The Case for Country-specific Closed-end Funds Instead of Exchange-traded Funds

C. Edward Chang

College of Business Administration, Missouri State University

901 S. National Ave., Springfield, Missouri 65897, United States

Tel: 1-417-836-5563   E-mail: EdwardChang@MissouriState.edu

Thomas M. Krueger (Corresponding author)

College of Business, Texas A&M University-Kingsville

MSC 186, Kingsville, Texas 78363, United States

Tel: 1-608-397-5161   E-mail: Thomas.Krueger@tamuk.edu

Abstract

The performance of country exchange-traded funds and closed-end funds is investigated over the 2002 to 2011 period. Operating characteristics (i.e., expense ratios and portfolio turnover) and investment results (i.e., return, risk, and risk-adjusted return) are studied for investment funds with at least ten years of data. We find that although exchange-traded funds have significantly lower expenses, their performance is statistically worse than those of closed-end funds. Despite their accurate, widely-advertised claims to have lower annual expenses, investors would be wise to stay focused on the higher return (after deducting expenses) afforded by closed-end funds.

Keywords: Exchange-traded funds, Closed-end funds, Country funds, Expense ratios, Annual turnover, Beta, Risk-adjusted returns

1. Introduction

1.1 Closed-end Funds versus Exchange-traded Funds

There seems to be a bias in favor of exchange-traded funds (ETFs) in recent years. For instance, Kennedy (2012) lists eleven reasons for buying ETFs at the popular *about.com* website. The second item on his list is the ability to invest in foreign markets. But are ETFs necessarily the best? In this paper, we compare the performance and risk measures of country-specific ETFs and closed-end funds (CEFs).

ETFs offer investors the opportunity to buy units of stocks, bond, and other commodities through a mutual fund that trades throughout the day on stock exchanges. ETFs normally trade very close to their NAVs because of their innovative structure whereby shares can be created and "retired" on an active basis by the market maker or other large institutions. Thus, the NAV and the share price don't usually diverge because of this arbitrage opportunity.

Likewise, investors acquire shares in CEFs on a secondary market from other investors. The term "closed" arises from the fact that once capital is raised to purchase the securities in the fund, no additional investment is possible in the equivalent of an initial public offering. By comparison, in a traditional, open-end fund all transactions involve a fund company creating new shares in exchange for either cash or redeeming shares for cash. Among their differences is that ETFs tend to be passively managed, while CEFs tend to be actively managed. There usually is more transparency regarding the composition of an ETF, largely because they are designed to mimic the performance of specified indexes. Consequently, ETFs tend to track the net asset value of an underlying portfolio, while CEFs vary more from NAV depending on the trading patterns of the CEF manager.

1.2 Literature Review

Gastineau (2001, 2002) provides a very detailed history of ETFs and the current operation of these products. Since their introduction in 1993, ETF assets have grown tremendously. Because ETF shares can be redeemed for shares of their underlying stocks, they are more tax-efficient (Madlem & Edwards, 2002; Wiandt & McClatchy, 2002). Although much has been written on CEFs in general (Zweig, 1973; Richards, Fraser & Groth, 1980; Anderson, 1986;

Pontiff, 1997), very limited research has been conducted on either country-specific ETFs or closed-end country funds.

We found only two articles that are closely related to the present study. Harper, Madura and Schnusenberg (2006) utilized monthly data from April 1996 to December 2001 from sources, including Morgan Stanley Capital International and the Center for Research in Security Prices (CRSP), and found that ETFs exhibit higher mean returns and higher Sharpe ratios than corresponding closed-end funds. They also found that closed-end funds exhibit negative Jensen's alphas over the same sample period. Chang and Swales (2005) utilized annual returns of the eight-year period from 1997 to 2004 for 11 countries, and found ETFs, when compared with CEFs, exhibited (1) lower expense ratios and turnover, (2) lower NAV and market returns, (3) higher risks (standard deviations and betas), and (4) lower risk-adjusted returns (Sharpe ratios and Jensen's alphas). This report is both an update and extension of that article in light of subsequent expansions and the contractions that impacted economies across the world. According to the International Monetary Fund's World Economic Output gauge, the global economy grew by 10.6 percent during 2006-2007, gave up 2.8 percent during 2008-2009, and expanded again by 9.2 percent during the 2010-2011 period.

