) - r_f}{\sigma_m}\right]\sigma_i$ is a security's risk premium that compensates for extra risk related to the market.

Jensen's Alpha

Jensen's (1968) alpha measures the excess return of a security or portfolio over the security's theoretical expected return. It is derived from security market line (SML). The formula as follows:

$$r_{it} - r_{ft} = \alpha_i + \beta_i(r_{mt} - r_{ft}) + \mu_i, \quad t=1,\ldots,T, \quad i = 1,\ldots, N \tag{5}$$

Where α_i represents Jensen's (1968) alpha is measure of performance. r_{it} is the return on a security or portfolio at time t. r_{ft} is the riskfree rate of return at time t. β_i is the unconditional measure of risk of a security or portfolio. μ_i denotes the error terms.

Beta Coefficient

Beta Coefficient is to show the systematic risk level of a security or portfolio related to market index return. The beta coefficient calculation comes from Equation (5).

Treynor Ratio

Treynor (1965) ratio's is another deviation from the SML. The formula as follows:

$$T_i = \frac{\bar{r}_i - \bar{r}_f}{\hat{\beta}_i}, \quad i = 1,\ldots, N \tag{6}$$

Where $\bar{r}_i$ is average return for a security or portfolio over certain periods. $\bar{r}_f$ is average the risk free rate of return over certain periods. $\hat{\beta}_i$ is estimated systematic risk of a security or portfolio from time-series regression in equation (5).

Sharpe Ratio

Sharpe (1966) Ratio, also called reward-to-variability ratio, measures the excess return per unit of risk relative to the capital market line. The formula as follows:

$$Sh_i = \frac{\bar{r}_i - \bar{r}_f}{\hat{\sigma}_i}, \quad i = 1,\ldots, N \tag{7}$$

Where $\hat{\sigma}_i$ is the estimated standard deviation of a security or portfolio.

Modigliani and Modigliani's M-Squared

Modigliani and Modigliani's (1997) M-Squared is also based on the capital market line (CML). Their measure is either up or down levers a fund by combining it with risk free borrowing or lending to have the same standard deviation as the market.

Market- timing Measures

Treynor-Mazuy's (1966) market-timing model assumes that the manager either continuously increases or decreases the beta of the fund in up- or down- markets. The formula as follows:

$$r_{it} - r_{ft} = \alpha_i + \beta_i (r_{mt} - r_{ft}) + \gamma_i (r_{mt} - r_{ft})^2 + u_{it}, \quad t=1,...T, \; i = 1,...,N \tag{8}$$

Where α_i is abnormal rate of return of a security or portfolio, a measure of selectivity. γ_i denotes as the market-timing coefficient and μ_{it} represents the error term.

Henriksson-Merton's (1981) market – timing model only has two betas a down and an up market beta. The formula as followings:

$$r_{it} - r_{ft} = \alpha_i + \beta_{di} (r_{mt} - r_{ft}) + \gamma_i \max (0, (r_{mt} - r_{ft})) + u_{it}, \quad t=1,...,T, \; i = 1,..., N \tag{9}$$

Where α_i is abnormal rate of return of a security or portfolio, a measure of selectivity. β_{di} is the down-market beta, and γ_p denotes market-timing coefficient which is the difference between the up- and down-market beta. Max $(0, r_{mt})$ is the payoff on a call option on the market with exercise price equal to the risk free rate of interest. μ_{pt} represents error term

3. Data Collection

All of data comes from Morning Star Database. Originally, the monthly rates of returns for each 65 Canadian Equity Pooled Funds are collected from January 1999 to December 2008. Returns of the best and the worst 12, 36 and 60 months rolling periods for 65 Canadian Equity Pooled Funds are also obtain from Morning Star. Besides pooled funds data, TSX DEX Canada 30 days Treasury bill is the risk free rate of return and the S&P TSX Composite Total Return is the market rate of return. We use them to calculate geometric mean, standard deviation, beta, Jensen's (1968) alpha, the Treynor (1965) ratio, the Sharpe

(1966) ratio, Modigliani and Modigliani's (1997) M-Squared, market-timing alpha, market-timing coefficient and correlations matrix.

4. Overall Performance Analysis (65 Canadian Equities Pooled Funds)

Geometric Mean

The mean and standard deviation of geometric mean of all Canadian Equities Pooled Funds are 7.35% and 1.93%. Table 1 shows that the best performer is JF Canadian Equity Fund that is 11.93%. The following four largest geometric means are Montrusco Bolton Quantitative Canadian Equity (11.83%), Burgundy Canadian Equity (11.05%), Fidelity Canadian Disciplined Equity MF (10.65%), and McLean Budden Canadian Equity Value-PF (9.98%). However, the five worst geometric means from ranking 66 to 62 are Desjardins Fin'lFiera Canadian Equity GARP (3.71%), Legg Mason Batterymarch Canadian Core Equity (4.11%), CIBC Canadian Equity-PF (4.12%), KBSH Canadian Growth Equity (4.73%), and Manulife Canadian Large Cap Value Equity (MFC) (4.75%). The difference between the best and the worst (8.22%) is quite high. More specifically, the geometric mean for Beutel Goodman Canadian Equity-PF is 8.85% that ranks 18. PH&N Canadian Equity Sr O does not do well in terms of its ranking. Its geometric mean is 6.63% and ranks 43 out of 65.

Table 1 here

Risk Level – Standard Deviation and Beta Coefficient

Based on our result in table 1, Montrusco Bolton Quantitative Canadian Equity has the highest standard deviation (32.87%) and beta coefficient (1.32). The following four highest risk Canadian Equities Pooled Funds are AIG Canadian Equity 22.43% with beta coefficient 1.12, BonaVista Canadian Equity 19.09% with beta coefficient 1.07, PCJ Canadian Equity

18.51% with beta coefficient 1, and Canada Life Combined Equity S-9 17.90% with beta coefficient 0.99. The lowest risks among 65 Pooled Funds are McLean Budden Canadian Equity Value-PF 12.24% with beta coefficient 0.60, Beutel Goodman Canadian Equity-PF 12.37% with beta coefficient 0.52, Mawer Canadian Equity Pooled 12.95% with beta coefficient 0.56, JIF Canadian Equity Fund 13.04% with 0.61, and IA Canadian Equity Value-PF 13.06% with beta coefficient 0.65. Based on above analysis, the high risk usually involves high value of beta.

By comparing five pooled funds with the lowest geometric returns above and those with the lowest standard deviation, they do not match. In other words, the pooled funds with the lowest returns do not have the lowest standard deviation.

CAPM-based measures of performance

Jensen's Alpha

In table 2 we adopt Jensen's (1968) alpha to measure abnormal rate of return that is created by pooled fund managers. We do not distinguish their selectivity and market timing ability. Montrusco Bolton Quantitative Canadian Equity has the highest alpha value that is 0.64. The following four top pooled funds are JF Canadian Equity Fund (0.56), Burgundy Canadian Equity (0.52), Fidelity Canadian Disciplined Equity MF (0.42), and McLean Budden Canadian Equity Value-PF (0.41). Among those five top performers based on Jensen's (1968) alpha, only Montrusco Bolton Quantitative Canadian Equity is statistically insignificant from zero at the 5% significance level. The alphas of the rest of the four top performers are statistically significant from zero at the 5% significance level. Statistically significant from zero shows that pooled funds managers indeed get abnormal rate of return during the past 10 years periods. On the other hand, the worst five pooled funds based on

Jensen's (1968) alpha are Desjardins Fin'l Fiera Canadian Equity GARP (-0.12), Legg Mason Batterymarch Canadian Core Equity (-0.09), CIBC Canadian Equity-PF (-0.09), KBSH Canadian Growth Equity (-0.04), and Manulife Canadian Large Cap Val Equity (MFC) (-0.02). They are all not statistically significant from zero at the 5% significance level. Overall, thirty-five percent of all 65 Canadian Equity Pooled Funds are statistically significant from zero at the 5% significance level.

Table 2 here

Treynor Ratio

Table 2 also shows that the Treynor (1965) ratios for all 65 Canadian equity pooled funds are positive. The five best ranking of Treynor's (1965) ratio are Burgundy Canadian Equity (1.34), JF Canadian Equity Fund (1.18), McLean Budden Canadian Equity Value-PF (0.94), HowsonTattersall Can Value Equity (Foreign) (0.93), and Beutel Goodman Canadian Equity-PF (0.92). The worst five Treynor's ratios ranked from 66 to 62 are Desjardins Fin'lFiera Canadian Equity GARP (0.13), Legg Mason Batterymarch Canadian Core Equity (0.16), CIBC Canadian Equity-PF (0.16), KBSH Canadian Growth Equity (0.22), and Manulife Canadian Large Cap Val Eq (MFC) (0.23). Based on those the Treynor (1965) ratios above, pooled funds managers do good jobs if they manage their funds followed by market trends.

