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Performance Persistence: New Evidence for the Finnish Mutual Fund Market

ABSTRACT

This study investigates the short term performance persistence of Finnish stock, bond, and balanced funds during the time period 1.1.1995–30.6.1998 using a sample free of survivorship bias. The funds are ranked based on the performance in a six month ranking period and winner (loser) fund portfolios are formed. The performance of the prior winners and losers is followed in a subsequent six month performance period by following the evolution of average weekly cumulated abnormal returns of the winner (loser) portfolios. Evidence of performance persistence is found for all three fund types in that the prior winners on the average have outperformed the prior losers. The differences are furthermore statistically significant. Firstly, the study contributes to the fund literature by looking at performance persistence on more a disaggregate level than what has been done before. Secondly, as to date there are hardly any other studies measuring the persistence of bond, and especially balanced funds. Thirdly, the study changes the perception of Finnish mutual fund performance persistence.

Key words: performance persistence; performance evaluation; mutual funds

I. INTRODUCTION

In the 90's the mutual fund literature has partly taken more of a practitioners view, and a new type of studies tracking fund performance persistence, or in other words the ability of prior

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winners to repeat their superior performance, have emerged. Historical performance is used as a selling argument by fund managers, and is often taken as an indicator of future performance by the investment industry. According to the efficient market hypothesis, however, future performance should not be predictable after adjusting for risk and other pricing factors. Consequently, the usefulness of prior information should be limited to for instance risk assessment. The increasing amount of persistence studies offer an interesting synthesis of the fund persistency and the market efficiency views.

Typically most published international studies are measuring the performance of US mutual funds. Among the most cited studies of mutual fund performance persistence are Hendricks, Patel, and Zeckhauser (1993) and Goetzmann and Ibbotson (1994). Using samples of 165 and 728 equity funds for the time periods 1974–1988 and 1976–1998, respectively, the two studies coined the so called “hot hands” phenomenon, or short term performance persistence. Similarly, most subsequent studies, such as Brown and Goetzmann (1995), Malkiel (1996), and Carhart (1997) also measure performance persistence in the short run up to two years. Elton, Gruber, and Blake (1996) and Gruber (1996) measure both short and long term performance persistence, while Grinblatt and Titman (1992) and Sharpe (1995) focus on long term persistence. The international evidence of performance persistence for equity funds is strong but seems to have somewhat weakened over time. Persistence was particularly strong during the 70’s and the early 80’s, while Brown, Goetzmann, Ibbotson, and Ross (1992), Brown and Goetzmann (1995), and Malkiel (1996) find evidence of weaker persistence during the late 80’s and the early 90’s. The decrease in the predictability of fund returns could be evidence of increasing market efficiency over time. As of today evidence regarding the performance persistence of balanced and bond funds is scarce. Blake, Elton, and Gruber (1993) do not find evidence of persistence for bond funds, while Sharpe (1995) finds evidence of performance persistence for a group of funds containing stock, balanced, and bond funds. Generally, performance persistence is better documented than explained in the finance literature. Gruber (1996) advocates positive persistence to the fact that open end funds sell at net asset value, implying that management might not be priced. Brown and Goetzmann (1995) and Carhart (1997), on the other hand, find that common factors in stock returns not captured by conventional risk adjustment, might explain performance persistence. Interestingly, studies such as Shukla and Trzcinka (1994) and Carhart (1997) find evidence of a particularly strong negative performance persistence, which might be explained by the inability to short losing funds, immunity from periodic review of some managers, and finally the existence of investors with different degrees of sophistication. The methodology used in the different studies is rather similar. The first type of studies, such as for instance Grinblatt and Titman (1992), Goetzmann and Ibbotson (1994), and Christopherson, Ferson, and Glassman (1998), apply cross sectional

regressions of measures of prior performance on subsequent performance. In the second type of studies either fund rankings in many non-overlapping periods are compared, or alternatively winner and loser portfolios are formed based on prior performance measuring the subsequent raw or risk adjusted returns of the portfolios. Goetzmann and Ibbotson (1994), Brown and Goetzmann (1995), and Malkiel (1996) represent the former group of studies while Hendricks, Patel, and Zeckhauser (1993), Elton, Gruber, and Blake (1996a), Gruber (1996), and Carhart (1997) represent the latter group. Some of the earliest studies use samples only containing surviving funds, giving rise "survivorship bias", thus overstating performance persistence as demonstrated in Brown, Goetzmann, Ibbotson, and Ross (1992,1997) and Hendricks, Patel and Zeckhauser (1997).

