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EXPLOITING THE WEEKEND EFFECT BY TRADING CLOSED-END FUNDS

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Abstract

Closed-end mutual funds allow equity portfolios to be traded like individual stocks and provide a way to implement trading strategies designed to exploit the Weekend Effect that has been observed in portfolio returns for over a century. Weekend Effect trading is aimed at taking a short position on Friday to capture a negative return on Monday. Investor behavior causes this effect either through individuals selling stocks on Mondays as a result of weekend portfolio review or short-sellers covering positions on Fridays. After transaction costs, weekend trading is most profitable after the market declines between .5% and 1.5% on Friday.

Key words: Portfolio Choice, Investment Decisions, Asset Pricing.
JEL classification: G11, G12, G14.

I. Introduction

The pattern of positive Friday returns followed by negative Monday returns was termed the Weekend Effect over two decades ago (French, 1980), but it exists in data going back to 1885 (Bessembinder and Hertzel, 1993). Investors might wonder if the Weekend Effect can be used to increase trading profits, and we apply trading rules developed from previous research to the daily returns on U.S. closed-end funds (CEFs) to explore this possibility. Our objectives in this paper are to determine the potential for generating weekend trading profits, the characteristics of the CEFs that exhibit successful weekend trading, the best trading rules to use, and the effects of transaction costs and risk.

Previous Weekend Effect research analyzes portfolio returns – mainly the S&P 500 Index and size-based portfolios – to diversify away the potentially confounding effect of unsystematic risk in individual stocks (for example, see Chow, Hsiao and Solt, 1997; Cross, 1973; French, 1980; Hsaio and Solt, 2004; Kamara, 1997; and Wang, Li, and Erickson, 1997). Practical application of this research approach is difficult because "trading" such portfolios would be executed by buying and selling the individual stocks in the portfolio – and generating round-trip transaction costs on each stock traded over the weekend.

CEFs invest in the securities of other corporations and generate income and capital gains from managing these investments. CEFs are traded like individual stocks on the New York Stock Exchange (NYSE), the American Stock Exchange (AMEX), and/or the NASDAQ, and each CEF effectively allows trading of a whole equity portfolio at one market price. In addition, CEFs can be traded any time the exchange is open, and this provides traders with liquidity and flexibility. CEFs have a single investment objective or characteristic (such as small growth or large value), which allows for measuring trading profitability while avoiding both selection bias and micro-structure problems that can occur in the trading of individual (especially small) stocks, such as lack of liquidity, non-synchronous trading, and high transaction costs.

As noted above, the Weekend Effect has a long history. Most research efforts have focused on issues surrounding the existence of the Weekend Effect, but our intent is to examine its practical nature. CEFs provide an excellent vehicle to determine whether the Weekend Effect can be exploited to generate trading profits because each CEF is a portfolio that mitigates both idiosyncratic effects and the selection and trading problems associated with individual stocks. Yet, a CEF is traded like an individual stock, so that transactions costs are small compared to buying and selling each stock in a portfolio.

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II. Why Does the Weekend Effect Exist?

Explanations for the Weekend Effect focus on regularities in investor behavior. Miller (1988) argues that: 1) negative returns on Mondays indicate that sell orders exceed buy orders on that day, 2) brokerage houses make predominately buy recommendations during the workweek, 3) individuals perform personal business like reviewing portfolios on the weekend, 4) decisions to sell stocks are thus made by individuals on the weekend, and 5) individuals call their brokers Monday mornings to execute these sell decisions. Indeed, on Mondays, individuals are net sellers of stocks (Kamara, 1997). Also on Mondays, NYSE trading volume and block-trade percentages are the lowest of any weekday while the odd-lot sales percentage, attributed to individual investors, is the highest (Lakonishok and Maberly, 1990).

Alternatively, Chen and Singal (2003) contend that the Weekend Effect is driven by investors who sell short. Short selling requires constant monitoring, and conditions relating to borrowed shares change daily. When trading cannot occur, as on the weekend, short sellers cannot control losses from positive stock price movements, so they close speculative positions on Fridays, driving up prices, and reestablish new short positions on Mondays, driving down prices. Based on this argument, high volatility stocks are likely to provide more profitable opportunities than those with low volatility. We show below that CEFs with higher volatility have greater weekend trading profits, and this is consistent with Chen and Singal's contention.