Sharpe Ratio and Modigliani and Modigliani's M-Squared

In addition, Table 2 shows that the rankings for the Sharpe (1966) ratio and Modigliani and Modigliani's (1997) M-Squared are the same because they both are derived from capital market line. JF Canadian Equity Fund also has the highest Sharpe (1966) ratio (0.21), Modigliani, and Modigliani's (1997) (16.40%). The following four highest values of the Sharpe (1966) ratio and Modigliani and Modigliani's (1997) are Burgundy Canadian Equity

(0.19 & 14.99%), McLean Budden Canadian Equity Value-PF (0.18&14.01%), SEAMARK Canadian Equity (0.15 & 12.41%), and HowsonTattersall Can Value Equity (Foreign) (0.15 & 12.33%). Among the top highest value of the Sharpe (1966) ratio and Modigliani and Modigliani's (1997), JF Canadian Equity Fund, Burgundy Canadian Equity, and McLean Budden Canadian Equity Value-PF are also included in the top five performers in terms of geometric return. Therefore, those three pooled funds have the best rewards in terms of their risk level. In addition, SEAMARK Canadian Equity ranks 9 out of 65 based on geometric return and HowsonTattersall Canadian Value Equity (Foreign) ranks 12 out of 65 in terms of geometric return. On the other hand, the worst five the Sharpe (1966) ratio and Modigliani and Modigliani's (1997) M-Squared are DesjardlinsFin'lFiera Canadian Equity GARP (0.03 & 5%), Legg Mason Batterymarch Canadian Core Equity (0.03 & 5.48%), CIBC Canadian Equity-PF (0.03, 5.49%), KBSH Canadian Growth Equity (0.05, 6.14%), and Manulife Canadian Large Cap Val Equity (MFC) (0.05, 6.17%). The investors from those pooled funds with lower the Sharpe (1966) ratio cannot be compensate much for the risks they bear.

Market – Timing Models

Treynor – Mazuy Market – Timing Model

There are 54 positive alphas and 11 negative alphas in Treynor-Mazuy (1966) market-timing model. More specifically, only 33.85% (22 out of 65) of pooled funds are statistically significant different from zero at the 5% level. The difference between Jensen's (1968) alpha and market-timing alpha is attributed to market timing abilities. The results from Treynor-Mazuy (1966) model show that there are 6 positive gammas are at the 5% statistically significant level including AIG Canadian Equity (0.01), Bona Vista Canadian Equity (0.01), Canada Life Combined Equity S-9 (0.01), Genus Canadian Equity (0.01), HSBC Canadian Equity (0.01), and Montrusco Bolton Quantitative Canadian Equity (0.04). It implies that

those funds managers have superior information about future market movement, and they adjust their beta coefficient related to market systematically in the correct way. Meanwhile, none of them exhibits selectivity ability at the 5% statistically significant level. It is difficult to have selectivity and market-timing ability for those pooled fund managers at the same time.

Additionally, there are five negative gammas at the 5% statistically significant level including Beutel Goodman Canadian Equity-PF, CC & L Canadian Equity, Greystone Canadian Equity, Guardian Canadian Equity, and Howson Tattersall Can Value Eq (Foreign). Four of them have positive market-timing alpha except CC & L Canadian Equity at the 5% statistically significant level. It indicates that the pooled fund managers adjust the betas in opposite way when they have both selectivity and market-timing ability.

Table 2 - 3 here

Henriksson – Merton Market – Timing Measure

As well as market-timing alpha in Treynor-Mazuy (1966) market-timing model, only 18.46% (12 out of 65) of Henriksson-Merton's (1981) alphas are statistically significant different from zero at the 5% level. It is lower than both Jensen's (1968) alpha in CAPM and Treynor-Mazuy's (1966) alpha. Eight pooled fund managers exhibit market-timing abilities including the pooled fund managers in BGI Active Canadian Equity, Bona Vista Canadian Equity, Canada Life Combined Equity S-9, CIBC Canadian Equity S&P/TSX Index, Genus Canadian Equity, HSBC Canadian Equity, Manulife MFC Global Pooled Canadian Index, and Montrusco Bolton Quantitative Canadian Equity. All of eight pooled funds do not show selectivity ability at the 5% statistically significance level except HSBC Canadian Equity which has a negative market-timing alpha. Contractively, the pooled funds managers in AMI

10

Pooled Canadian Equity, and CC & L Canadian Equity have negative market-timing ability meanwhile they have selectivity ability at the 5% statistically significant level.

By comparing the results of Treynor-Mazuy (1966) and Henriksson–Merton (1981) market-timing models, five pooled fund managers have positive market-timing ability in both models at the 5% significant level. They are Bona Vista Canadian Equity, Canada Life Combined Equity S-9, Genus Canadian Equity, HSBC Canadian Equity, and Montrusco Bolton Quantitative Canadian Equity. Only CC & L exhibits negative market-timing ability in both models.

Correlations between Risk-Adjusted Measures

Based on correlations between risk-adjusted measures in Table 4, the correlation between the Sharpe (1966) ratio and Modigliani and Modigliani's (1997) M-Squared is positive 1. It explains why the rankings for the Sharpe (1966) ratio and Modigliani and Modigliani's (1997) M-Squared are the same. Furthermore, the Treynor (1965) ratio is highly correlated with the Sharpe (1966) ratio, Modigliani and Modigliani's (1997) M-Squared. The correlation between the Treynor (1965) ratio and the Sharpe (1966) ratio (0.98) is higher than the correlation between the Treynor (1965) ratio and Jensen's (1968) alpha (0.93). According to Grauer (2008), Treynor (1965) ratio does a good job of ranking strategies than the Sharpe (1966) ratio does. Grauer also points out the problem that associate with the inconsistency of the ratio measures is the difference between borrowing and lending rates that investors can leverage. As well as the Treynor (1965) ratio, Jensen's (1968) alpha is also highly correlated with the Sharpe (1966) ratio, and Modigliani and Modigliani's (1997) M-Squared.

Table 4 here

Periodic Performance

Return for Best 60 Months Period and worst 60 Months Period

Table 5 shows that the average mean and standard deviation for return of best 60 months period are 1.63% and 21.40%. The most returns are around mean. There are only few outliers such as Montrusco Bolton Quantitative Canadian Equity which is the highest best 60 months period return pooled funds with return 2.40%, AIG Canadian Equity with return 1.84%. The same as return for best 60 months period, the average mean and standard deviation for return of worst 60 months period are 0.27% and 17.19%. Variation for worst 60 months period is even smaller than best 60 months period. HSBC Canadian Equity with return -0.07% did perform badly for the 5- year periods. Moreover, Legg Mason Batterymarch Canadian Core Equity with return -0.03% is another significant outlier. Those two negative returns derive the average mean for worst 60 months period down at large extend.

<center>**Table 5 here**</center>

5.   Portfolio Performance Analysis

Ten Portfolios Performance

In this section, we are interested in three particular pooled funds including, Philips, Hager & North (PH&N), Beutel Goodman Canadian Equity (Beutel Goodman), and Montrusco Bolton Quantitative Canadian Equity (Monstrusco Bolton). We combine those three pooled funds with TSX/S&P Composite Total return into 10 portfolios. Four of 10 portfolios are one hundred percent in each individual fund and market index return. Six equally weighted portfolios, each of which contains two funds from the above four. Hence, we have the following ten portfolios:

●   100 percent of PH&N, Beutel Goodman, Montrusco Bolton Quantitative and TSX

<center>12</center>

composite return.

- 50/50 percent of PH&N and Beutel Goodman, PH&N and TSX composite return, PH&N and Montrusco Bolton Quantitative, Beutel Goodman and TSX composite return, Beutel Goodman and Montrusco Bolton Quantitative, and Montrusco Bolton Quantitative and TSX Composite Return.

According to Table 6, 100 percent of Montrusco Bolton Quantitative portfolio has the highest geometric mean of return of 0.118% per month, and the lowest return is the pure TSX Composite return of 0.052% per month in the last 120 months. However, the pure Montrusco Bolton Quantitative also is the most risky portfolio, and the pure Beutel Goodman Canadian Equity is the least risky. Beutel Goodman has a higher return and lower risk than that of the combination of PH&N and Beutel Goodman.

Table 6 here

If an investor can tolerant more risk, the portfolio of 50/50 percent of Beutel Goodman & Montrusco Bolton which ranks second in the geometric mean return (0.106% monthly) and has the fourth highest standard deviation and the fifth highest of beta (0.92).

The above analysis is based on the non–risk adjusted returns. We would like to perform a more in-depth analysis with the risk-adjusted measurement and some of the ratios. We rank the ten portfolios based on the Sharpe (1966) ratio, Modigliani and Modigliani's (1997) M-Squared, and the Treynor (1965) ratio respectively, and found that the orders of these three types of ranking are exactly the same.

Table 7 here

The ranking results from table 7 show that Beutel Goodman has the highest risk-adjusted rankings; the 100 percent of Montrusco Bolton is the third rank and the 50/50 Portfolio with

PH&N & Beutel is the fifth one. Even though Montrusco Bolton has the biggest Jensen's (1968) alphas, none of the alphas of the 10 portfolios is significant.

Based on the risk-adjusted analysis, we suggest that 100 percent of Beutel Goodman is the superior investment to other portfolios. In addition, any combination with the Montrusco Bolton will give a higher the Sharpe (1966) Ratio, Modigliani and Modigliani's (1997) M-Squared and the Treynor (1965) ratio than the combination of PH&N, Beutel Goodman, and TSX Composite return.

Table 8 suggests that correlation of Jensen' (1968) alpha with the other three ratios is between 0.81 and 0.82. The Sharpe (1966) ratio is perfectly and positively correlated with Modigliani and Modigliani's (1997) M-Squared. Finally, the correlation between the Treynor (1965) ratio and the Sharpe ratio is the same as that between the Treynor ratio and Modigliani and Modigliani's M-Squared, which is 0.98. We usually think that the correlation between Jensen's alpha and the Treynor ratio should be higher than the correlation between the Treynor ratio and the Sharpe ratio because the Treynor ratio and Jensen's alpha are based on beta. However, the Sharpe ratio, and Modigliani and Modigliani's M-Squared are based on standard deviation. Our results do support this argument in our analysis. However, the potential problems are those numbers are ratios; we may not have the result as we expected.