The first Finnish funds were introduced as late as 1987 when proper legislation was put in place, and consequently the amount of Finnish fund studies is low. Typically, Finnish studies have followed their international counterparts in terms of research design. In pioneering studies using a sample of 11 funds Kasanen and Kinnunen (1990) and Kasanen, Kinnunen, Östermark, and Aaltonen (1992) find that funds have underperformed the benchmark during the time period 1988–1989. Along the same lines, Heikkilä (1993) and Liljebloom and Löflund (1995) find that only a few funds have performed better than the benchmark during the time periods 1990–1991 and 1991–1995, respectively. In more recent studies, Kallunki and Martikainen (1998) find that Finnish fund betas are downward biased due to price adjustment delays, while Sandvall (1998) in a conditional evaluation finds some evidence of positive abnormal returns for stock and bond fund. The only study that to some extent measures performance persistence is Liljebloom and Löflund (1995). No evidence of performance persistence is found although one, on the contrary, would expect that a short fund history might give some funds an "early mover" advantage, i.e. an ability to dominate the market in its early development phases in terms of knowledge, resulting in persisting superior performance. The somewhat surprising results might, however, be driven by limitations with regards to both sample and methodology. The study is conducted by statistically comparing yearly rankings of a mixed sample of stock, balanced, and bond funds which survived through a four year time period. A pooled comparison of the performance of a small sample with differing investment opportunities, furthermore using the same benchmarks regardless of fund type, might bias the results. Finally, the test design has low power and is subject to survivorship bias.

Using a sample free of survivorship bias, this study investigates the performance persistence of Finnish funds during the time period 1.1.1995–30.6.1998. The study contributes to existing literature by measuring performance persistence on a more disaggregate level than what has been done previously. Persistence is measured on a weekly level by over a six month performance period following the cumulated average abnormal returns of winner and loser

portfolios formed on the basis of a prior ranking period. By not limiting the study to equity funds this study provides an addition to the literature regarding the performance persistence of bond and especially balanced funds. Using a data set from an emerging fund market is furthermore interesting since the expectation is that performance persistence might be stronger due to a potential "early mover" advantage of certain dominating funds. Finally, the study is likely to be more robust than Liljeblom and Löflund (1995) due to improvements of both sample and test design. The study changes the perception of the performance persistence of Finnish mutual funds in that evidence of performance persistence is found for all three fund types.

The rest of the paper is organised as follows. Sections II and III describe the methodology and the data. Section IV presents the results. Finally, Section V offers a summary and conclusions.

II. METHODOLOGY

In this study performance persistence is measured by relating cumulated abnormal returns in a "performance period" to the performance in a prior "ranking period". Based on periodic rankings, the funds are either classified as winners or losers. The winner (loser) portfolios are equally weighted, and are arbitrarily selected consist of the top (bottom) 30% performers¹. The rankings are performed every 6 months and are based on the prior 6 month risk adjusted abnormal returns defined in a standard Capital Asset Pricing Model (CAPM) framework, or

$$(1) \quad R_{fund,t} - R_{f,t} = \alpha + \beta_{fund,t}(R_{m,t} - R_{f,t}),$$

where $R_{fund,t}$ is the fund return, $R_{f,t}$ is the riskfree rate, α is the measure of abnormal return (defined as return in excess of CAPM and often referred to as Jensen's alfa), $\beta_{fund,t}$ is the within sample fund beta, and finally $R_{m,t}$ is the market return. All parameters are on a weekly level.

In the performance period weekly abnormal returns are calculated for the winner and loser portfolios as follows:

$$(2) \quad AR_{portf,t+1} = R_{portf,t+1} - R_{f,t+1} - \beta_{portf,t+1}(R_{m,t+1} - R_{f,t+1}),$$

where $AR_{portf,t+1}$ is the abnormal return, $R_{portf,t+1}$ is the portfolio return, and $\beta_{portf,t+1}$ is the portfolio beta in the performance period. As can be seen Equation 2 is analogous to Equation 1 with $AR_{portf,t+1}$ being the weekly measure for abnormal return, α , on portfolio level.

¹ In case the funds amount to for instance 15, the winner (loser) portfolios would consist of the 4 funds with the best (worst) performance. Furthermore, a sensitivity analysis utilising a 20% selection criterion is made to analyze the robustness of the results.