Still, in an efficient market, the effects of regular investor behavior should be arbitraged away, and Kamara (1997) shows that the Weekend Effect has disappeared over time for the S&P 500 Index. The CEFs we examine are all different from the S&P Index, so Kamara's finding does not necessarily apply to our research. Even so, finding zero practical value for the Weekend Effect using CEFs would extend Kamara's finding to a fresh data set. The approach we will take in this research is to: 1) determine which CEFs are most appropriate for weekend trading, 2) examine trading strategies that differ in how weekends are selected for trading, 3) include estimates of transaction costs, and 4) evaluate the risk of the trading strategies. Our findings will indicate whether the Weekend Effect can, or cannot, be exploited for profitable trading using CEFs.

III. The Trading Strategies

To establish if the Weekend Effect can be exploited, we apply different trading strategies to CEF stock returns and subsequently examine the profitability of each of these trading strategies. The strategies we use reflect findings from the previous research on the Weekend Effect.

Buy and hold Strategy. This is our benchmark strategy. No weekend trading is involved: each CEF is bought at the beginning of the sample period and held until the end of the period.

Weekly Strategy. We extrapolate from French (1980) and propose a naive trading strategy: Weekend Effect trading is applied to the CEFs every weekend. This rule generates the maximum number of trades. Cross (1973) documented "non-random movements" in the S&P composite index over the 1953-1970 period. Cross tabulated declines in the index on 60.5% of all Mondays and on 76.0% of those following a Friday on which the index declined. From 1953 to 1977, French (1980) found average returns for the S&P 500 Index to be significantly negative on Mondays. French considered this to be a Weekend Effect because he found that his results were not attributable to calendar-time or trading-time effects and were different from returns for other days following a closed market (i.e., holidays).

Negative Friday Strategy. This strategy follows from Chow, Hsiao, and Solt (1997): weekend trading in the CEFs occurs only if the Friday return on the market (S&P 500 Index) is negative and perhaps less than some negative cut-off value. The Negative Friday strategy is based on the positive correlation between Friday and Monday returns documented by Bessembinder and Hertzel (1993). Bessembinder and Hertzel find that the Friday-Monday return correlation is the highest of all pairs of weekdays. The Negative Friday strategy is more selective, and generates fewer trading costs, than the Weekly strategy, and its selectivity can be increased by increasing the magnitude of the cut-off value.

Fourth Monday Strategy. This strategy follows from Wang, Li, and Erickson (1997): weekend trading in the CEFs occurs on the fourth Monday (and fifth Monday, if it occurs) of each

month, generating either one or two trades per month. They find that on the 4th and 5th Mondays of the month, daily returns average -.20% to -.40% and that Monday returns are positively correlated with the previous day's return (typically Friday).

Both Strategy. Conditions underlying the previous two strategies must be met: weekend trading occurs before the fourth and fifth (if available) Monday of the month only if the previous Friday's return on S&P 500 Index is negative.

Either Strategy. Conditions for either the Negative Friday or the Fourth Monday strategies must be met: weekend trading occurs either if the previous Friday's return on S&P 500 Index is negative or if the weekend is before the fourth or fifth (if available) Monday of the month.

IV. The Closed-End Fund Data

The CEF sample is taken from the Morningstar Principia Pro January 2002 Closed-End Fund Research data disk, and the sample period is from January 4, 1988 to December 31, 2001. We searched for all closed-end equity funds (CEFs) with inception dates earlier than December 1987 and for domestic equity CEFs that present Equity Style ratings.

This search yielded 38 CEFs, of which 21 are domestic equity, 11 are international equity, and 6 are convertible security CEFs. Daily returns are taken from the CRSP data base, and the sample includes 3,533 daily observations, of which 671 are Mondays. For comparison purposes, data for the S&P 500 Index also are compiled.

The Equity Style box is a 3 x 3 matrix comprised of two dimensions: the fund's investment methodology (Value, Growth, or a Blend of value and growth) and the size of companies invested in (Large, Medium, or Small). Morningstar assigns a fund to one of nine boxes after determining the fund's size and investment approach. However, Morningstar determines equity style only for domestic (and not international) equity CEFs. Since in our sample some of the equity style boxes contain only 1 or 2 funds, we present results for the "row" and "column" totals: for the 8 Large, 6 Medium, and 7 Small CEFs and for the 5 Value, 12 Blend, and 4 Growth CEFs rather than for each of the 9 style boxes.