Table 8 here

In addition, based on the risk-adjusted analysis, the pure Beutel Goodman has the highest ratio in all of the Sharpe ratio, Modigliani and Modigliani's M-Squared and the Treynor ratio. Hence, if investors are holding other portfolios, they can choose Beutel Goodman because this portfolio can achieve a higher risk adjusted return. Moreover, each of the portfolios is at least as good as the TSX composite return.

Performances in different periods are also an important indicator that indicates performance of each fund. According to Table 9, if an investor holds any of these 10 portfolios, they will end up with losing in the last 3 months, 1-year and even last 3 years periods. It means that if an investor bought the best return portfolio with combination of Beutel Goodman & Montrusco Bolton three years ago, he or she would have negative return of 0.07% per month. The 100% of PH&N is the worst one with negative return of 0.57% per month. However, if investors hold the funds in a longer term, such as 5-year or 10-year period, they will have a positive return ranging from 0.25% to 0.91% (5-year holding period) and 0.43% to 0.94% (10-year holding period) per month respectively. Due to the current subprime crisis, most of the funds have negative returns for the last one-year or two. Consequently, all of our ten portfolios have negative returns for the last three years periods. The pure Beutel Goodman portfolio has the best monthly return of negative 4.74 percent in the last three months periods as of December 2008, and again the pure PH&N portfolio is the worst performer with negative 8.29 percent monthly return. The table shows that in a shorter period, Beutel Goodman, which is considered as a more risk adverse fund, has a higher return. On the other hand, in a longer period, those riskier funds, such as Montrusco Bolton, have a better performance.

Table 9 here

CAPM and Market- Timing Analysis

Our result shows that, Jensen's (1968) alpha and the two market-timing alphas in our model for the ten portfolios are positive but relatively small. In addition, none of the t-statistics for alphas is significant at the 5% significant level. Hence, none of those portfolios can achieve abnormal returns compared to the market. In the market-timing case, negative

alphas appears in three portfolios in the Treynor-Mazuy (1966) market-timing model and four portfolios in the Henriksson-Merton (1981) market-timing model contain Montrusco Bolton Quantitative have negative alphas. However, none of the market-timing alphas is significant at the 5% significance level. Therefore, we cannot conclude that portfolios contain Montrusco Bolton have negative abnormal returns.

Table 10 here

We found that, in the Treynor-Mazuy (1966) market-timing model, three of the ten portfolios gammas are negative, and all three contain Beutel Goodman. We believe that Beutel Goodman is reducing (or increasing) the beta when the market shows positive (or negative) signals. Beutel Goodman has the lowest betas, which are 0.52, 0.48, and 0.62 in the Treynor-Mazuy and Henriksson-Merton (1981) market-timing model, respectively. Since it has the smallest betas, the managers tend to use more conservative strategies than other fund managers do. That was why they can avoid the collapse of Nortel in 2002, and have least loss in the subprime crisis in 2007 and 2008. On the other hand, any portfolio, which contains Montrusco Bolton, will have largest and positive beta and gamma. Therefore, this fund tends to increase the beta when the market shows an up signal and decrease the beta when the market shows a down signal. Their strategies are more aggressive than other fund managers are. The return in the good market condition, they generate higher return than other funds, but in a poor market condition, they have bigger loss, which is an opposite of the Beutel Goodman.

Moreover, according to the Portfolio Correlation in table 11, it shows that the correlation of pure Montrusco Bolton has the lowest correlation with other portfolios. It supports the

above analysis that the manager of Montrusco Bolton is using very different strategies to other fund managers.

Table 11 here

6. Conclusion

We analyze the past 10-year's performance for 65 Canadian Equity Pooled Funds and 10 portfolios, and distinguish between pooled fund managers' selectivity abilities and market-timing abilities. Thirty-five percent of 65 pooled funds have statistically significant Jensen's (1968) alphas at the 5% level. According to the result of Treynor-Mazuy (1966) and Henriksson-Merton (1981) market-timing models, nine pooled fund managers have positive market-timing ability in total at the 5% significant level. Seven of them do not show selectivity ability at the same time. Only pooled fund manager in HSBC Canadian Equity has negative selectivity ability.

We use the same method to evaluate and analyze 10 portfolios. Among those four individual funds, Montrusco has the highest geometric return and highest risk. PH&N performs the worst in terms of reward to risk ratio. Even though we have some positive returns from some portfolios, but none of their Jensen' alphas are statistical significant at the 5% level. Based on Treynor-Mazuy (1966) and Henriksson-Merton (1981) market-timing models, Montrusco & TSX, and Montrusco & PH&N have positive market-timing ability in both models. Meanwhile, none of them exhibit selectivity ability at the 5% statistically significant level.

Appendices

Table 1

Return & Risk 1/99-12/08

This table contains the Geometric Mean (percentage) which is the average of a set of products calculated from equation (1). The Standard deviation measures the variability of a population or a probability distribution and the Beta of pooled funds is a number describing the relation of its returns with that of the market calculated from equation (2) and (6) respectively. The Geometric Means are ranked from the highest to lowest. Beta and Standard deviation are ranked from the lowest to highest.

	Mean		Risk level			
	Geometric Mean (%)	Rank	Standard Deviation	Rank	Beta	Rank
AIG Canadian Equity	8.24	22	22.43	65	1.12	65
Altamira Pooled Cdn Equity	8.82	19	17.48	56	0.95	46
AMI Pooled Canadian Equity	5.87	46	16.13	29	0.92	37
Astra Canadian Index-PF	5.31	58	16.94	41	0.98	51
Astra Natcan Canadian Equity-PF	5.12	59	16.70	37	0.94	41
Beutel Goodman Canadian Equity-PF	8.85	18	12.37	2	0.52	2
BGI Active Canadian Equity	7.71	29	17.32	55	0.98	50
BGI S&P/TSX Composite Index Class A	5.52	51	17.15	50	1.00	59
Bissett Canadian Equity	5.64	48	13.48	7	0.69	10
BonaVista Canadian Equity	5.90	45	19.09	64	1.07	64
Burgundy Canadian Equity	11.05	3	13.14	6	0.49	1
Canada Life Combined Equity S-9	4.99	61	17.9	62	0.99	55
CC & L Canadian Equity	5.67	47	15.18	17	0.81	19
CIBC Canadian Equity S&P/TSX Index	5.44	54	17.11	49	0.99	57
CIBC Canadian Equity-PF	4.12	64	16.65	35	0.96	47
Co-operators Canadian Equity-PF	8.24	23	15.12	16	0.80	18
Desjardins Fin'l Fiera Cdn Equity GARP	3.71	66	15.73	23	0.89	31
Desjardins Fin'l MB Cdn Equity Grth	7.00	34	17.58	58	0.95	43
Fidelity Canadian Disciplined Equity MF	10.65	4	17.9	61	0.95	44
Fidelity Canadian Large Cap MF	9.75	7	16.61	34	0.85	24
Fidelity True North MF	8.95	14	16.06	28	0.85	25
Genus Canadian Equity	7.92	27	17.03	43	0.94	40
Greystone Canadian Equity	8.93	15	16.83	39	0.87	29
Guardian Canadian Equity	7.78	28	13.54	8	0.68	9
GWL Canadian Equity #3	6.45	44	16.66	36	0.92	35
GWL Index Canadian Equity	5.49	52	17.15	51	1.00	60