The abnormal returns are cumulated for the 6 months subsequent to the ranking period, and the evolution over time of the average of these abnormal returns are followed. The ranking and performance periods are non-overlapping.

Performance persistence would imply that the winner portfolios on the average are associated with higher cumulated abnormal returns than the loser portfolios in the performance periods. This simply indicates that prior winners tend to outperform prior losers in following periods.

III. DATA

A. Time Frame

The study is conducted during the time period 1.1.1995–30.6.1998. The first performance period starts from 30.6.1995, implying a total of six performance periods. Due to the relatively short history of the Finnish mutual fund industry, a low amount of observations hinders usage of a longer time period. All returns are calculated as logarithms from Wednesday to Wednesday².

B. Fund Returns

The study includes Finnish stock, balanced, and bond funds³. Mutual fund net asset values were obtained from HEX Ltd and the Department of Finance at the Swedish School of Economics and Business Administration. There is no general legislation as to when the funds are to calculate the net asset values. Depending on the fund, the time of calculation typically ranges from 1 p.m. to market close at 5.30 p.m. The method and time of calculation have to be stated in the fund charter. The sample contains both surviving and disappearing funds, and is thus free of survivorship bias⁴. The table below shows the amount of funds in each evaluation period:

² Many studies involving the Finnish stock market use mid-week returns in order to mitigate a potential day-of-the-week effect. See for instance Martikainen and Puttonen (1996) for a recent study on the Finnish day-of-the-week effect.

³ No money market funds are included since the amount of such funds has been extremely low during the first three evaluation periods. Four risk funds (Arctos Futura, Gyllenberg Momentum, Mandatum Kontra, Mandatum Risk) were excluded from the stock funds category due to differing investment policies.

⁴ Survivorship bias has been an increasingly important issue in performance persistence studies. As demonstrated by Brown, Goetzmann, Ibbotson, and Ross (1992) the relationship between volatility and return in a sample truncated by survivorship gives rise to spurious persistence. Hendricks, Patel, and Zeckhauser (1997), and Brown, Goetzmann, Ibbotson, and Ross (1997) document a non-linear "J-shape" in performance persistence, implying that funds at the bottom conditional upon survival are likely to reverse their performance as a function of higher volatility. The magnitude of survivorship bias can be illustrated by the fact that for instance Carhart (1997) documents a fund disappearance of roughly 30% in his sample. By comparing samples with and without survivorship bias Malkiel (1996) and Elton, Gruber, and Blake (1996b) estimate survivorship bias to amount to 150 and 190 basis points in raw returns respectively. Brown and Goetzmann (1995), Elton, Gruber, and Blake (1996), Malkiel (1996), and Carhart (1997) are examples of studies in which effort has been made to eliminate survivorship bias, while for instance the early studies by Hendricks, Patel, and Zeckhauser (1993) and Goetzmann and Ibbotson (1994) are likely to contain survivorship bias.

TABLE 1. Amount of Funds in Evaluation Periods

PERIOD	AMOUNT OF FUNDS			
	STOCK	BALANCED	BOND	TOTAL
01.01.1995–01.01.1996	15	14	11	40
30.06.1995–30.06.1996	15	14	11	40
01.01.1996–01.01.1997	15	15	12	42
30.06.1996–30.06.1997	15	15	12	42
01.01.1997–01.01.1998	17	15	11	43
30.06.1997–30.06.1998	18	15	11	44

Each of the one year evaluation periods above contain a ranking and a performance period. The ranking and the performance period are 6 months long and naturally contain the same amount of funds.

The total amount of funds in the study ranges from 40 in the first evaluation period to 44 in the last evaluation period. The amount of stock, bond and balanced funds range from 10 to 20 implying a minimum of 3 funds in the winner (loser) portfolios.