V. Applying the Trading Strategies

Four transactions take place on each weekend that trading occurs: selling a long and buying a short position on Friday, then reversing these positions on Monday. Table 1 presents the ending wealth resulting from applying the trading strategies. Since transaction costs are not included, Table 1 shows the maximum potential of weekend trading in the CEFs. The results are presented for each CEF category and for the 21 Domestic Equity funds by Equity Style category. Assuming a beginning investment of $1,000, the entries in Table 1 are the average of the ending wealth levels for the underlying CEFs.

Table 1

Average Ending Wealth for the Trading Strategies with Beginning Wealth of $1,000

	Number of Funds	Buy & Hold	Weekly	Negative Friday	Fourth Monday	Both	Either
Weekends Traded		671	671	294	297	133	448
S&P 500	1	5,513	1,442	6,010	5,377	9,032	3,578
CEF Category							
Domestic Equity	21	8,999	5,507	12,987	21,544	19,904	14,058
Convertible Securities	6	6,361	3,279	5,176	7,677	7,633	5,206
International Equity	11	6,095	8,498	13,461	35,011	23,673	19,909
Domestic Equity Funds by Equity Style							
Large	8	7,619	3,171	9,123	15,394	14,727	9,536
Medium	6	7,971	3,301	9,252	14,183	14,855	8,834

Table 1 (continuous)

Small	7	11,926	15,173	25,092	43,525	35,045	31,164
Value	5	9,872	18,871	25,689	27,558	21,144	33,482
Blend	12	8,231	2,716	8,763	14,960	15,836	8,278
Growth	4	10,318	8,958	16,873	45,016	35,226	21,517

First, using the S&P 500 Index data to implement the trading strategies, Table 1 shows that the Weekly, Fourth Monday, and Either strategies destroy wealth relative to the Buy & Hold strategy. However, the Negative Friday and Both strategies produce ending wealth levels of $6,010 and $9,032, which are approximately 9.0% and 64.0% greater, respectively, than the Buy & Hold strategy's ending wealth of $5,513.

Turning to the CEF categories, the trading strategies perform much better for the Domestic Equity and International Equity categories than they do for the Convertible Security category. For Domestic Equity CEFs, all of the trading strategies, except the Weekly strategy, yield a higher average ending wealth than the Buy & Hold strategy.

For International Equity CEFs, all of the trading strategies provide higher average ending wealth than the Buy & Hold strategy. The Fourth Monday and Both strategies having average ending wealth 6 times and 4 times greater, respectively, than the ending wealth of the Buy & Hold strategy. In addition, for each trading strategy, the average ending wealth is higher for the International Equity CEFs than for the Domestic Equity CEFs. For the Convertible Security CEFs, only the Fourth Monday and Both strategies provide higher average ending wealth than the Buy & Hold strategy.

Applying the trading strategies to the Domestic Equity CEFs for the Equity Styles mostly improves average ending wealth relative to the Buy & Hold. However, the Weekly strategy destroys wealth relative to the Buy & Hold strategy for the Large, Medium, Blend, and Growth Equity Styles. The Negative Friday, Fourth Monday, Both, and Either strategies applied to the Small, Value, and Growth Equity Styles perform very well. For these instances, 1) the average ending wealth ranges between approximately $17,000 and $45,000, and 2) 7 times (out of 12) the average ending wealth ranges between approximately $25,000 and $35,000, which is roughly 2.5 to 3.5 times the ending wealth of the Buy & Hold strategy for the respective Equity Style.

Table 2 helps explain why the Small, Value, and Growth CEFs perform so well in Table 1 relative to the Large, Medium, and Blend Equity Styles. Table 2 displays the standard deviations for the different Equity Styles for Mondays and for all days of the week. The Large, Medium, and Blend Equity Styles have standard deviations in the 1.14% to 1.34% range, while the Small, Value, and Growth Equity styles have standard deviations in the 1.73% to 2.16% range. The more volatile CEFs have better weekend trading results than the less volatile ones, and this is consistent with Chen and Singal's (2003) finding for highly volatile stocks.

Overall, the Fourth Monday strategy appears to be the best trading strategy for the CEFs – 6 times (out of 9), the Fourth Monday strategy provides the highest average ending wealth. The Both and Either strategies provide the highest ending wealth the other 3 times. Thus, the Fourth Monday strategy is always associated with the most successful Weekend Effect trading strategy for the CEFs in Table 1. The Small and Growth Equity Styles provide the highest average ending wealth values in Table 1 (between $35,000 and $45,000 for the Fourth Monday and Both strategies) because these Equity Styles have larger volatilities, with average daily standard deviations exceeding 2.0% in Table 2.