Table 1 continued

	Mean		Risk level			
	Geometric	Rank	Standard	Rank	Beta	Rank
Highstreet Canadian Equity	9.57	**10**	16.2	**31**	0.86	**28**
Howson Tattersall Can Value Eq (Foreign)	9.48	**12**	13.88	**10**	0.58	**4**
HSBC Canadian Equity	5.11	**60**	15.96	**26**	0.92	**34**
IA Canadian Equity Value-PF	7.57	**31**	13.06	**5**	0.65	**8**
JF Canadian Equity Fund	11.93	**1**	13.04	**4**	0.61	**6**
KBSH Canadian Growth Equity	4.73	**63**	17.60	**59**	1.00	**58**
Legg Mason Batterymarch Cdn Core Equity	4.11	**65**	16.96	**42**	0.98	**49**
Leith Wheeler Canadian Equity Sr B	8.91	**16**	14.22	**13**	0.63	**7**
LL Canadian Equity (LC)	6.92	**38**	15.46	**19**	0.86	**27**
Manulife Canadian Equity	7.65	**30**	17.22	**53**	0.96	**48**
Manulife Canadian Large Cap Val Eq (MFC)	4.75	**62**	13.71	**9**	0.74	**13**
Manulife Fidelity Canadian Large Cap	9.73	**8**	16.56	**33**	0.85	**22**
Manulife McLean Budden Cdn Equity Growth	6.96	**36**	17.53	**57**	0.95	**42**
Manulife MFC Global Pooled Cdn Index	5.35	**56**	17.09	**47**	0.99	**54**
Manulife SEAMARK Canadian Equity	9.51	**11**	14.11	**11**	0.70	**11**
Mawer Canadian Equity Pooled	8.68	**20**	12.95	**3**	0.56	**3**
McLean Budden Canadian Equity Growth-PF	7.01	**33**	17.62	**60**	0.95	**45**
McLean Budden Canadian Equity Value-PF	9.98	**5**	12.24	**1**	0.60	**5**
McLean Budden Canadian Equity-PF	8.28	**21**	14.64	**14**	0.78	**16**
MFC Global Pooled Canadian Index	5.45	**53**	17.11	**48**	0.99	**56**
Montrusco Bolton Canadian Equity	6.74	**41**	16.19	**30**	0.87	**30**
Montrusco Bolton Canadian Equity+	7.00	**35**	17.08	**46**	0.84	**21**
Montrusco Bolton Quantitative Cdn Eq	11.83	**2**	32.87	**66**	1.32	**66**
Natcan Canadian Equity Pooled	9.09	**13**	16.03	**27**	0.79	**17**
PCJ Canadian Equity	8.91	**17**	18.51	**63**	1.00	**63**
PH&N Canadian Equity Sr O	6.63	**43**	15.06	**15**	0.81	**20**
Russell Canadian Equity	6.85	**39**	16.74	**38**	0.92	**38**
S&P/TSX Composite TR	5.34	**57**	17.19	**52**	1.00	**62**
Sceptre Canadian Equity-PF	7.94	**26**	15.62	**22**	0.85	**26**
Scheer Rowlett Canadian Equity	9.76	**6**	15.60	**21**	0.78	**15**
SEAMARK Canadian Equity	9.66	**9**	14.16	**12**	0.70	**12**
SEI Canadian Equity	8.18	**24**	16.91	**40**	0.92	**36**
SSgA S&P/TSX Composite Index	5.42	**55**	17.07	**45**	0.99	**53**
Standard Life Canadian Equity	6.70	**42**	15.89	**24**	0.90	**32**
Standard Life Canadian Equity Index	5.53	**50**	17.23	**54**	1.00	**61**
Standard Life Capped Canadian Equity	8.13	**25**	15.56	**20**	0.85	**23**
Standard Life Core Canadian Equity	6.74	**40**	15.96	**25**	0.90	**33**
TD Emerald Canadian Equity	5.62	**49**	17.07	**44**	0.99	**52**
UBS (Canada) Canadian Equity	6.93	**37**	16.35	**32**	0.93	**39**

Table 2
Risk-Adjusted measure of the 65 funds 1/99-12/08

This table contains Jensen's alpha (%), T-statistics of Jensen's alpha, Treynor Ratio, Sharpe Ratio and M-Squared (%) of the 65 funds. In addition, they are all ranked from the highest to the lowest based on the four measures. Jensen's alpha measures the excess return of a security or portfolio of securities over the security's theoretical expected return from equation (6). Treynor ratio measures the returns earned in excess of that which could have been earned on a riskless investment from equation (7). Sharpe Ratio measures the excess return per unit of risk in an investment asset from equation (8). M-Squared measures either up- or down-levers a fund by combining it with risk free borrowing or lending to have the same standard deviation as the market.

	Risk - Adjusted									
	Sharpe Ratio	Rank	M-Squared (%)	Rank	Treynor Ratio	Rank	Jensen's Alpha (%)	T Statistic	Rank	R Squared
AIG Canadian Equity	0.09	**31**	8.99	**31**	0.49	**28**	0.26	1.05	**21**	0.79
Altamira Pooled Cdn Equity	0.12	**20**	10.30	**20**	0.55	**23**	0.28	2.64*	**20**	0.94
AMI Pooled Canadian Equity	0.07	**45**	7.35	**45**	0.31	**47**	0.05	0.69	**47**	0.97
Astra Canadian Index-PF	0.06	**58**	6.71	**58**	0.26	**58**	0.00	-0.03	**58**	0.99
Astra Natcan Canadian Equity-PF	0.05	**59**	6.51	**60**	0.25	**59**	-0.01	-0.09	**59**	0.94
Beutel Goodman Canadian Equity-PF	0.15	**7**	12.19	**7**	0.92	**5**	0.34	1.70	**13**	0.55
BGI Active Canadian Equity	0.10	**29**	9.16	**29**	0.45	**33**	0.19	4.09*	**31**	0.99
BGI S&P/TSX Composite Index Class A	0.06	**51**	6.91	**51**	0.27	**51**	0.01	2.35*	**51**	1.00
Bissett Canadian Equity	0.07	**46**	7.32	**46**	0.35	**45**	0.06	0.38	**45**	0.77
BonaVista Canadian Equity	0.06	**47**	7.20	**48**	0.31	**48**	0.05	0.42	**48**	0.94
Burgundy Canadian Equity	0.19	**2**	14.99	**2**	1.34	**1**	0.52	2.24*	**3**	0.44
Canada Life Combined Equity S-9	0.05	**61**	6.36	**61**	0.24	**61**	-0.02	-0.14	**61**	0.91
CC & L Canadian Equity	0.06	**48**	7.20	**47**	0.32	**46**	0.05	0.34	**46**	0.84
CIBC Canadian Equity S&P/TSX Index	0.06	**54**	6.83	**54**	0.27	**54**	0.01	1.89	**54**	1.00
CIBC Canadian Equity-PF	0.03	**64**	5.49	**64**	0.16	**64**	-0.09	-1.13	**64**	0.96
Co-operators Canadian Equity-PF	0.11	**21**	10.25	**21**	0.57	**22**	0.25	1.86	**23**	0.87
Desjardins Fin'l Fiera Cdn Equity GARP	0.03	**66**	5.00	**66**	0.13	**66**	-0.12	-0.96	**66**	0.91
Desjardins Fin'l MB Cdn Equity Grth	0.08	**37**	8.40	**37**	0.41	**36**	0.15	1.03	**35**	0.89
Fidelity Canadian Disciplined Equity MF	0.14	**8**	12.12	**8**	0.70	**12**	0.42	3.44*	**4**	0.92
Fidelity Canadian Large Cap MF	0.14	**11**	11.54	**11**	0.69	**13**	0.37	2.23*	**9**	0.83
Fidelity True North MF	0.12	**16**	10.81	**16**	0.61	**17**	0.30	2.21*	**17**	0.88

Table 2 continued

	Sharpe Ratio	Rank	M-Squared (%)	Rank	Treynor Ratio	Rank	Jensen's Alpha (%)	T Statistic	Rank	R Squared
						Risk - Adjusted					
Genus Canadian Equity	0.10	28	9.43	28	0.48	30	0.21	2.10*	29	0.94
Greystone Canadian Equity	0.12	18	10.59	18	0.61	18	0.30	1.88	18	0.84
Guardian Canadian Equity	0.11	23	10.15	23	0.60	19	0.23	1.43	25	0.76
Guardian Cdn Growth Equity	0.09	32	8.90	32	0.49	29	0.18	0.98	32	0.77
GWL Canadian Equity #3	0.08	44	7.92	44	0.37	44	0.10	0.82	44	0.91
GWL Index Canadian Equity	0.06	52	6.88	52	0.27	52	0.01	1.19	52	1.00
Highstreet Canadian Equity	0.13	13	11.51	13	0.66	16	0.35	2.73*	12	0.89
Howson Tattersall Can Value Eq (Foreign)	0.15	5	12.33	5	0.93	4	0.39	1.74	6	0.55
HSBC Canadian Equity	0.05	60	6.51	59	0.25	60	-0.01	-0.16	60	0.96
IA Canadian Equity Value-PF	0.11	24	10.03	24	0.60	20	0.22	1.35	27	0.74
JF Canadian Equity Fund	0.21	1	16.40	1	1.18	2	0.56	3.33*	2	0.71
KBSH Canadian Growth Equity	0.05	63	6.14	63	0.22	63	-0.04	-0.36	63	0.94
Legg Mason Batterymarch Cdn Core Equity	0.03	65	5.48	65	0.16	65	-0.09	-1.15	65	0.96
Leith Wheeler Canadian Equity Sr B	0.13	14	11.40	14	0.79	8	0.33	1.57	14	0.62
LL Canadian Equity (LC)	0.09	33	8.60	33	0.42	34	0.14	1.39	36	0.93
Manulife Canadian Equity	0.10	30	9.11	30	0.45	32	0.19	2.29*	30	0.96
Manulife Canadian Large Cap Val Eq (MFC)	0.05	62	6.17	62	0.23	62	-0.02	-0.15	62	0.85
Manulife Fidelity Canadian Large Cap	0.14	12	11.54	12	0.69	14	0.37	2.22*	10	0.83
Manulife McLean Budden Cdn Equity Growth	0.08	38	8.37	38	0.41	38	0.14	1.00	37	0.89
Manulife MFC Global Pooled Cdn Index	0.06	56	6.75	56	0.26	56	0.00	0.08	56	1.00
Manulife SEAMARK Canadian Equity	0.15	6	12.25	6	0.78	9	0.36	2.25*	11	0.78
Mawer Canadian Equity Pooled	0.14	10	11.64	10	0.84	6	0.32	1.58	16	0.57
McLean Budden Canadian Equity Growth-PF	0.08	36	8.41	36	0.41	35	0.15	1.04	34	0.89
McLean Budden Canadian Equity Value-PF	0.18	3	14.01	3	0.94	3	0.41	2.75*	5	0.75
McLean Budden Canadian Equity-PF	0.12	19	10.44	19	0.58	21	0.25	2.09*	22	0.89

