Closed End Fund Discounts as Sentiment Indices

Thomas Berry

One of the enduring mysteries in finance is the reason for persistent discounts (and/or premiums) of closed-end funds. Unlike the typical open-end mutual fund, which has an unlimited number of shares, a closed-end fund is a publicly traded investment company with a fixed number of shares. The investment objectives of these funds range from broadly diversified domestic funds to narrowly focused targets, such as single country funds. Shares in the fund are redeemed by selling to others in the secondary market rather than being redeemed by the fund itself at the net asset value as is the case with an open-ended fund. The net asset value is simply the assets of the fund less any liabilities, divided by the number of shares. While the funds generally open at a premium relative to net asset value, within a few months they typically trade at a discount to their net asset value. While funds occasionally trade at a premium, typically they sell at a discount averaging about 15%. If a fund is liquidated or converted to an open–end fund the discount essentially disappears.

The reason for a typical discount from net asset value for an ongoing closed-end fund has been the subject of a great deal of research and debate. Among the reasons given are; illiquid securities, tax issues, agency costs, and investor sentiment. Some funds hold assets, such as letter stock or foreign securities, that are illiquid or possibly overvalued in the computation of net asset values and hence the market discounts the value of these securities and the fund trades at a discount. While there is some evidence to support this (see Lee, Shleifer, and Thaler (1991)), the effect is small and there are funds that trade at a discount yet hold no such securities. This explanation also fails to account for premiums or the fact that the discounts vary (sometimes considerably) over time.

Thomas Berry is Associate Professor of Finance at DePaul University

A second explanation for discounts is that the net asset values do not reflect the capital gains liabilities which would occur if the underlying assets were sold. Again, this explanation fails to account for premiums or time varying discounts. This also seems to be contrary to the evidence in Brickley and Schallheim (1985) that shows the discounts narrowing as the funds move from closed-end to open-end funds. If tax issues were a primary force one would expect the discount to widen rather than narrow as the fund approaches liquidation.

Another possibility is that the discounts reflect agency costs. These agency conflicts could be from shareholder versus manager conflicts (see Brauer (1984)) or from conflicts between large and small shareholders (Barclay, Holderness, and Pontiff (1993)). Brauer (1988) argues that discounts reflect the probability of the fund liquidating or opening, but the evidence is limited. Barclay, Holderness, and Pontiff (1993) argue that some large stockholders enjoy pecuniary benefits from controlling the funds and block efforts to open or liquidate the funds. They detail a number of funds with potential conflicts and conclude that discounts increase with blockholding (at least with blockholders that appear aligned with management).

A final explanation, the one investigated here, is that the discounts reflect noise trader risk due to fluctuations in their sentiment. This idea was originally proposed by Zweig (1973) and later expanded on by Lee, Shleifer, and Thaler (1991), hereafter LST. Based on the noise trader model of DeLong, Shleifer, Summers, and Waldmann (1990), LST argue that small investors may trade on information unrelated to the fundamentals of the securities. If the noise trading is not random then the discounts are related to small investor sentiment and should be related to other securities with proportionately high concentrations of small investors. This implies that the risk is systematic. LST argue that holding the fund is riskier than holding its underlying portfolio, thus the fund should trade at a discount, even when investors are not necessarily pessimistic. The discount does, however, fluctuate with the relative sentiment of investors. They support their contention by correlating the discounts with the returns on portfolios of small stocks, and those stocks with high levels of individual investor ownership.

Gemmill and Thomas (2002) find that sentiment does impact the discount but reject the hypothesis that noise trader risk is the underlying cause of the discounts. Instead they attribute the level of the discounts to the level of management expenses and the difficulty of arbitraging the funds. Chen, Kan, and Miller (1993) also raise a series of objections to the methodology, the empirical robustness, and the conclusions of LST. Rejoiners by both sides to their debate (CLST (1993)), and Chen, Kan, and Miller (1993_B) fail to convince either side as to the basic thesis—are discounts on closed-end funds an index of individual investor sentiment?

We enter this debate by offering an alternative test of this basic question. The test is simple and direct. The results seem to support the hypothesis that the discount and investor sentiment are related, but there remains ammunition for both sides of the debate.

Data and Results

This paper reports the results of a simple, yet direct test of whether the discounts on closed-end funds are related to investor sentiment. To measure investor sentiment an index is used which is based on survey data collected by the American Association of Individual Investors. The survey is a weekly survey of Association members. The survey asks if the investor is bullish, bearish, or neutral. Over the period used here the average number of weekly respondents is 174 with an average response rate of 51%. The index used here is simply the percentage of bullish investors reported in the survey. [1] The data covers the period from January 1990 through July 2005.

The data also consists of the discounts and premiums on closed-end funds. The funds selected were those defining themselves as domestic equity funds and which had data available from 1990. The closed-end data were collected from Wiesenberger and Barrons. Eight funds met the criteria, the funds used were: The Adams Express Co., Blue Chip Value Fund, General American Investors Co., Liberty All-Star Equity Fund, Royce Value Trust, Source Capital Inc., Tri-Continental Corp., and the Zweig Fund. Observations are on a weekly basis. Basic statistics on the differences between the fund prices and net asset values are presented in Table1. The funds generally sell at a discount, with only Source Capital and the Zweig Fund having an average premium over the period.

To test the relationship of the discounts and premiums to the sentiment index each fund was regressed against the index. The results of these regressions are presented in Table 2. The hypothesis is that as the sentiment of investors becomes more bullish then the discounts (premiums) should shrink (grow), hence the coefficient on the index should be negative. Of the eight regressions five of the index coefficients are negative and significant at the 5% level, and one is negative and significant at the 10% level. One of the three insignificant coefficients was for a fund that was identified by Barclay, Holderness and Pontiff (1993) as having potential agency problems due to large block-holdings (the Liberty All-Star Equity Fund). While the results are encouraging they are far from definitive and there are a number of limitations and possible extensions that may shed more light on the issue.