C. Market Returns

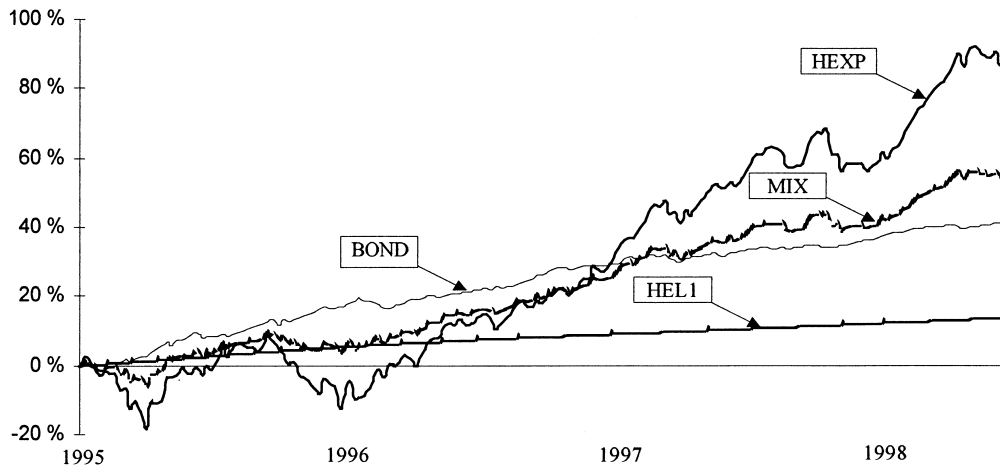
Three market factors which span the investment opportunities of the different fund types will be used as benchmarks in the evaluation. The stock funds are evaluated against the HEX-Portfolio Index, which is both dividend adjusted and in accordance with mutual fund legislation limited to a 10 percent weight for any single stock. The index was obtained from HEX Ltd and is calculated after market close at 5.30 p.m. The bond funds are evaluated against a bond index, calculated by Merita-Nordbanken Ltd at 1 p.m. An index with the weights 40-40-20 in the above two indices and a money market index calculated by Leonia Ltd at 1 p.m. is constructed for the evaluation of the balanced funds. The one month Helibor rate is used as risk-free rate throughout the study⁵ and was obtained from the Etna⁶ database. The graph below shows the development of the three indexes during the evaluation period:

⁵ The riskfree rate is converted from an annual level to weekly level as follows:

$$r_{p.w.} = \ln \left[1 + \frac{r_{p.a.}}{100} * \frac{30}{365} \right] * \frac{7}{30},$$

where $r_{p.w.}$ is the effective weekly effective riskfree return expressed in decimal form and $r_{p.a.}$ is the yearly riskfree return expressed as percentage.

⁶ The Research Institute of the Finnish Economy; Internet address: <http://www.etla.fi> (as of 30.9.1998)



HEXP stands for the HEX Portfolio index, BOND for the bond index, MIX for the 40-40-20 index used for balanced funds, and finally HEL1 for the one month Helibor rate. All returns are cumulated from a weekly level.

FIGURE 1. Cumulated Market Returns

An ideal research period would include at least one complete economic cycle. From Figure 1 it can, however, be seen that the market conditions for all fund types can be characterised as something of an up-market during most of the evaluation period. A successful fund manager varies the systematic risk of his portfolio depending on the state of the market and it might be more difficult to identify skilled fund managers in a period with no market downturns.

IV. RESULTS

In this section the empirical results are presented by fund group ⁷. Each section starts with a graphical presentation of the results in order to give the reader a quick overview. The graphs present the development of the average cumulated abnormal returns for both the prior winners and the prior losers during the performance period. Each section also contains numerical evidence presented in table form. The tables provide information regarding the statistical significance of the difference between the returns of the prior winners and losers ⁸. The section ends

⁷ A White (1980) heteroskedasticity consistent variance-covariance matrix is used in all regressions. No correction for autocorrelation is made. The results in Sandvall (1998) indicate that testing and correcting for autocorrelation would have a marginal effect on the results.

⁸ The t-values are calculated as paired comparisons of means assuming identical, unknown variances as follows: $t = (\overline{CAR}_W - \overline{CAR}_L) / \sqrt{2s^2/N}$, where the pooled estimate of the population variance is calculated according

with a graphical summary of the results for all fund types and a discussion on the sensitivity of the results to the chosen portfolio selection model.

A. Stock Funds

The evolution of the average cumulated abnormal returns of the stock funds can be seen in Figure 2:

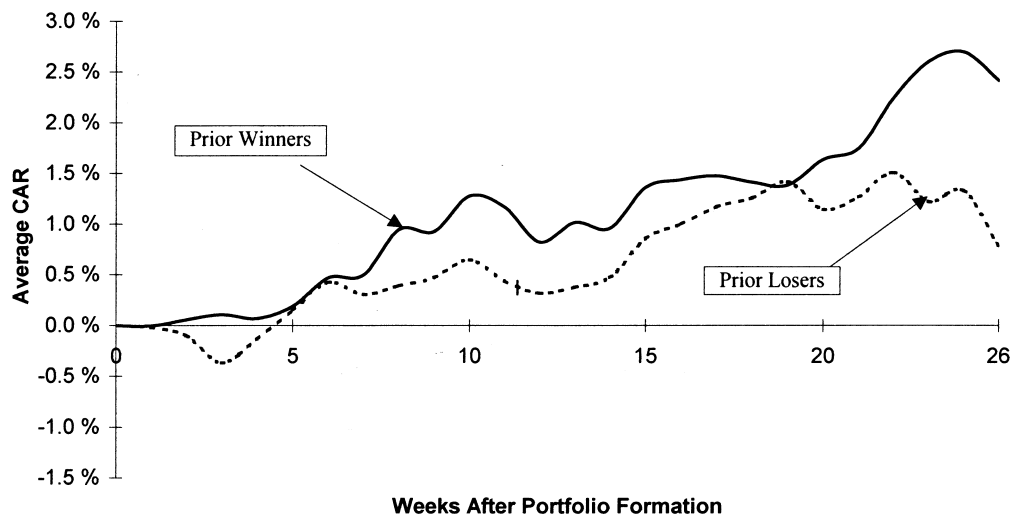


FIGURE 2. Abnormal Returns: Stock Funds

From Figure 2 it can be seen that both prior winner and losers with the exception of prior losers during the first five weeks seem to on average have outperformed the benchmark during the performance periods. Interestingly, the prior winners have higher abnormal returns than prior losers in almost the entire performance period. The largest divergence in the winner and loser returns takes place during the last five weeks in the evaluation period. The abnormal returns of the prior winner and losers seem to move in a similar manner. The correlation between the returns of the prior winners and the prior losers is 0.85.

to $s^2 = \left[\sum_{n=1}^N (CAR_{Wn} - \overline{CAR}_w)^2 + \sum_{n=1}^N (CAR_{Ln} - \overline{CAR}_l)^2 \right] / 2(N-1)$. CAR_{Wn} and CAR_{Ln} denote the cumulated abnormal return of the winner and loser portfolio in the n :th performance period, while \overline{CAR}_w and \overline{CAR}_l denote the average cumulated abnormal returns of all N individual half year performance periods tested. The same t -statistic has been used in similar settings by for instance DeBondt and Thaler (1985) and Larkomaa (1997).

Table 2 presents numerical evidence regarding the development of the average cumulated abnormal returns of the stock funds.

TABLE 2. Abnormal Returns: Stock Funds

DAYS AFTER PORTF. FORMATION	5	10	15	20	26
AVERAGE CAR/PRIOR WINNERS	0.19%	1.28%	1.36%	1.64%	2.42%
AVERAGE CAR/PRIOR LOSERS	0.15%	0.65%	0.86%	1.14%	0.78%
DIFFERENCE	0.04%	0.63%	0.50%	0.49%	1.64%
T-VALUE	(0,14)	(1,13)	(0,92)	(0,53)	(2,01*)

Average Cumulated Abnormal Returns (CAR) are reported for the prior winners and losers 5, 10, 15, 20, and 26 days after the beginning of the performance period. The statistical significance of the difference in the returns between the prior winner and losers is t-tested assuming identical variances. *, **, and *** imply that the return difference is statistically significant with a 10, 5, and 1 percent error risk.

From Table 2 it can be seen that the difference between the prior winners and the losers at the end of the performance period is 1.64 percent corresponding to 3.28 percent on a yearly level. The difference is statistically significant with a 10 percent error risk. From the table it can be seen how the largest difference in the performance occurs during the last weeks of the evaluation period.

Strongly positive average abnormal returns for both prior winners and losers is perhaps somewhat surprising. The results are, however, in line with Sandvall (1998), where stock funds in a corresponding time period (1.1.1995–27.8.1997) on the average are found to have positive alphas measured with as well conditional as unconditional methodology. This study furthermore differs from Sandvall (1998) in that a weight restricted HEX Portfolio index is used instead of the broad HEX index, which is likely to further improve perception of fund performance. The results could to some extent also be driven by downward biased systematic fund risk due to price adjustment delays on a thinly traded market. Kallunki and Martikainen (1998) indeed find that market model betas are downward biased for a sample of 33 mutual funds during the period 30.9.1996–30.9.1997. The bias is, on the other hand, likely to be small since this study in contrast to Kallunki and Martikainen (1998) is conducted using weekly returns. Naturally, it is also possible that the betas to some extent are biased since the fund net asset values and the used benchmarks are calculated at a different points in time during the day. It is, however, hard to see how this systematically would affect the results. In conclusion, the positive abnormal returns for both winner and loser portfolios are in accordance with previous

foreign research. Whether this to some extent is due to price adjustment lags or other types of bias is outside the scope of this paper.