Table 2 continued

	Sharpe Ratio	Rank	M-Squared (%)	Rank	Treynor Ratio (%)	Rank	Jensen's Alpha (%)	T Statistic	Rank	R Squared
					Risk - Adjusted					
MFC Global Pooled Canadian Index	0.06	53	6.84	53	0.27	53	0.01	1.17	53	1.00
Montrusco Bolton Canadian Equity	0.08	42	8.30	42	0.41	39	0.13	0.92	38	0.88
Montrusco Bolton Canadian Equity+	0.08	35	8.45	35	0.46	31	0.17	0.77	33	0.73
Montrusco Bolton Quantitative Cdn Eq	0.12	17	10.64	17	0.74	10	0.64	1.31	1	0.57
Natcan Canadian Equity Pooled	0.13	15	10.97	15	0.67	15	0.33	1.71	15	0.75
PCJ Canadian Equity	0.11	22	10.17	22	0.55	24	0.29	2.36*	19	0.92
PH&N Canadian Equity Sr O	0.08	40	8.33	40	0.41	37	0.12	0.93	41	0.87
Russell Canadian Equity	0.08	39	8.35	39	0.40	40	0.13	1.13	39	0.92
S&P/TSX Composite TR	0.06	57	6.74	57	0.26	57	0.00	1001*	57	1.00
Sceptre Canadian Equity-PF	0.11	26	9.77	26	0.52	26	0.22	1.94	28	0.91
Scheer Rowlett Canadian Equity	0.14	9	11.94	9	0.74	11	0.38	2.24*	7	0.80
SEAMARK Canadian Equity	0.15	4	12.41	4	0.79	7	0.37	2.31*	8	0.77
SEI Canadian Equity	0.11	27	9.75	27	0.51	27	0.24	2.01*	24	0.92
SSgA S&P/TSX Composite Index	0.06	55	6.81	55	0.26	55	0.01	1.73	55	1.00
Standard Life Canadian Equity	0.08	43	8.28	43	0.39	43	0.12	1.41	43	0.96
Standard Life Canadian Equity Index	0.06	50	6.92	50	0.27	50	0.02	0.66	50	1.00
Standard Life Capped Canadian Equity	0.11	25	9.99	25	0.53	25	0.23	2.15*	26	0.92
Standard Life Core Canadian Equity	0.08	41	8.32	41	0.39	42	0.12	1.44	42	0.96
TD Emerald Canadian Equity	0.06	49	7.02	49	0.28	49	0.02	3.96*	49	1.00
UBS (Canada) Canadian Equity	0.08	34	8.47	34	0.40	41	0.13	2.46*	40	0.98

Table 3
Market-Timing coefficients of the 65 funds 1/99-12/08

Treynor-Mazuy Market-Timing measure and the Henriksson-Merton Market-Timing measure alphas and gamma from the regressions
$r_{it} - r_{ft} = \alpha_i + \beta_i (r_{mt} - r_{ft}) + \gamma_i (r_{mt} - r_{ft})^2 + u_{it}$, and $r_{it} - r_{ft} = \alpha_i + \beta_{di} (r_{mt} - r_{ft}) + \gamma_i \max(0, (r_{mt} - r_{ft})) + u_{it}$
The table also includes the ranks based on the alphas and gammas from the highest to the lowest and their T-statistics. T-statistics with a '*' means that alpha is significant at 5 percent significance level which T – statistics is greater than absolute value of 1.96.

	Treynor-Mazuy market-timing						Henriksson-Merton market-timing					
	alpha	Rank	T - stat	Gamma	Rank	T - stat	alpha	Rank	T - stat	Gamma	Rank	T - stat
AIG Canadian Equity	-0.06	58	-0.22	0.01	57	2.15*	-0.34	63	-0.87	0.33	64	1.94
Altamira Pooled Cdn Equity	0.25	28	1.98*	0.00	18	0.51	0.20	34	1.14	0.05	47	0.62
AMI Pooled Canadian Equity	0.15	39	1.90	0.00	18	-2.46*	0.23	28	2.04*	-0.10	12	-2.04*
Astra Canadian Index-PF	0.01	52	0.19	0.00	18	-0.38	0.00	51	0.05	0.00	34	-0.08
Astra Natcan Canadian Equity-PF	-0.10	59	-0.80	0.00	18	1.38	-0.14	57	-0.81	0.07	51	0.95
Beutel Goodman Canadian Equity-PF	0.59	4	2.53*	-0.01	1	-2.03*	0.81	3	2.50*	-0.26	4	-1.83
BGI Active Canadian Equity	0.11	42	2.03*	0.00	18	2.96 *	0.07	40	1.00	0.06	50	1.97 *
BGI S&P/TSX Composite Index Class A	0.01	50	1.40	0.00	18	1.27	0.00	50	0.37	0.01	40	1.44
Bissett Canadian Equity	-0.11	60	-0.58	0.01	57	1.73	-0.22	60	-0.83	0.15	58	1.35
BonaVista Canadian Equity	-0.12	61	-0.85	0.01	57	2.31*	-0.29	62	-1.53	0.19	59	2.28 *
Burgundy Canadian Equity	0.78	1	2.86*	-0.01	1	-1.78	1.03	1	2.73*	-0.28	2	-1.71
Canada Life Combined Equity S-9	-0.22	64	-1.41	0.01	57	2.46*	-0.41	64	-1.92	0.22	63	2.33*
CC & L Canadian Equity	0.34	17	1.95	-0.01	1	-3.14*	0.54	9	2.22*	-0.27	3	-2.55*
CIBC Canadian Equity S&P/TSX Index	0.00	54	-0.82	0.00	18	5.17*	-0.01	55	-1.87	0.01	41	4.06*
CIBC Canadian Equity-PF	-0.01	55	-0.06	0.00	18	-1.71	0.07	41	0.54	-0.09	15	-1.58
Co-operators Canadian Equity-PF	0.31	20	1.96*	0.00	18	-0.73	0.27	25	1.22	-0.01	32	-0.10
Desjardins Fin'l Fiera Cdn Equity GARP	-0.05	57	-0.33	0.00	18	-0.92	0.00	52	0.01	-0.07	24	-0.77
Desjardins Fin'l MB Cdn Equity Grth	0.29	24	1.75	-0.01	1	-1.64	0.28	22	1.21	-0.07	21	-0.73

Table 3 continued

	Treynor-Mazuy market-timing						Henriksson-Merton market-timing					
	alpha	Rank	T - stat	Gamma	Rank	T - stat	alpha	Rank	T - stat	Gamma	Rank	T - stat
Fidelity Canadian Disciplined Equity MF	0.34	**15**	2.38*	0.00	**18**	1.04	0.15	**35**	0.76	0.15	**57**	1.76
Fidelity Canadian Large Cap MF	0.20	**33**	1.02	0.01	**57**	1.69	-0.01	**53**	-0.03	0.21	**61**	1.80
Fidelity True North MF	0.23	**31**	1.46	0.00	**1**	0.79	0.07	**42**	0.31	0.13	**55**	1.35
Genus Canadian Equity	0.06	**46**	0.52	0.01	**1**	2.50*	-0.14	**59**	-0.88	0.19	**60**	2.81*
Greystone Canadian Equity	0.50	**6**	2.67*	-0.01	**18**	-1.99*	0.66	**7**	2.54*	-0.20	**8**	-1.74
Guardian Canadian Equity	0.44	**9**	2.33*	-0.01	**18**	-2.08*	0.60	**8**	2.32*	-0.20	**6**	-1.81
Guardian Cdn Growth Equity	0.28	**26**	1.33	0.00	**18**	-0.94	0.31	**16**	1.08	-0.08	**19**	-0.60
GWL Canadian Equity #3	0.17	**37**	1.16	0.00	**18**	-0.89	0.21	**31**	1.05	-0.06	**26**	-0.70
GWL Index Canadian Equity	0.01	**49**	1.03	0.00	**1**	0.07	0.01	**47**	0.67	0.00	**35**	0.14
Highstreet Canadian Equity	0.41	**10**	2.75*	0.00	**57**	-0.82	0.42	**12**	2.02*	-0.04	**29**	-0.44
Howson Tattersall Can Value Eq (Foreign)	0.72	**2**	2.79*	-0.01	**1**	-2.42*	0.92	**2**	2.57*	-0.30	**1**	-1.89
HSBC Canadian Equity	-0.15	**63**	-1.77	0.01	**1**	3.09*	-0.28	**61**	-2.35*	0.15	**56**	2.85*
IA Canadian Equity Value-PF	0.37	**11**	1.96*	-0.01	**1**	-1.54	0.43	**11**	1.64	-0.12	**10**	-1.02
JF Canadian Equity Fund	0.68	**3**	3.49*	-0.01	**18**	-1.23	0.73	**5**	2.69*	-0.10	**13**	-0.82
KBSH Canadian Growth Equity	0.08	**44**	0.61	-0.01	**1**	-1.74	0.08	**39**	0.44	-0.07	**23**	-0.84
Legg Mason Batterymarch Cdn Core Equity	-0.15	**62**	-1.58	0.00	**18**	1.14	-0.14	**58**	-1.03	0.02	**44**	0.42
Leith Wheeler Canadian Equity Sr B	0.55	**5**	2.20*	-0.01	**18**	-1.63	0.75	**4**	2.19 *	-0.23	**5**	-1.54
LL Canadian Equity (LC)	0.16	**38**	1.35	0.00	**18**	-0.32	0.11	**37**	0.69	0.01	**42**	0.21
Manulife Canadian Equity	0.12	**41**	1.28	0.00	**57**	1.29	0.03	**44**	0.23	0.09	**53**	1.51
Manulife Canadian Large Cap Val Eq (MFC)	0.08	**45**	0.48	0.00	**1**	-1.15	0.21	**33**	0.95	-0.12	**9**	-1.33
Manulife Fidelity Canadian Large Cap	0.20	**32**	1.03	0.01	**18**	1.67	-0.01	**54**	-0.04	0.21	**62**	1.81
Manulife McLean Budden Cdn Equity Growth	0.29	**23**	1.73	-0.01	**18**	-1.67	0.27	**24**	1.16	-0.07	**22**	-0.70
Manulife MFC Global Pooled Cdn Index	-0.02	**56**	-0.89	0.00	**18**	1.84	-0.04	**56**	-1.66	0.02	**43**	2.18*
Manulife SEAMARK Canadian Equity	0.35	**14**	1.85	0.00	**57**	0.11	0.28	**21**	1.06	0.05	**48**	0.41