2. Comparative Fund Performance

2.1 Data

In order to include only investment funds which have been in existence for at least ten years, the sample consists of ETFs and CEFs for which complete data was available for at least a decade. Studying performance over the recent January 2002 to December 2011 period has two advantages. One, recent information is of most relevance to investors. Two, due to the growth in the number of mutual funds over time, focusing on the recent decade maximizes the number of funds in the sample. Data of both ETFs and CEFs were obtained from the same source, Morningstar's Principia and website, to ensure the consistency of data definitions and constructions.

As shown in Table 1's first set of columns, nine countries were represented in country-specific ETFs and CEFs from 2002 to 2011. In most instances, there was only one ETF and one CEF based on stock issued in a given nation. The exceptions were Japan with two ETFs and two CEFs, Mexico with one ETF and two CEFs, and South Korea which also had one ETF and two CEFs. In order to equalize the impact of country-specific factors on fund type, national average values were computed for these multiple-fund nations. These averages were used to represent the fund average for the specified country and employed in the computation of fund type averages and statistical significance.

2.2 Expense Ratios

There is a significant difference in ETF and CEF expense ratios. As shown at the bottom of Table 1's Expense Ratio set of columns, the average ETF expense ratio was 0.54 percent, while the average CEF expense ratio was 1.39 percent. The difference is statistically significant at the one percent level. In fact, in every country, the CEFs' expense ratio was at least twice as large as the ETFs' expense ratio.

The other striking expense ratio detail is the consistency of the ETF expense ratio, which varies from only 0.51 percent to 0.59 percent. By contrast, the CEF expense ratio ranges from 1.11 percent to 1.76 percent. This range is larger than the largest ETF expense ratio, which was South Korea's ETF expense ratio of 0.59 percent. By contrast, Singapore's CEF had an expense ratio of 1.76 percent.

2.3 Annual Turnover

The amount of turnover, which is reported in the two right columns of Table 1, appears to be more meaningful than statistically significant. ETF mean turnover averaged 18.53 percent, while CEF mean turnover averaged 39.83 percent. Although the average CEF is twice as large, there is a wide range in the CEF turnover, with no turnover at the Australian and Singapore CEFs. By contrast, over one hundred percent of the Mexican CEFs' investments were turned over.

Three CEFs have an annual turnover larger than the highest annual turnover among ETFs, Malaysia's 49.00 percent. Nonetheless, three CEFs have an annual turnover below the lowest annual turnover among ETFs, Mexico's 5.00 percent. Perhaps the most interesting aspect here is the large difference in annual turnover between the Mexico ETF and Mexico CEF, with the former being 5.00 percent and the latter being 126.50 percent.

2.4 Comparative Performance: Average Annual Returns and Systematic Risk

Three measures of performance and one measure of risk are reported in Table 2. The first pair of columns exhibits average annual returns for the country-specific ETFs and CEFs. With an average annual return that is 1.49 percent higher (i.e., 10.63 % - 9.14 %), CEF average annual returns are significantly better at the 0.05 level. In eight of nine instances, a country CEF's average annual return exceeds that of the country's ETF average annual return. The lone

exception to this rule is the better performance of the Mexican ETF. However, the difference between Mexico's ETF and CEF performance is only one percent, and not enough to diminish the perceived advantage of selecting CEFs on an overall basis.

Of course, investors are typically concerned about both risk and return. Given that these are portfolios, with their implied ability to diversify away unique events or characteristics of any one investment, an estimate of the systematic risk (i.e., beta) was made. The average beta of ETFs in the sample was 1.00, while the average CEF beta was 0.97, as illustrated in the Beta pair of columns of Table 2. It is not surprising that these average beta values are close to one given the encompassing nature of these investment funds in this study. The difference had a t-statistic value of 0.102, which is barely outside of the range which would have suggested that it is possible to say that country-specific CEFs have less systematic risk than ETFs.