B. Bond Funds

The evolution of the average cumulated abnormal returns of the bond funds can be seen in Figure 3:

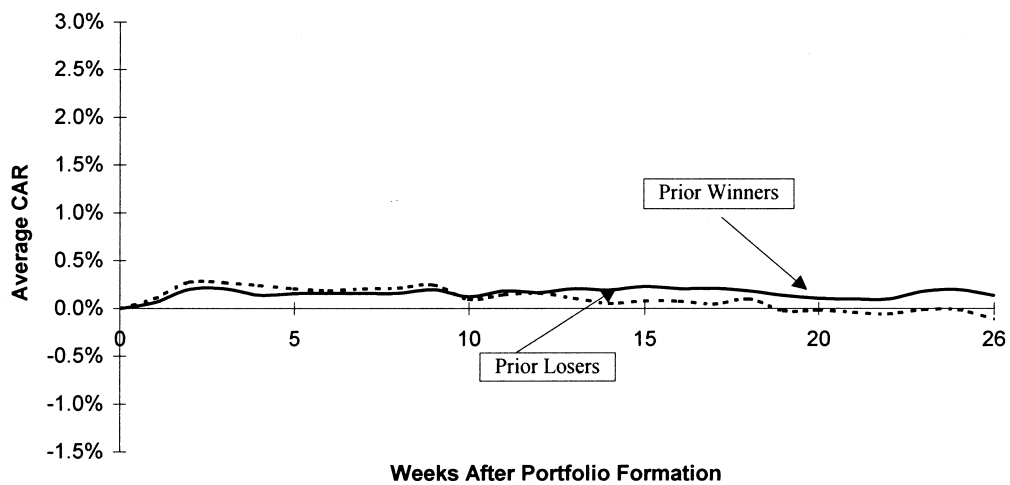


FIGURE 3. Abnormal Returns: Bond Funds

Similarly to the stock funds the prior winners have on the average outperformed the prior losers at the end of the performance period. The abnormal returns of the prior winners and losers, which are of substantially smaller magnitude than those of the stock funds, move in a similar manner until week 12, after which a divergence in the abnormal returns takes place. After week 12 the prior losers have performed somewhat worse than the prior winners. Before the divergence in returns the prior losers surprisingly have higher returns than the prior winners. The correlation between the returns of the prior winners and losers is 0.33.

Table 3 presents numerical evidence regarding the development of the average cumulated abnormal returns of the bond funds.

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From Table 3 it can be seen that the difference between the average cumulated abnormal returns of the prior winners and the prior losers at the end of the performance period is 0.25 percent, or 0.50 percent on a yearly level. The difference is statistically significant with a five percent error risk. In general the abnormal returns are of a relatively small magnitude.

TABLE 3. Abnormal Returns: Bond Funds

DAYS AFTER PORTF. FORMATION	5	10	15	20	26
AVERAGE CAR/PRIOR WINNERS	0.16%	0.12%	0.23%	0.10%	0.14%
AVERAGE CAR/PRIOR LOSERS	0.21%	0.09%	0.08%	-0.02%	-0.11%
DIFFERENCE	-0.05%	0.03%	0.15%	0.12%	0.25%
T-VALUE	(-0,38)	(0,17)	(1,55)	(1,71)	(2,42**)

Average Cumulated Abnormal Returns (CAR) are reported for the prior winners and losers 5, 10, 15, 20, and 26 days after the beginning of the performance period. The statistical significance of the difference in the returns between the prior winner and losers is t-tested assuming identical variances. *, **, and *** imply that the return difference is statistically significant with a 10, 5, and 1 percent error risk.

