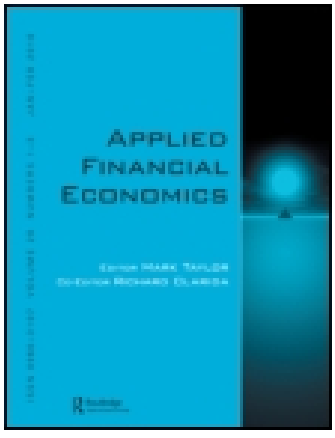

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The Wall Street Journal contests: the experts, the darts, and the efficient market hypothesis

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The Wall Street Journal contests: the experts, the darts, and the efficient market hypothesis

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A detailed analysis is presented of *The Wall Street Journal* contests pitting the US traded equity recommendations of four expert portfolio managers and strategists against the random selections of four darts. While the gross return data appear to indicate that the experts' selections achieve excess returns, we find no evidence to suggest that the experts can beat the market systematically. The experts tend to pick riskier stocks and perform no better than the darts after controlling for risk. Moreover, we find a very pronounced 'announcement effect' in which the stocks selected by the experts benefit from the publicity associated with the contest. An investor buying the stocks at closing prices the day the expert selections are announced would achieve a return lower than that of the dartboard stocks.

I. INTRODUCTION

In an attempt to test the efficient market hypothesis, the *Wall Street Journal* has for several years been running a monthly contest pitting the choices of four expert portfolio managers and strategists against the selections of four common darts. At or near the beginning of the month, four experts are each given an opportunity to select the one stock, traded on either the New York, American or NASDAQ exchange, that they believe will produce the largest gain over the next six months.[1] The four selections of the experts are then compared with the random selections of four darts, where the universe of stocks from which the selections can be made includes the same three United States' exchanges. At the end of each six-month period, the two experts whose stocks performed the best are allowed to enter the contest again, along with two other prominent money managers or portfolio strategists.

A detailed analysis of these contests is presented here. In brief, we find no evidence to support the fact that the experts are able to beat the market systematically. On the contrary, we find that the experts tend to pick riskier stocks than do the darts, yet perform no better than the darts or a broad market measure after controlling for risk.[2] We also find evidence for an 'announcement effect' in which stocks chosen by the experts tend to benefit from the publicity associated with the contest.

II. THE CONTEST RESULTS

Table 1 presents the results of the six-month contests from their inception in January 1990 through December 1992. The experts beat the market 18 times out of 30 contests while the darts beat the market 15 times.[3] The total return of the experts' selections was 9.5%, substantially better than the

[1]For the first year and a half, the contest duration was one month in length. This short horizon was abandoned in favour of a six month test to better isolate the test results from the possibility of being overly influenced by the publicity effect of the wide dissemination of the expert's selections and the reasons for them which were prominently described in *The Wall Street Journal*.

[2]We use the Standard and Poor 500 index for our market measure. We obtain very similar results when we substitute the Wilshire 5000 index for the S&P index.

[3]Our results differ slightly from those published in the *WSJ*. The *Journal* ignored dividends while we include them in order to measure total returns properly. Moreover, we obtain our returns from the CRSP tapes by compounding the daily returns included on the tape for both the expert and dart board selections as well as the S&P 500 return.

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Table 1. *Portfolio results for the Wall Street Journal contest*

Mean return on experts' portfolio	9.51
	(25.86)
Mean return on dart's portfolio	6.94
	(25.31)
Mean return on S&P 500	4.31
	(8.70)
Number of times experts beat market	18
Number of times darts beat market	15
Number of times experts beat dart	16
Number of contests	30

Note: The mean return is the percentage return over the six-month contest for the portfolio of four stocks. Standard deviations are reported in parentheses. The top three rows report averages for the mean returns across the thirty contests.

Table 2. *CAPM analysis*

	Dart stocks	Expert stocks
β	1.065	1.401*
	(0.087)	(0.090)
α	0.0004	0.0120*
	(0.0040)	(0.0040)
$\bar{\alpha}$	0.0010	0.0040
	(0.0060)	(0.0050)
N	101	101

This table reports summary statistics on the betas and excess return measures from individual stock beta regressions. Standard errors are reported in parentheses. An asterisk indicates a result which is significantly different from one (for β) or zero (for α) at the 95% level.

return of 6.9% achieved by the random selections of the darts. Moreover, the experts' selections exceeded the returns from the market, as measured by the Standard and Poor's 500 Stock Index. The higher average return earned by the experts provides some evidence against the efficient market hypothesis. However, the fact that the experts beat the market only slightly more than half the time should give one pause.