Table 2

Mean Daily Returns and Average Standard Deviations by Equity Style for the 21 Domestice Closed-End Funds

	Mean Monday	Standard Deviation	Mean All Days	Standard Deviation
Large	0.07%	1.31%	0.06%	1.18%
Medium	0.06%	1.34%	0.05%	1.20%
Small	-0.02%	2.09%	0.07%	2.01%
Value	-0.05%	1.81%	0.06%	1.73%
Blend	0.08%	1.29%	0.06%	1.14%
Growth	0.01%	2.16%	0.07%	2.09

VI. The Effect of Transaction Costs

In terms of the objectives laid out at the beginning of this paper, Table 1 provides evidence that: 1) Weekend Effect trading can generate trading profits which substantially increase ending wealth over the Buy & Hold strategy (even for the S&P 500 Index, in some instances), 2) more volatile CEFs generate more successful weekend trading, and 3) the Fourth Monday strategy appears to be superior to the other trading strategies. However, no transaction costs have been included, so the practical value of weekend trading has not been clearly established. In this section, we include transaction costs to gauge their effect on Weekend Effect trading. In addition, we will examine the riskiness of Weekend Effect trading so that we do not rely only on the profitability of the trading strategies in our analysis.

Trading costs are composed of explicit costs, like broker commissions and taxes, and implicit costs, like a trade's impact on the share price and the opportunity cost of not executing a trade in a timely manner. Berkowitz and Logue (2001) estimate the commission for a large-capitalization equity transaction in 1997 to be $0.05 per share and the market impact to be as much as $0.09 per share. These are estimates of gross commissions and do not reflect the value of soft dollar and/or commission recapture arrangements. Only the investor can know with any precision what the net cost of commissions is, and this is private information to which we do not have access. However, Berkowitz and Logue use transaction costs of 0.15% per transaction, and we also use this figure in our analysis in this section.

Part A of Table 3 presents the average ending wealth for the Fourth Monday, Negative Friday, and Both strategies, with initial wealth of $10.000 and with transaction costs of .15% on each of the four weekend trading transactions. Part B of Table 3 presents the percentage by which the trading strategy exceeds, or fails to exceed, the Buy & Hold strategy for that CEF category. For the Negative Friday and Both strategies, various cut-off values are used as triggers for undertaking weekend trading. That is, in Table 3, weekend trading is undertaken when a previous Friday's return on the S&P 500 Index is more negative than either 0.0%, -0.5%, -1.0%, -1.5%, or -2.0%. The intent is to use the magnitude of the Friday decline as an indicator of the subsequent Monday's decline. As the magnitude of the cut-off value increases, fewer weekends are traded, and this greater selectivity about which weekends to trade hopefully will increase trading profits while economizing on transaction costs.

Table 3

Trading Strategy Results with .15% Cost per Transaction and $10,000 Initial Wealth

	Buy & Hold No Weekend Trading	Fourth Monday	Negative Friday Strategy Friday Decline Equal to or Exceeding					Both Strategy Friday Decline Equal to or Exceeding				
			0.0%	-0.5%	-1.0%	-1.5%	-2.0%	0.0%	-0.5%	-1.0%	-1.5%	-2.0%
Weekends traded	0	297	294	156	77	42	25	133	73	36	17	9
A. Ending Wealth (in '000s)												
S&P 500	55.13	10.74	9.21	17.97	31.72	33.15	40.37	40.67	42.41	46.82	41.22	49.13
CEF Category												
Domestic Equity	89.99	23.21	36.92	79.83	122.34	102.80	105.73	89.61	112.48	112.05	89.07	95.32
International Equity	60.95	24.06	59.99	88.49	101.36	77.26	71.45	106.58	93.34	79.44	60.78	64.67
Domestic Equity Funds by Equity Style												
Small	119.26	44.84	74.58	141.90	233.36	178.82	173.42	157.78	190.87	181.49	129.86	136.13
Value	74.79	28.73	38.24	69.92	86.44	73.64	76.10	81.93	91.85	86.13	69.46	75.71
Growth	81.90	16.39	45.94	87.53	141.44	111.22	104.08	92.15	107.50	109.40	85.82	89.10
B. Percent Difference from Buy & Hold Ending Wealth												
S&P 500	0%	-81%	-83%	-67%	-42%	-40%	-27%	-26%	-23%	-15%	-25%	-11%
CEF Category												
Domestic Equity	0%	-74%	-59%	-11%	36%	14%	17%	0%	25%	25%	-1%	6%
International Equity	0%	-61%	-2%	45%	66%	27%	17%	75%	53%	30%	0%	6%
Domestic Equity Funds by Equity Style												
Small	0%	-62%	-37%	19%	96%	50%	45%	32%	60%	52%	9%	14%
Value	0%	-62%	-49%	-7%	16%	-2%	2%	10%	23%	15%	-7%	1%
Growth	0%	-80%	-44%	7%	73%	36%	27%	13%	31%	34%	5%	9%