Table 3 continued

	Treynor-Mazuy market-timin						Henriksson-Merton market-timing					
	alpha	Rank	T - stat	Gamma	Rank	T - stat	alpha	Rank	T - stat	Gamma	Rank	T - stat
Mawer Canadian Equity Pooled	0.50	**7**	2.06*	-0.01	**1**	-1.36	0.69	**6**	2.09*	-0.20	**7**	-1.41
McLean Budden Canadian Equity Growth-PF	0.30	**22**	1.79	-0.01	**1**	-1.71	0.29	**19**	1.24	-0.08	**17**	-0.77
McLean Budden Canadian Equity Value-PF	0.36	**13**	2.08*	0.00	**18**	0.47	0.28	**20**	1.17	0.07	**52**	0.67
McLean Budden Canadian Equity-PF	0.31	**21**	2.17*	0.00	**18**	-0.75	0.28	**23**	1.41	-0.01	**31**	-0.15
MFC Global Pooled Canadian Index	0.00	**53**	0.31	0.00	**18**	1.47	0.00	**49**	0.37	0.00	**36**	0.51
Montrusco Bolton Canadian Equity	0.24	**29**	1.49	-0.01	**1**	-1.33	0.31	**17**	1.38	-0.10	**11**	-1.03
Montrusco Bolton Canadian Equity+	0.34	**16**	1.33	-0.01	**1**	-1.27	0.34	**13**	0.96	-0.10	**14**	-0.61
Montrusco Bolton Quantitative Cdn Eq	-0.27	**65**	-0.48	0.04	**65**	3.11*	-1.00	**65**	-1.30	0.91	**65**	2.70 *
Natcan Canadian Equity Pooled	0.26	**27**	1.16	0.00	**18**	0.55	0.11	**38**	0.35	0.12	**54**	0.90
PCJ Canadian Equity	0.29	**25**	1.99*	0.00	**18**	0.03	0.22	**30**	1.11	0.04	**46**	0.43
PH&N Canadian Equity Sr O	0.19	**34**	1.26	0.00	**18**	-0.87	0.21	**32**	0.98	-0.05	**27**	-0.52
Russell Canadian Equity	0.15	**40**	1.10	0.00	**18**	-0.28	0.12	**36**	0.65	0.00	**37**	0.06
Sceptre Canadian Equity-PF	0.32	**19**	2.42*	0.00	**18**	-1.45	0.33	**14**	1.81	-0.06	**25**	-0.77
Scheer Rowlett Canadian Equity	0.50	**8**	2.52*	-0.01	**1**	-1.16	0.52	**10**	1.91	-0.08	**16**	-0.67
SEAMARK Canadian Equity	0.37	**12**	1.91	0.00	**18**	0.08	0.31	**18**	1.17	0.04	**45**	0.32
SEI Canadian Equity	0.33	**18**	2.42*	0.00	**18**	-1.34	0.32	**15**	1.66	-0.04	**28**	-0.54
SSgA S&P/TSX Composite Index	0.01	**51**	2.00*	0.00	**18**	-0.79	0.01	**48**	1.80	0.00	**33**	-0.83
Standard Life Canadian Equity	0.18	**36**	1.90	0.00	**18**	-1.32	0.25	**27**	1.91	-0.08	**18**	-1.31
Standard Life Canadian Equity Index	0.04	**47**	1.35	0.00	**18**	-1.51	0.05	**43**	1.30	-0.02	**30**	-1.15
Standard Life Capped Canadian Equity	0.24	**30**	1.85	0.00	**18**	-0.05	0.22	**29**	1.27	0.01	**38**	0.07
Standard Life Core Canadian Equity	0.19	**35**	1.92	0.00	**18**	-1.31	0.26	**26**	1.90	-0.07	**20**	-1.28
TD Emerald Canadian Equity	0.02	**48**	3.24*	0.00	**18**	0.43	0.01	**46**	1.39	0.01	**39**	1.46
UBS (Canada) Canadian Equity	0.08	**43**	1.32	0.00	**18**	1.52	0.03	**45**	0.35	0.06	**49**	1.50

Table 4
Correlations between Risk-Adjusted measures for the 65 funds 1/99-12/08

This table shows the correlations between Jensen's alpha, Sharpe Ratio, Treynor Ratio and M-Squared.

	Jensen's alpha	Sharpe Ratio	Treynor Ratio	M-Squared
Jensen's alpha	1			
Sharpe Ratio	0.95	1		
Treynor Ratio	0.93	0.98	1	
M-Squared	0.95	1.00	0.98	1

Table 5
The periodic returns of the 65 funds 1/99-12/08

The table contains the best 12, 36 and 60 months and the worst 12, 36, and 60 months period return (percentage) of 65 Canadian Pooled Equity funds and their rankings based on the highest to the lowest return.

	Best 12 month		Worst 12 month		Best 36 month		Worst 36 month		Best 60 Month		Worst 60 Month	
	Return	Rank	Return	Rank	Return	Rank	Return	Rank	Return	Rank	Return	Rank
AIG Canadian Equity	4.63	3	-3.5	51	1.96	42	-0.77	47	1.84	2	0.18	49
Altamira Pooled Cdn Equity	4.74	2	-3.00	16	2.01	21	-0.72	46	1.63	29	0.29	32
AMI Pooled Canadian Equity	3.89	29	-3.41	46	1.97	33	-0.67	42	1.58	46	0.27	34
Astra Canadian Index-PF	4.09	24	-3.26	32	1.95	43	-0.95	53	1.60	35	0.07	53
Astra Natcan Canadian Equity-PF	3.81	32	-3.33	43	1.93	47	-1.10	65	1.53	54	0.03	63
Beutel Goodman Canadian Equity-PF	2.85	58	-2.31	2	1.83	57	-0.08	2	1.47	61	0.45	9
BGI Active Canadian Equity	4.54	4	-3.16	22	2.14	8	-0.83	48	1.69	17	0.26	35
BGI S&P/TSX Composite Index Class A	4.19	10	-3.29	35	1.97	30	-0.96	54	1.6	36	0.06	54
Bissett Canadian Equity	2.73	61	-3.13	19	1.84	56	-0.62	38	1.33	66	0.21	46
BonaVista Canadian Equity	4.17	15	-3.63	54	2.18	4	-0.88	49	1.74	6	0.26	36
Burgundy Canadian Equity	2.99	56	-3.04	18	2.02	20	-0.25	10	1.74	7	0.43	12
Canada Life Combined Equity S-9	3.87	30	-3.54	52	2.07	16	-1.30	66	1.71	13	-0.10	67
CC & L Canadian Equity	2.62	63	-3.01	17	1.96	36	-0.50	32	1.67	20	0.36	23
CIBC Canadian Equity S&P/TSX Index	4.19	11	-3.31	41	1.96	41	-0.98	60	1.60	37	0.06	55
CIBC Canadian Equity-PF	3.55	41	-3.70	57	1.83	58	-0.91	51	1.51	58	0.04	62
Co-operators Canadian Equity-PF	3.7	37	-3.30	40	2.01	23	-0.48	27	1.60	38	0.39	18
Desjardins Fin'l Fiera Cdn Equity GARP	3.36	45	-3.83	62	1.83	59	-0.64	40	1.5	59	0.19	48
Desjardins Fin'l MB Cdn Equity Grth	4.13	19	-3.88	63	1.98	26	-0.48	28	1.72	11	0.24	38
Fidelity Canadian Disciplined Equity MF	4.49	6	-3.42	47	2.10	15	-0.30	12	1.74	8	0.45	10