III. TESTING THE HYPOTHESIS

There is little evidence that portfolios constructed by experts will beat the market consistently. First, if the market were truly efficient, the probability that the experts' (or the darts') portfolio would beat the market in a given contest would equal 0.50, and we would expect that the experts would have won 15 out of 30 contests. The one-sided p-value for the experts beating the market at least 18 times is 0.18. At any reasonable significance level we fail to reject the hypothesis that the experts won by chance.[4,5]

A second reason to doubt the conclusion that the stocks chosen by experts beat the market follows from a comparison of the risk attributes of the different stocks. The selections of the experts may have been considerably riskier than those of the darts and the market as a whole. We computed betas and average excess returns for each stock in the contest by regressing the difference between the monthly return on individual stocks and the monthly 90 day T-bill return on the difference between the monthly return on the S&P 500 index and the T-bill rate. We used 18 monthly observations, 12 prior to the start of the contest plus the six months of the contest itself. Table 2 presents summary statistics on the betas as well as the excess returns from those regressions. The average CAPM Beta (using the S&P 500 as a benchmark) of the experts' selections was 1.401 (with a standard error of 0.090). We can, therefore, easily reject the hypotheses that $\beta = 1$ for the experts (t-statistic $= 4.46$). Barber and Loeffler (1993) report a beta for experts' picks of 1.16. Our results suggest that experts are picking considerably riskier stocks. Moreover, Barber and Loeffler do not formally test whether beta is greater than one or not. In addition, they rely on data in large part from the early one month contests which were abandoned because of the problems discussed in footnote 1. On the other hand, the average β for the dart selections was 1.065 (with a standard error of 0.087) and we cannot reject the hypothesis that $\beta = 1$ for the dart board selections ($t = 0.75$). The size of the β measure alone would be enough to explain most of the return differential in favour of the experts' selections. The extra returns of the selections could simply represent a justified reward for risk taking rather than a rejection of the efficient market hypothesis assuming that the Capital Asset Pricing Model provides a reasonable description of equilibrium pricing in the stock market. However, it should be pointed out that the beta calculations we performed on the experts' stocks did produce a positive mean α, representing excess risk adjusted returns of 1.20% and is statistically significant at the 95% level ($t = 3.0$).

One explanation for a finding of risk adjusted excess returns follows from the work of Lo and MacKinlay (1988) and others,[6] who found evidence of serial correlation in returns over short time periods such as days, weeks and months. Recall that these α's are calculated using observations, two thirds of which occur prior to the contest. One

[4]The p-value for the dart portfolios is even higher and equals 0.57. Our approach actually favours the expert (and dart) portfolios over the market as our daily S&P 500 measure does not include dividends. Hence our reported p-values are biased down. Note that our monthly S&P 500 index used later in the study does include dividends.

[5]We also tested the hypothesis that the probability of an *individual* expert beating the market equals 0.50. The experts beat the market 52.5% of the time (63 out of 120 times). The one-sided p-value for the percentage being this large under the null hypothesis is 0.32.

[6]See the summary of empirical work on serial correlation of returns in Fama (1991).

possible strategy that experts might employ to pick stocks would be to choose stocks which have experienced excess returns in the period prior to the contest in the hope that there exists some serial correlation in the monthly excess returns. If so, the experts' chances of beating the market would improve. To control for this possibility, we re-computed each stock's excess return by using the beta from the regression and computing the intercept using only the six observations from the contest period. Assuming beta is constant over the 18 month sample, this excess return corresponds to the excess return stocks earn during the actual contest. The average risk adjusted excess return during the contest ($\tilde{\alpha}$) now only equals 0.4% and is not significantly different from zero.[7] While not definitive, this last finding casts doubt on the proposition that the experts' selections earned excess returns above the justified return for bearing extra risk over the period of the contest.

So far we have considered the experts as a group. It may be that certain experts are more skilful than others and are capable of beating the market regularly even though the group as a whole is not. To investigate this possibility, we consider whether the number of repeat winners of the contest was greater than could be expected by chance. Since there are four contestants and only the top two are invited to play again, we tested the null hypothesis that the probabilities of being one of the top two contestants invited back are independent across contests and equal to 0.5. A contingency table Chi-Square test which compares differences between observed and expected frequencies can be used for this purpose.