The first factor that raises a concern is that the R-squared values are low, certainly this is a function of the index and suggests there are omitted variables that may add to the explanatory power. Another issue is that the index is merely picking up general market trends, which would then be related to the discounts and premiums. To some extent this should be true but if a market index picks up the same variation as the sentiment index then the notion of the index as a sentiment index is more suspect. To test this a second series of regressions were performed. These regressions included the returns on the market (the NASDAQ) as well as the sentiment index. The results are contained in Table 3. Four of the coefficients on the sentiment index are still negative and significant which indicates that the sentiment index is picking up more than general market trends.

[1] Alternative specifications such as the relative percentage of bullish investors were also used but the results were substantially the same.

Summary and Conclusions

This paper presents the results of a simple test of the hypothesis that the discounts and premiums on closed end funds are related to investor sentiment. While the results are encouraging they are not definite. The index used to measure sentiment is constructed from weekly survey data. It may well be that this data is too noisy to pick up all the changes reflected in the discounts and premiums. Alternatively it could be that the index itself is not the appropriate one and that a different construction, e.g. a lagged index or a moving average, might capture more of the changes.

A second possible problem is that the sentiment index may merely reflect current market conditions rather than expectations. To test this a second variable consisting of the changes in a market index was added to the regression to see if the impact of the sentiment index is eliminated. The results are again supportive but not definitive.

Considering the somewhat crude sentiment index used and the simple nature of the tests the results are encouraging. The hypothesized relationship was strongly significant in most of the regressions. Unfortunately, they are not definitive and further research is necessary to either refine the test or determine why the non-significant relationships could not be explained by the test here.

Table 1

	Mean	St. Dev.	Min.	Max.
Adamexpr	-11.704	4.554	-19.59	3.81
Bluchip	-0.847	8.396	-15.508	22
Genamer	-9.703	5.551	-21.603	22.2
Liberty	-2.612	7.423	-23.4	15.6
Royceval	-6.989	6.597	-18.478	11.4
Sourcap	5.866	7.743	-10.2	33.9
Tricont	-14.203	4.395	-23.5	17
Zweig	1.291	9.766	-21.7	20.5
Index	0.171	0.268	-0.675	0.786

Table 2

			CORRELATION ANALYSIS					
	ADAMEXPR	BLUCHIP	GENAMER	LIBERTY	ROYCEVAL	SOURCAP	TRICONT	ZWEIG
ADAMEXPR	1.000							
BLUCHIP	0.123	1.000						
GENAMER	0.615	0.354	1.000					
LIBERTY	0.374	0.559	0.422	1.000				
ROYCEVAL	0.308	0.597	0.218	0.520	1.000			
SOURCAP	0.468	0.459	0.535	0.501	0.660	1.000		
TRICONT	0.709	0.068	0.558	0.291	0.252	0.413	1.000	
ZWEIG	0.609	-0.235	0.275	0.299	-0.036	0.088	0.539	1.000

Table 3

	Intercept	P-value	Index Coefficient	P-value	R^2
Adamexpr	-11.05	0.001	-3.81	0.001	0.05
Bakerfen	-17.18	0.001	1.17	0.061	0.007
Bluchip	-1.38	0.001	3.13	0.004	0.01
Genamer	-9.89	0.001	1.14	0.117	0.003
Liberty	-2.75	0.001	0.796	0.414	0.001
Royceval	-6.75	0.001	-1.14	0.103	0.003
Sourcap	6.73	0.001	-5.05	0.001	0.031
Tricont	-13.69	0.001	-2.99	0.001	0.033
Zweig	3.08	0.001	-10.46	0.001	0.082

References

Barclay, M., C. Holderness, and J. Pontiff "Concentration Ownership and Discounts on Closed-End Funds" Journal of Applied Corporate Finance, Spring 1995

Brauer, G. "Open-ending Closed-end Funds", Journal of Financial Economics, #13, 1984

Brauer, G. "Closed-End Fund Share's Abnormal Returns and the Information Content of Discounts and Premiums" Journal of Finance, March 1988.

Brickley, J. and J. Schallheim, "Lifting the Lid on Closed-end Investment Companies: A case of Abnormal Returns", Journal of Financial and Quantitative Analysis, #20, 1985

Chen, N., R. Kan, and M. Miller "Are the Discounts on Closed-End Funds a Sentiment Index?" Journal of Finance, June 1993

Chen, N., R. Kan, and M. Miller "A Rejoiner" Journal of Finance, June 1993.
Chopra, N., C. Lee, A. Shleifer, and R. Thaler "Yes, Discounts on Closed-End Funds are A Sentiment Index" Journal of Finance, June 1993

Chopra, N., C. Lee, A. Shleifer, and R. Thaler "Summing Up" Journal of Finance, June 1993

DeLong, J., A. Shliefer, L. Summers, and R. Waldmann, "Noise Trader Risk in Financail Markets", Journal of Political Economy, #98, 1990

Gemmill, G. and D. Thomas "Noise Trading, Costly Arbitrage, and Asset Prices: Evidence from Closed-end Funds", Journal of Finance, December 2002

Lee C. M., A. Shleifer, and R. Thaler "Investor Sentiment and the Closed-End Fund Puzzle" Journal of Finance, March 1991

Thompson, R. "The Information Content of Discounts and Premiums on Closed-End Funds Shares" Journal of Financial Economics, #6, 1978

Zweig, M. "An Investor Expectations Stock Price Predictive Model Using Closed-end Fund Premiums", Journal of Finance, #28, 1973