Table 5 continued

	Best 12 month		Worst 12 month		Best 36 month		Worst 36 month		Best 60 Month		Worst 60 Month	
	Return	Rank	Return	Rank	Return	Rank	Return	Rank	Return	Rank	Return	Rank
Fidelity Canadian Large Cap MF	4.52	**5**	-2.71	**6**	2.10	**14**	-0.40	**19**	1.67	**21**	0.56	**2**
Fidelity True North MF	3.50	**42**	-3.27	**34**	2.01	**22**	-0.20	**7**	1.67	**22**	0.54	**4**
Genus Canadian Equity	3.84	**31**	-3.24	**27**	2.14	**9**	-0.43	**24**	1.69	**18**	0.43	**13**
Greystone Canadian Equity	3.67	**38**	-3.74	**58**	2.04	**18**	-0.39	**18**	1.71	**14**	0.43	**14**
Guardian Canadian Equity	2.54	**64**	-2.88	**9**	1.97	**29**	-0.11	**3**	1.66	**24**	0.49	**6**
Guardian Cdn Growth Equity	3.03	**55**	-3.17	**24**	2.11	**12**	-0.33	**16**	1.65	**25**	0.40	**17**
GWL Canadian Equity #3	3.98	**27**	-3.80	**60**	1.90	**52**	-0.68	**43**	1.49	**60**	0.14	**50**
GWL Index Canadian Equity	4.17	**14**	-3.30	**38**	1.95	**44**	-0.97	**58**	1.60	**39**	0.05	**60**
Highstreet Canadian Equity	3.62	**40**	-3.67	**56**	2.19	**3**	-0.41	**20**	1.80	**3**	0.43	**15**
Howson Tattersall Can Value Eq (Foreign)	2.79	**60**	-3.23	**26**	1.88	**54**	-0.51	**33**	1.40	**63**	0.20	**47**
HSBC Canadian Equity	4.31	**9**	-3.20	**25**	1.67	**66**	-1.03	**64**	1.37	**65**	-0.07	**66**
IA Canadian Equity Value-PF	2.33	**65**	-2.95	**12**	1.81	**62**	-0.42	**23**	1.43	**62**	0.31	**29**
JF Canadian Equity Fund	3.08	**53**	-2.36	**3**	2.00	**24**	-0.18	**4**	1.57	**48**	0.62	**1**
KBSH Canadian Growth Equity	4.00	**26**	-3.82	**61**	1.92	**48**	-0.98	**61**	1.53	**55**	0.02	**64**
Legg Mason Batterymarch Cdn Core Equity	3.47	**43**	-3.26	**33**	1.75	**65**	-1.02	**63**	1.56	**49**	-0.03	**65**
Leith Wheeler Canadian Equity Sr B	3.12	**52**	-3.15	**21**	2.14	**7**	-0.29	**11**	1.67	**23**	0.47	**7**
LL Canadian Equity (LC)	3.32	**46**	-2.97	**15**	1.96	**35**	-0.49	**31**	1.63	**30**	0.37	**20**
Manulife Canadian Equity	4.13	**18**	-3.46	**48**	2.17	**6**	-0.65	**41**	1.75	**5**	0.42	**16**
Manulife Canadian Large Cap Val Eq (MFC)	2.71	**62**	-3.47	**50**	2.13	**10**	-0.64	**39**	1.62	**31**	0.30	**30**
Manulife Fidelity Canadian Large Cap	4.48	**7**	-2.69	**5**	2.12	**11**	-0.41	**21**	1.68	**19**	0.56	**3**
Manulife McLean Budden Cdn Equity Growth	4.08	**25**	-3.89	**64**	1.98	**27**	-0.48	**29**	1.73	**9**	0.24	**39**
Manulife MFC Global Pooled Cdn Index	4.13	**20**	-3.30	**39**	1.96	**40**	-0.99	**62**	1.61	**32**	0.05	**61**
Manulife SEAMARK Canadian Equity	3.14	**51**	-2.95	**11**	1.80	**64**	-0.18	**6**	1.53	**56**	0.36	**24**

Table 5 continued

	Best 12 month		Worst 12 month		Best 36 month		Worst 36 month		Best 60 Month		Worst 60 Month	
	Return	Rank	Return	Rank	Return	Rank	Return	Rank	Return	Rank	Return	Rank
Mawer Canadian Equity Pooled	2.27	**66**	-2.80	**8**	1.86	**55**	-0.21	**8**	1.54	**51**	0.47	**8**
McLean Budden Canadian Equity Growth-PF	4.11	**23**	-3.90	**65**	1.98	**28**	-0.48	**30**	1.73	**10**	0.24	**40**
McLean Budden Canadian Equity Value-PF	3.16	**50**	-2.59	**4**	1.81	**61**	-0.30	**13**	1.39	**64**	0.33	**28**
McLean Budden Canadian Equity-PF	3.66	**39**	-3.17	**23**	1.82	**60**	-0.38	**17**	1.53	**57**	0.29	**33**
MFC Global Pooled Canadian Index	4.16	**17**	-3.29	**36**	1.96	**38**	-0.97	**56**	1.60	**40**	0.06	**56**
Montrusco Bolton Canadian Equity	3.46	**44**	-3.65	**55**	1.95	**45**	-0.47	**26**	1.54	**52**	0.34	**26**
Montrusco Bolton Canadian Equity+	2.86	**57**	-4.03	**66**	2.11	**13**	-0.61	**37**	1.61	**33**	0.24	**41**
Montrusco Bolton Quantitative Cdn Eq	7.04	**1**	-4.58	**67**	3.19	**1**	-1.55	**67**	2.40	**1**	0.37	**21**
Natcan Canadian Equity Pooled	3.18	**48**	-2.75	**7**	1.96	**34**	-0.31	**14**	1.56	**50**	0.34	**27**
PCJ Canadian Equity	4.39	**8**	-2.91	**10**	2.00	**25**	-0.57	**35**	1.70	**16**	0.24	**42**
PH&N Canadian Equity Sr O	3.17	**49**	-3.47	**49**	1.90	**51**	-0.57	**36**	1.58	**47**	0.25	**37**
Russell Canadian Equity	3.95	**28**	-3.76	**59**	2.03	**19**	-0.54	**34**	1.64	**27**	0.30	**31**
S&P/TSX Composite TR	4.18	**12**	-3.32	**42**	1.97	**31**	-0.98	**59**	1.60	**41**	0.06	**57**
Sceptre Canadian Equity-PF	3.05	**54**	-3.14	**20**	2.21	**2**	-0.22	**9**	1.79	**4**	0.53	**5**
Scheer Rowlett Canadian Equity	2.79	**59**	-3.34	**44**	2.17	**5**	-0.45	**25**	1.72	**12**	0.39	**19**
SEAMARK Canadian Equity	3.19	**47**	-2.96	**14**	1.81	**63**	-0.18	**5**	1.54	**53**	0.36	**25**
SEI Canadian Equity	3.75	**33**	-3.60	**53**	2.05	**17**	-0.42	**22**	1.71	**15**	0.37	**22**
SSgA S&P/TSX Composite Index	4.18	**13**	-3.30	**37**	1.96	**39**	-0.97	**57**	1.6	**42**	0.06	**58**
Standard Life Canadian Equity	3.70	**36**	-3.25	**30**	1.90	**50**	-0.69	**45**	1.6	**43**	0.24	**43**
Standard Life Canadian Equity Index	4.12	**21**	-3.38	**45**	1.97	**32**	-0.97	**55**	1.65	**26**	0.06	**59**
Standard Life Capped Canadian Equity	3.70	**35**	-3.24	**29**	1.89	**53**	-0.31	**15**	1.59	**45**	0.44	**11**
Standard Life Core Canadian Equity	3.70	**34**	-3.24	**28**	1.90	**49**	-0.69	**44**	1.61	**34**	0.24	**44**
TD Emerald Canadian Equity	4.17	**16**	-3.26	**31**	1.96	**37**	-0.91	**50**	1.60	**44**	0.09	**51**
TSX DEX Canadian Trsy Bill 30 Day	0.44	**67**	0.18	**1**	0.38	**67**	0.20	**1**	0.32	**67**	0.22	**45**
UBS (Canada) Canadian Equity	4.11	**22**	-2.96	**13**	1.94	**46**	-0.92	**52**	1.64	**28**	0.09	**52**

Table 6
Return and Risk for the 10 portfolios 1/99-12/08

The 10 portfolios are 100 percent of PH&N, Beutel Goodman, Montrusco Bolton Quantitative and TSX composite return. 50/50 of PH&N and Beutel Goodman, PH&N and TSX composite return, PH&N and Montrusco Bolton Quantitative, Beutel Goodman and TSX composite return, Beutel Goodman and Montrusco Bolton Quantitative, and Montrusco Bolton Quantitative and TSX Composite Return. Geometric means are ranked from highest to lowest. Standard deviations and betas are ranked from lowest to highest.

	Mean		Risk level			
	Geometric Mean (%)	Rank	Standard Deviation (%)	Highest risk to Lowest	Beta	Highest risk to lowest
Beutel & Montrusco	0.106	**2**	5.07	**4**	0.92	**5**
Beutel & TSX	0.070	**7**	3.70	**8**	0.76	**8**
Beutel Goodman Canadian Equity-PF	0.089	**5**	3.27	**10**	0.52	**10**
Montrusco & TSX	0.090	**4**	6.01	**2**	1.16	**2**
Montrusco Bolton Quantitative Cdn Eq	0.118	**1**	8.12	**1**	1.32	**1**
PH&N & Beutel	0.076	**6**	3.51	**9**	0.67	**9**
PH&N & Montrusco	0.094	**3**	5.63	**3**	1.07	**3**
PH&N & TSX	0.059	**9**	4.27	**6**	0.91	**6**
PH&N Canadian Equity Sr O	0.066	**8**	4.04	**7**	0.81	**7**
S&P/TSX Composite TR	0.050	**10**	4.65	**5**	1.00	**4**

Table 7

Portfolios Risk-Adjusted Measures 1/99-12/08

This table contains the Sharpe Ratio, M-Squared (%), Treynor Ratio, Jensen's alpha (%) and Jensen's alpha T-statistics for the 10 portfolios. In addition,

they are all ranked from the highest to the lowest based on those four measures.