Due to their relatively poor performance in Table 1, Convertible Security CEFs are not included in Table 3, nor are Large, Medium, and Blend Equity Styles. The Weekly and Either strategies perform worse than the Buy & Hold strategy after transaction costs and are not displayed in Table 3.

Not surprisingly, Part A of Table 3 shows that when transaction costs are included, weekend trading using the S&P 500 Index does **not** generate an increase in ending wealth, and Part B indicates that weekend trading of the S&P 500 Index would provide between 11.0% and 83.0% **less** wealth than would simply buying and holding the index.

One surprising finding in Table 3 is the poor performance of the Fourth Monday strategy, given its apparent superiority over the other trading strategies in Table 1. For each category of CEFs, Part A of Table 3 shows that the Fourth Monday strategy fails to outperform the Buy & Hold strategy **when transaction costs are included**. Part B of Table 3 shows that the Fourth Monday strategy including transaction costs destroys approximately 60.0% to 80.0% of the value that the Buy & Hold strategy generates.

The Fourth Monday strategy undertakes trading for 297 of the 671 weekends in our sample period. The Negative Friday strategy with a 0.0% cut-off undertakes trading for 294 weekends, and it also fails to outperform the Buy & Hold strategy **when transaction costs are included**. Trading on a large number of weekends generates a large amount of transaction costs, and being selective about which weekends to trade by increasing the magnitude of the cut-off value can perhaps reduce the effect of transaction costs. As we show next, by using trading rules that are more selective than the Fourth Monday or Negative Friday 0.0% cut-off strategies, profitable Weekend Effect trading can be performed, even when transaction costs are included.

In Table 3, compared to the Buy & Hold strategy, the Negative Friday strategy tends to perform well when Friday declines are -1.0% or more and the Both strategy tends to perform well when the cutoff is -.5% or more. Table 3 displays a pattern for each CEF category: 1) ending wealth increases as the cut-off value increases in magnitude from 0.0%, 2) tops out at a cut-off value of either -0.5% or -1.0%, and 3) then decreases as the cut-off value continues to increase in magnitude.

Table 3 suggests that selectivity has limits. Being selective about which weekends to trade means picking profitable weekends that outweigh the effect of transaction costs and avoiding unprofitable weekends when trading profits are less than transaction costs. But being too selective reduces the number of weekends traded so much that some profitable weekends are skipped so that the overall trading return is reduced. Part B of Table 3 shows that a strategy that is initiated by the largest Friday declines selects the fewest weekends for trading but does not produce the largest increases over the Buy & Hold strategy. Table 3 indicates that optimal trading requires trading on 73-77 weekends, which is about 11.0% of the total 671 weekends and about 25.0% of the 294 Negative Friday weekends in our sample. This trading frequency is generated by either the Both strategy with a cut-off of -0.5% (73 weekends) or the Negative Friday strategy with a -1.0% cut-off (77 weekends).

Table 4 presents results for the 32 Domestic Equity CEFs (Dom in the Type column) and International Equity CEFs (Int'l in the Type column). In the Equity Style column, S, M, and L refer to Small, Medium, and Large sizes, while V, B, and G refer to Value, Blend, and Growth objectives. Each CEF's best weekend trading strategy, including transaction costs, is tabulated, and the CEFs are sorted in descending order by the percentage difference from the corresponding Buy & Hold strategy. As in Chen and Singal (2003), higher volatility is associated with greater Weekend Effect trading profits – the correlation between the standard deviation of the daily returns and the percent difference from the Buy & Hold strategy is .77.