C. Balanced Funds

The evolution of the average cumulated abnormal returns of the balanced funds can be seen in Figure 4:

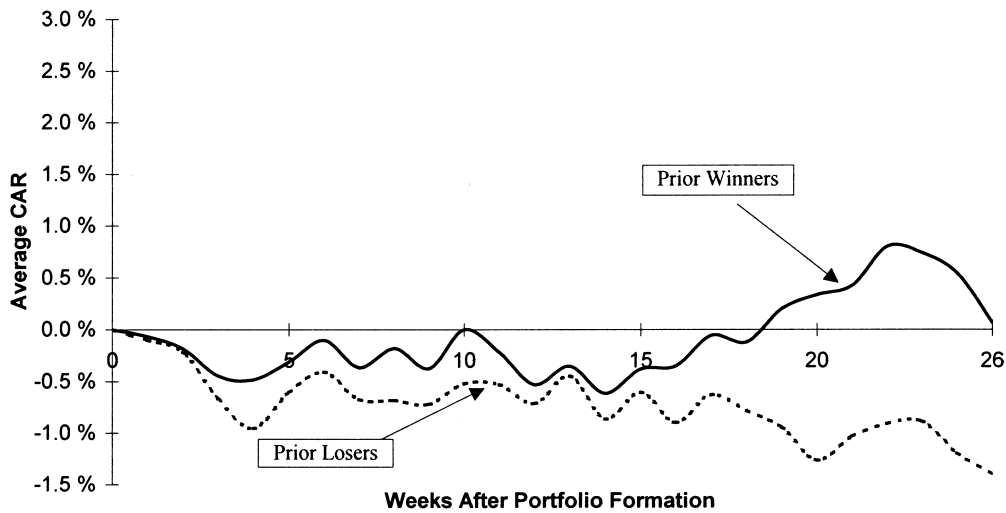


FIGURE 4. Abnormal Returns: Balanced Funds

The prior winners have on the average higher cumulated abnormal returns than the prior loser throughout the performance period. The divergence in returns seems to take place starting from week 13. The balanced funds have performed worse than the stock and the bond

funds. At the end of the performance period the prior winners have a cumulated abnormal return close to zero while the corresponding figure for the prior losers is clearly negative. The correlation between the returns of the prior winners and losers is -0.47 .

Table 4 presents numerical evidence regarding the development of the average cumulated abnormal returns of the balanced funds.

TABLE 4. Abnormal Returns: Balanced Funds

DAYS AFTER PORTF. FORMATION	5	10	15	20	26
AVERAGE CAR/PRIOR WINNERS	-0.31%	0.00%	-0.38%	0.34%	0.07%
AVERAGE CAR/PRIOR LOSERS	-0.61%	-0.52%	-0.60%	-1.26%	-1.40%
DIFFERENCE	0.30%	0.52%	0.23%	1.60%	1.47%
T-VALUE	(0,52)	(1,10)	(0,45)	(2,86**)	(1,83*)

Average Cumulated Abnormal Returns (CAR) are reported for the prior winners and losers 5, 10, 15, 20, and 26 days after the beginning of the performance period. The statistical significance of the difference in the returns between the prior winner and losers is t-tested assuming identical variances. *, **, and *** imply that the return difference is statistically significant with a 10, 5, and 1 percent error risk.

From Table 4 it can be seen that the end of period difference in the cumulated abnormal returns between the prior winners and the prior losers is 1.47 percent, or 2.94 percent on a yearly level. The difference is statistically significant with a 10 percent error risk. The difference between the prior winners and the losers is even larger around week 20 in the performance period. The difference amounts to 3.20 percent on an annual level and is statistically significant with an 5 percent error risk.

D. All Funds

Figure 5 summarises the differences in the average cumulated abnormal returns between the prior winners and the prior losers for all fund categories.

From the figure above it can be seen that the average difference in performance between prior winner and prior losers looks rather similar for stock and balanced funds, the correlation being 0.6. On the other hand, both fund types are likely to have similar investment opportunities and strategies at least in bull markets. For both stock and balanced funds the prior winners on the average tend to outperform the prior losers towards the end of the performance period. Also as far as bond funds are concerned prior winners have on the average performed better than the prior losers, the difference naturally being smaller than for stock and balanced funds