	Risk-Adjusted Ratios								
	Sharpe Ratio	Rank	M-Squared (%)	Rank	Treynor Ratio (%)	Rank	Jensen's Alpha (%)	Rank	T-Stat
Beutel & Montrusco	0.14	**2**	0.95	**2**	0.79	**2**	0.49	**2**	1.93
Beutel & TSX	0.10	**7**	0.75	**7**	0.48	**7**	0.17	**7**	1.70
Beutel Goodman Canadian Equity-PF	0.15	**1**	0.96	**1**	0.92	**1**	0.34	**4**	1.70
Montrusco & TSX	0.10	**6**	0.76	**6**	0.53	**6**	0.32	**5**	1.31
Montrusco Bolton Quantitative Cdn Eq	0.12	**3**	0.85	**3**	0.74	**3**	0.64	**1**	1.31
PH&N & Beutel	0.12	**5**	0.82	**5**	0.61	**5**	0.23	**6**	1.54
PH&N & Montrusco	0.12	**4**	0.83	**4**	0.61	**4**	0.38	**3**	1.56
PH&N & TSX	0.07	**9**	0.61	**9**	0.33	**9**	0.06	**9**	0.93
PH&N Canadian Equity Sr O	0.08	**8**	0.67	**8**	0.41	**8**	0.12	**8**	0.93
S&P/TSX Composite TR	0.06	**10**	0.54	**10**	0.26	**10**	0.00	**10**	0.00

Table 8
Correlations between Risk-Adjusted measures for the 10 portfolios
1/99-12/08

This table shows the correlations between Jensen's alpha, Sharpe Ratio, Treynor Ratio and M-Squared

for the 10 portfolios.

	Jensen's Alpha	Sharpe Ratio	Treynor Ratio	M-Squared
Jensen's Alpha	1			
Sharpe Ratio	**0.81**	1		
Treynor Ratio	**0.82**	**0.98**	1	
M-Squared	**0.81**	**1.00**	**0.98**	1

Table 9
The periodic returns of the 10 portfolios 1/99-12/08

This table contains the return for the 10 portfolios based on the last 3 months, 1 year, 3 years, 5 years, 10 years and Y-T-D. The returns are ranked from the highest to the lowest. All returns are in percentage.

	Last 3 Months		Last 1 Year		Last 3 Years		Last 5 Years		Last 10 Years		Y-T-D	
	Return	Rank	Return	Rank	Return	Rank	Return	Rank	Return	Rank	Y-T-D	Rank
Beutel & Montrusco	-6.3	**2**	-2.93	**4**	-0.07	**1**	0.71	**2**	0.88	**2**	-2.93	**4**
Beutel & TSX	-6.48	**3**	-2.64	**2**	-0.24	**4**	0.4	**6**	0.58	**7**	-2.64	**2**
Beutel Goodman Canadian Equity-PF	-4.74	**1**	-2.02	**1**	-0.08	**2**	0.45	**5**	0.71	**5**	-2.02	**1**
Montrusco & TSX	-8.05	**6**	-3.59	**8**	-0.25	**5**	0.64	**3**	0.72	**4**	-3.59	**8**
Montrusco Bolton Quantitative Cdn Eq	-7.87	**5**	-3.98	**10**	-0.13	**3**	0.91	**1**	0.94	**1**	-3.98	**10**
PH&N & Beutel	-6.52	**4**	-2.74	**3**	-0.32	**7**	0.35	**7**	0.63	**6**	-2.74	**3**
PH&N & Montrusco	-8.07	**7**	-3.67	**9**	-0.32	**6**	0.61	**4**	0.78	**3**	-3.67	**9**
PH&N & TSX	-8.26	**9**	-3.37	**6**	-0.49	**9**	0.3	**9**	0.49	**9**	-3.37	**6**
PH&N Canadian Equity Sr O	-8.29	**10**	-3.47	**7**	-0.57	**10**	0.25	**10**	0.54	**8**	-3.47	**7**
S&P/TSX Composite TR	-8.23	**8**	-3.28	**5**	-0.41	**8**	0.34	**8**	0.43	**10**	-3.28	**5**

Table 10
Market-Timing coefficients of the 10 portfolios 1/99-12/08

Treynor-Mazuy Market-Timing measure and the Henriksson-Merton Market-Timing measure alphas and gammas from the regressions

$r_{pt} - r_{ft} = \alpha_p + \beta_p (r_{mt} - r_{ft}) + \gamma_p (r_{mt} - r_{ft})^2 + u_{pt}$ and $r_{pt} - r_{ft} = \alpha_p + \beta_{dp} (r_{mt} - r_{ft}) + \gamma_p \max (0, (r_{mt} - r_{ft})) + u_{pt}$.

The table also includes the ranks based on the alphas and gammas from the highest to the lowest and their T-statistics. T-statistics with a '*' means that alpha is significant at 5 percent significance level which T – statistics is greater than the absolute value of 1.96.

	Treynor-Mazuy market-timing						Henriksson-Merton market-timing					
	alpha (%)	Rank	T-stat	gamma	Rank	T-stat	alpha (%)	Rank	T-stat	gamma	Rank	T-stat
Beutel & Montrusco	0.16	**5**	0.56	0.01	**4**	2.16*	-0.09	**7**	-0.24	0.32	**4**	1.85
Beutel & TSX	0.30	**3**	2.53*	-0.01	**10**	-2.02*	0.41	**3**	2.50*	-0.13	**8**	-1.83
Beutel Goodman Canadian Equity-PF	0.59	**1**	2.53*	-0.01	**8**	-2.03*	0.81	**1**	2.50*	-0.26	**10**	-1.83
Montrusco & TSX	-0.13	**9**	-0.48	0.02	**3**	3.11*	-0.50	**9**	-1.30	0.45	**2**	2.70*
Montrusco Bolton Quantitative Cdn Eq	-0.27	**10**	-0.48	0.04	**1**	3.11*	-1.00	**10**	-1.30	0.91	**1**	2.70*
PH&N & Beutel	0.39	**2**	2.24*	-0.01	**9**	-1.74	0.51	**2**	2.10*	-0.15	**9**	-1.45
PH&N & Montrusco	-0.04	**8**	-0.13	0.02	**2**	2.85*	-0.39	**8**	-1.02	0.43	**3**	2.55*
PH&N & TSX	0.10	**6**	1.26	0.00	**6**	-0.87	0.11	**5**	0.99	-0.02	**6**	-0.52
PH&N Canadian Equity Sr O	0.19	**4**	1.26	0.00	**5**	-0.87	0.21	**4**	0.98	-0.05	**7**	-0.52
S&P/TSX Composite TR	0.01	**7**	0.19	0.00	**7**	-0.38	0.03	**6**	0.05	0.00	**5**	-0.08

Note: Three out of ten of the alphas in Treynor-Mazuy market-timing measure and three out ten of the alphas in Henriksson-Merton market-timing measure are negative numbers. In addition, none of alphas is significant at 5% significance level, and three out of ten of alphas in Treynor-mazuy and Henriksson-Merton are significant at 5% significance level. Six gammas and three gammas are significant of Treynor-Mazuy and Henriksson-Merton market-timing measures.

Table 11
Correlation between portfolios 1/99-12/08

This table contains the correlations between the 10 portfolios, which are 100 percent of PH&N, Beutel Goodman, Montrusco Bolton Quantitative and TSX composite return. 50/50 of PH&N and Beutel Goodman, PH&N and TSX composite return, PH&N and Montrusco Bolton Quantitative, Beutel Goodman and TSX composite return, Beutel Goodman and Montrusco Bolton Quantitative, and Montrusco Bolton Quantitative and TSX Composite Return.

	S&P/TSX Composite	PH&N	Beutel Goodman	Montrusco Bolton	PH&N & TSX	PH&N & Beutel	PH&N & Montrusco	Beutel & Montrusco	Beutel & TSX	Montrusco & TSX
S&P/TSX Composite TR	1.00	0.93	0.74	0.76	0.99	0.88	0.88	0.84	0.95	0.90
PH&N Canadian Equity Sr O	0.93	1.00	0.84	0.68	0.98	0.97	0.85	0.81	0.96	0.82
Beutel Goodman Canadian Equity-PF	0.74	0.84	1.00	0.50	0.80	0.95	0.66	0.72	0.91	0.62
Montrusco Bolton Quantitative Cdn Eq	**0.76**	**0.68**	**0.50**	**1.00**	**0.73**	**0.62**	**0.96**	**0.96**	**0.69**	**0.97**
PH&N & TSX	0.99	0.98	0.80	0.73	1.00	0.94	0.88	0.84	0.97	0.87
PH&N & Beutel	0.88	0.97	0.95	0.62	0.94	1.00	0.80	0.80	0.97	0.76
PH&N & Montrusco	0.88	0.85	0.66	0.96	0.88	0.80	1.00	0.98	0.85	0.99
Beutel & Montrusco	0.84	0.81	0.72	0.96	0.84	0.80	0.98	1.00	0.85	0.97
Beutel & TSX	0.95	0.96	0.91	0.69	0.97	0.97	0.85	0.85	1.00	0.84
Montrusco & TSX	0.90	0.82	0.62	0.97	0.87	0.76	0.99	0.97	0.84	1.00

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