Table 4

Trading Strategy Results by Individual Closed-End Fund Including Transaction Costs with $10 Thousand Initial Wealth

Ticker Symbol	Type	Equity Style	Best Strategy	Ending Wealth (in 000s)	% Diff. B & H	CEF Standard Deviation	Maximum Weekend	Minimum Weekend	CEF Beta	Reward to Variability Ratio	Ratio to B & H Rew. To Var. Ratio	Semi-Standard Deviation	Ratio to B & H Semi-Standard Deviation
KF	Int'l	M-V	%	197.2	439.0%	2.64%	16.2%	-14.0%	0.90	0.03	1.99	1.93%	0.91
EGX	Dom	S-G	%	573.9	418.6%	3.27%	26.0%	-17.2%	0.58	0.04	1.64	1.88%	0.88
MF	Int'l	M-B	%	167.1	402.6%	2.62%	18.1%	-10.6%	0.76	0.03	1.99	1.11%	0.60
TWN	Int'l	L-B	%	195.6	362.3%	2.49%	14.5%	-10.5%	0.68	0.03	1.85	1.46%	0.86
ITA	Int'l	M-G	%	237.1	243.9%	2.01%	11.5%	-9.8%	0.57	0.04	1.57	1.38%	0.97
ASA	Int'l	M-V	%	30.4	235.7%	1.97%	7.6%	-12.3%	-0.12	0.02	2.35	1.75%	1.18
MGC	Dom	S-G	%	361.4	221.5%	1.77%	12.0%	-6.8%	0.74	0.06	1.45	1.18%	0.85
HQH	Dom	S-G	%	629.9	205.7%	2.07%	9.5%	-12.6%	1.01	0.06	1.36	1.44%	0.91
BEM	Dom	L-B	%	214.9	147.2%	1.11%	6.0%	-5.6%	0.29	0.08	1.39	0.59%	0.66
ZSEV	Dom	S-V	%	74.5	146.2%	2.81%	17.2%	-15.0%	0.13	0.02	1.56	2.02%	0.89
APB	Int'l	L-V	%	279.2	140.8%	2.20%	17.8%	-16.1%	0.80	0.04	1.33	1.50%	0.76
IAF	Int'l	L-V	%	61.2	93.6%	1.76%	13.4%	-11.1%	0.57	0.03	1.40	1.29%	0.91
ASG	Dom	M-G	%	62.7	90.9%	1.22%	7.7%	-6.9%	0.48	0.04	1.39	0.95%	1.03
CET	Dom	M-B	%	265.9	89.3%	1.35%	9.3%	-7.9%	0.51	0.07	1.23	1.31%	1.26
GER	Int'l	L-V	%	175.6	85.2%	2.29%	16.3%	-7.7%	0.84	0.04	1.25	1.40%	0.96
BLU	Dom	L-V	%	195.1	75.6%	1.59%	9.3%	-7.9%	0.60	0.05	1.22	1.40%	1.10
FF	Dom	S-V	%	555.9	68.2%	1.87%	13.3%	-6.6%	0.62	0.06	1.15	1.52%	1.13
CLM	Int'l	L-G	%	76.7	62.3%	1.59%	9.2%	-10.0%	0.51	0.04	1.25	1.08%	0.92
GAM	Dom	M-B	%	285.1	58.6%	1.14%	11.8%	-6.1%	0.56	0.08	1.16	0.96%	1.08
MXF	Int'l	M-V	%	486.6	50.8%	2.57%	14.8%	-10.6%	1.12	0.04	1.12	1.88%	1.00
SBF	Dom	L-B	%	139.2	39.1%	1.20%	11.0%	-5.5%	0.69	0.06	1.13	1.10%	1.32
SOR	Dom	S-B	%	112.9	31.3%	1.01%	6.0%	-4.2%	0.27	0.07	1.12	0.93%	1.22
ADX	Dom	L-B	%	75.4	31.2%	1.03%	7.1%	-6.6%	0.55	0.06	1.13	0.69%	0.86
ZF	Dom	L-B	%	57.4	28.7%	1.08%	11.3%	-7.5%	0.39	0.05	1.13	1.42%	1.56
RVT	Dom	S-B	%	111.6	21.6%	1.27%	8.1%	-8.5%	0.52	0.05	1.08	1.14%	1.17
USA	Dom	L-B	%	131.3	21.3%	1.34%	10.4%	-8.0%	0.65	0.05	1.07	1.41%	1.45
TY	Dom	L-B	%	61.8	10.8%	0.96%	5.9%	-7.2%	0.68	0.05	1.05	1.16%	1.57
PEO	Dom	L-B	%	63.8	10.2%	1.07%	8.6%	-4.3%	0.31	0.05	1.05	1.06%	1.33
SWZ	Int'l	L-B	%	52.6	1.7%	1.52%	11.5%	-7.3%	0.53	0.03	1.101	1.71%	1.52
TUX	Dom	M-B	%	10.5	-2.1%	1.12%	5.8%	-8.3%	0.05	0.00	0.98	0.72%	1.19
GAB	Dom	M-V	%	94.3	-6.7%	1.26%	11.3%	-6.4%	0.56	0.05	0.97	1.30%	1.39
DNP	Dom	M-V	%	54.2	-14.4%	1.10%	4.8%	-3.7%	0.17	0.04	0.93	1.56%	2.08
Average				190.3	119.1%	1.70%	11.3%	-8.8%	0.55	0.05	1.32	1.32%	1.11