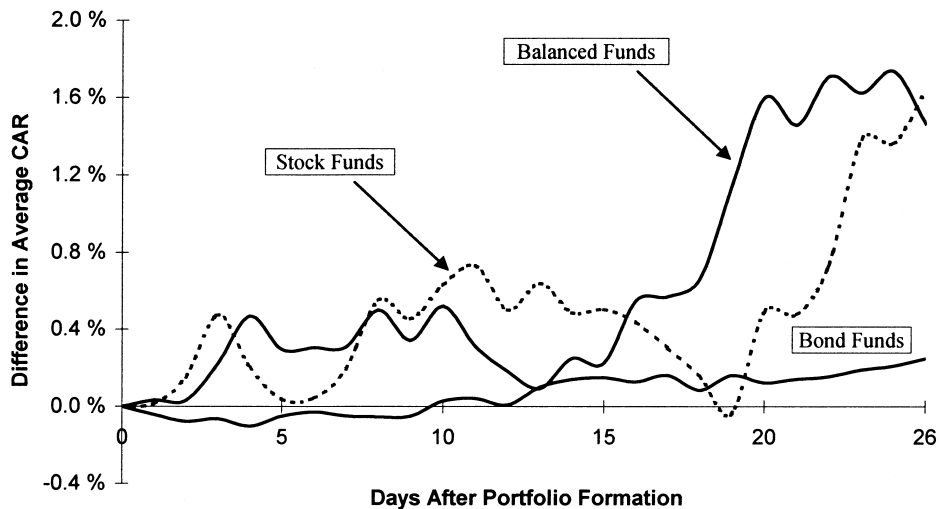


FIGURE 5. Difference in Abnormal Returns: Prior Winners vs. Losers

due to differing investment opportunities. The correlations between the winner and loser portfolios were presented in the previous section and the difference in correlations between the three types of funds is somewhat surprising. Finally, a sensitivity test has been made changing the composition of the winner(loser) portfolios to contain the top(bottom) 20% funds instead of the 30% rule used in the base case. For the stock and the balanced funds the results are robust to the chosen portfolio selection model, while the performance persistence of the bond funds slightly increases in terms of both statistical significance and difference between winner and loser portfolios.

Although the difference between the prior winners and losers on the average has been found to be statistically significant at the end of the performance period, a word of caution is in place. For all fund types there are periods during which investing in the prior losers would have been a superior strategy ⁹. Typically, investing in the prior winners has been a superior strategy in four of the six performance periods.

V. SUMMARY AND CONCLUSIONS

This study provides new insights into the performance persistence of Finnish stock, bond, and balanced funds and differs from previous studies in that the subsequent performance of prior

⁹ More details about the development of the average cumulated abnormal returns in the different performance periods are available from the author upon request. Interestingly, it seems to be the case that periods in which the prior winner do not beat the market seem to be characterised by higher market volatility in forms of sudden down- or up-turns. Further investigating such relationships is, however, out of the scope of this paper.

winners and losers is tracked on a more disaggregate level by following the evolvement of cumulated weekly average abnormal returns during a six month performance period.

On the average the prior winner and losers among the stock funds have outperformed the benchmark. This is in line with Sandvall (1998), in which stock funds have positive abnormal returns in a corresponding time period. The results in Kallunki and Martikainen (1998) indicate that the results to some extent might be driven by price adjustment delays for thinly traded assets. This study is, however, conducted on a weekly level, which is likely to eliminate most of the bias. Among the bond funds the prior winners have overperformed the benchmark, while prior losers have underperformed the benchmark. As far as balanced funds are concerned neither prior winner nor losers have managed to outperform the benchmark.

Evidence of performance persistence is found for all three fund types in that the difference between the winner and the loser portfolios are found to be statistically significant. The results are in line with the earlier posted hypothesis that emerging markets might be associated with performance persistence due to a dominating position of early movers. The divergence in the abnormal returns of the winner and loser portfolios takes place quite late in the performance period for both the stock and the balanced funds, which could be explained by similar investment opportunities and strategies in certain market conditions. The improved test design and sample changes the perception regarding performance persistence of Finnish funds in that the results differ from Liljebloom and Löflund (1995), in which no evidence of persistence is found.

The results are in line with foreign studies such as for instance Hendricks, Patel, and Zeckhauser (1993), Goetzmann and Ibbotson (1994), and Malkiel (1996), in which short term performance persistence has been documented for stock funds. In contrast to Blake, Elton, and Gruber (1993) evidence of performance persistence was found for bond funds.

This study could be extended by either changing the portfolio selection rules using the existing research design, or benchmarking the results using other methodologies for measuring performance persistence, such as for instance explicitly following fund rankings over time or applying cross sectional regressions of a measure of prior performance, such as abnormal returns, on subsequent performance. More studies tracking the performance persistence of Finnish mutual funds might in the long run give rise to the same kind of performance measurement industry which has evolved in the US, consequently putting more pressure on the Finnish mutual funds and at the end of the day benefiting the investor.

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