The numbers of repeat winners and the contingency table for the contests are given in Table 3. The observed distribution of repeat winners and the expected distribution under the null hypothesis match up quite well. There are a few more one time only winners than would be expected by chance alone and a few less contestants with more than two wins than we would expect by chance alone. The statistic, m, is the sum of the squared deviations of observed from expected frequencies divided by expected frequency and is distributed as Chi-Square with three degrees of freedom under the null hypothesis. $m = 3.31$ and has a p-value of 0.346. We fail to reject at any reasonable level the null hypothesis that wins are independent with probability 0.5.

The evidence above suggests that experts cannot beat the market consistently. A related issue is whether investors can do even as well as the experts can by purchasing their recommendations. To investigate this issue, we analysed the effect of changing the starting and ending dates of the contest by one day. The official starting date of the contest is one day *before* the publication of the experts' selections. Since these selections and the experts' reasons for their choices are given prominent publicity in *The Wall Street Journal*, one might expect that the prices of the selected stocks might *rise* on the day of publication. A public investor who wished to capitalize on the supposed value of the experts' opinion would have to buy on the day *following* the start of the contest, that is the day the selections were announced. It is also possible that prices on the ending day of the contest may be distorted. An expert who selected a thinly traded over the counter stock might place a buy order for 100 shares at the end of the last day of the contest to ensure that the price of the stock closed at the asked price rather than the bid price. Thus, we recalculated the returns moving the starting and ending days one day forward. We let t_B stand for the official beginning day of the contest (one day *prior* to publication) and t_E stand for the ending day. t_{B+1} and t_{E+1} then stand for the prices one day later than the official starting and ending days. Table 4 presents the results.

The table shows that moving the ending date up one day actually causes the mean returns from both the darts and the

Table 3. *Analysis of multiple winners among experts*

	Number of contestants	
Number of wins	Observed	Expected
0	34	35.500
1	23	17.750
2	9	8.875
>2	5	8.875
m	3.31	
p-value	0.346	

There were 75 experts who participated in the six-month contests. Of these, three are still participating (but have not won more than twice) and one retired. We conduct the test using the remaining 71 contestants. If an expert participated in the contest at two different points in time, we count this person as two contestants. m is a chi-square statistic with three degrees of freedom.

Table 4. *Returns calculated from shifting beginning and ending contest dates*

	t_B to t_E	t_B to t_{E+1}	t_{B+1} to t_E
Darts			
Mean	6.94%	7.37%	7.11%
	(4.09)	(4.19)	(4.01)
Median	−0.54%	−1.46%	0.00%
Experts			
Mean	9.51%	10.37%	6.27%
	(3.83)	(3.90)	(3.64)
Median	4.23%	4.62%	2.40%

Note: Standard errors are reported in parentheses. There are 120 observations.

[7]To look at the matter a different way, the average monthly returns for the experts' selections were 1.1% per month lower during the six-month period of the contest than during the 12-month period preceeding the contest.

experts to increase slightly. Therefore, there appears to be no effort on the part of the experts to manipulate the prices on the final day of the contest. However, changing the first day of the contest by one day makes a substantial difference. The experts' average return falls by over 300 basis points while the return from the dartboard selections is essentially unchanged. It appears that investors would not benefit from following a strategy of investing in stocks picked by the experts.[8]

IV. CONCLUSION

In summary, we find that portfolios of stocks chosen by experts do not consistently beat the market. While the mean return for stocks chosen by experts exceeds the mean return for randomly chosen stocks or the return for the S&P 500, the stocks chosen by the experts are considerably riskier than the random selections and the market average. Moreover, the additional return can be wholly attributed to the publicity effect of the contest itself. Altogether, the various statistical tests in this note provide strong support for the hypothesis that experts cannot beat the market consistently. Stock picking by darts continues to be a respectable investment tool.

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[8]Barber and Loeffler (1993) also find evidence of an announcement effect. However their results pertain to stocks primarily chosen for the one month contests. As noted in footnote 1 above, the one month contests were abandoned because of the likely contamination of the results by announcement effects. Our findings show that the announcement (or publicity) effect persists in the six month contests.