Note: For Type, Int'l = International Equity Fund and Dom = Domestic Equity Fund. For Equity Style, S = Small size; M = Medium size; L = Large size; V = Value objective; B = Blend objective; and G = Growth objective.

In Table 4, the Both strategy is best for 16 CEFs, the Negative Friday strategy is best for 15 CEFs, and the Fourth Monday strategy is best for 1 CEF. However, the Negative Friday strategy is best for 12 of the 20 CEFs for which weekend trading returns exceed the Buy & Hold strategy's returns by more than 50.0%. Overall, the Negative Friday strategy with cut-offs between -0.5% to -1.5%, appears to be the most useful trading strategy in Table 4. Conversely, the Both strategy is best for 9 of the 12 CEFs that did **not** exceed the Buy & Hold strategy by 50.0% or more. Nevertheless, Table 4 suggests that for 4 CEFs, the pure Both strategy – that is, a Negative Friday before a Fourth Monday – can also favorably exploit the Weekend Effect.

In total, the findings in Table 3 and 4 suggest that applying a trading strategy with cut-offs between -0.5% to -1.5% to more volatile CEFs is the most favorable way to exploit the Weekend Effect.

Weekend Effect trading is not without risk – Table 4 shows that the minimum return resulting from trading over a weekend is less than 10% for 11 CEFS. As Table 4 shows, the CEF Betas average .55, and only 2 CEFs have Betas greater than 1.0, so our weekend trading returns are not a result of investing in assets with excessive levels of systematic risk that might be generating large positive returns.

To weekend traders, downside risk might be the relevant consideration, so we present the best strategy's semi-standard deviation in Table 4 along with its ratio to the Buy & Hold strategy's semi-standard deviation. The CEFs' best strategy produces an average semi-standard deviation of 1.32%, which is 1.11 times that of the Buy & Hold strategy. However, for 14 of the CEFs, this ratio is **less** than 1.00. Thus, increased returns for the best weekend trading strategies relative to the Buy & Hold strategy do not appear to be driven by the trading strategies taking increased downside risk.

Indeed, Table 4 shows that the ratio of the best strategy's reward to variability ratio to that of the Buy & Hold strategy averages 1.32, and this ratio is greater than 1.00 for 29 of the 32 CEFs. This implies the success of the best Weekend Effect trading strategies appears to be due to enhancing returns rather than increasing risk.

VII. Concluding Comments

Our analysis identifies trading strategies that can be used to successfully exploit the Weekend Effect in Closed-End Equity Funds even when transaction costs are included. For two-thirds of the funds, the best weekend trading strategy generates ending wealth that is over 50.0% more than the ending wealth generated by the Buy & Hold strategy. Our advice is to be selective about which weekends to trade and to trade Closed-End Funds with higher volatility in daily returns. A trading strategy based on Negative Friday returns is the best strategy for 15 of 32 Closed-End Funds, and in conjunction with the Fourth Monday strategy, is best for another 16 funds. Roughly speaking, a weekend trading signal occurs when the S&P 500 Index declines by 1.0% on Friday, and this translates into Weekend Effect trading on approximately 11.0% of all weekends and 25.0% of Negative Friday weekends. Weekend trading involves risk, but applying the best weekend trading strategies actually improves the reward-to-variability ratio over the Buy & Hold strategy for 29 of the 32 Closed-End Funds.

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