On an individual country basis, betas varied widely. For both the ETFs and CEFs, the systematic risk measure of Germany and South Korea funds exceeded 1.25, while the beta values of Japan and Malaysia were under 0.75. However, the difference between the ETF and CEF fund betas never exceeded Switzerland's 0.09 (i.e., 0.84 - 0.75) spread. Consequently, the impact of country-based differences in beta will have a negligible impact on conclusions regarding the relative value of ETFs versus CEFs.

2.5 Comparative Performance: Treynor Measures

Two risk-adjusted return measures were estimated to compare country-specific ETFs and CEFs. The Treynor measure subtracts the concurrent Treasury security rate in an attempt to estimate return in excess of what would have been earned on a riskless security. These net amounts, divided by the fund's beta, are presented in Table 2's third pair of columns. The average ETF Treynor measure was 7.54 percent, while the average CEF Treynor measure is 8.23 percent. The difference, which amounts to 0.69 percent, is significant at the ten percent level, implying that one can state that CEFs have a higher level of risk-adjusted performance, when risk is defined in terms consistent with the Treynor measure, with ninety-percent confidence.

There is virtually an even split between ETFs and CEFs on a country-by-country basis. Across the four countries with a higher ETF-based Treynor measure, the greatest difference in Treynor-measure performance is the 1.06 percent (i.e. 17.44% - 16.38%) difference found in Malaysia. Across the five countries with a higher CEF-based Treynor measure, the greatest difference in Treynor-measure performance is the 3.19 percent (i.e., 5.10 % - 1.91%) difference found in Germany. In fact, in four of the five countries with higher CEF Treynor measure performance, CEFs outperformed ETFs by over 1.00 percent.

2.6 Comparative Performance: Alphas Measures

Alpha measures are presented in Table 2's right pair of columns. These risk-adjusted performance measures are the intercept term in the single-index model. The single-index model adjusts return performance for the security's sensitivity to the market (i.e., its beta) and market performance. Alpha measures do not include an assumption regarding the risk-free rate, which is subtracted from returns in the process of computing the Treynor measure. Both measures are frequently presented because alpha measures are excess returns, while Treynor measures present information regarding excess performance per unit of risk.

The CEFs' alpha measures are significantly larger than ETFs' alpha measures at the 0.10 level. With a t-test statistic of 0.062, it appears as though the dominance of the CEFs falls just short of the 0.05 level. Across individual nations, the CEF alpha measure is higher six times, small smaller twice, and equal to the ETF alpha measure once. The highest alpha measures, regardless of fund type, are based on securities issued in Mexico. The lowest alpha measures are found on ETFs and CEFs based on the Japanese stock market.

3. Conclusion

Approximately one fourth of household financial wealth was invested in mutual funds in December 2010. Across mutual fund options, exchange-traded funds (ETFs) are a relatively recent phenomenon, while closed-end funds (CEFs) have been in existence for some time. The financial press frequently publishes articles lauding the performance of ETFs, urging readership to shift money from CEFs to these investments. Lower expense ratios are usually given as the reason behind the recommendation. However, investors should be more worried about making money than spending money.

In this study we contrasted the performance of country-specific EFTs and CEFs from 2002 to 2011. We chose country-specific funds because of their growing popularity, but limited our analysis to funds which had been around for at least a decade and for which there was an ETF-CEF match. Consistent with the claims of ETF supporters, we found that country-specific ETFs have lower expense ratios. However, country-specific CEFs exhibited higher average annual returns and higher risk-adjusted returns (Treynor measures and alpha measures). Since returns were

calculated after deducting expenses, investors would have been better off investing in CEFs. Future research can use data of longer periods and more countries to verify our findings during this early phrase of ETFs and CEFs.

References

Anderson, S. A. (1986). Closed-end funds versus market efficiency. *Journal of Portfolio Management, 13*, 63-65. http://dx.doi.org/10.3905/jpm.1986.409078

Chang, C. E., & Swales, G. S., Jr. (2005). A comparative study of risk and performance measures of closed-end country funds and country-specific exchange-traded funds. *Journal of the Academy of Finance*, *3*, 109-116.

Gastineau, G. (2001). Exchange traded funds: an introduction. *Journal of Portfolio Management, 27*, 88-96. http://dx.doi.org/10.3905/jpm.2001.319804

Gastineau, G. (2002). *The Exchange Traded Funds Manual*. New York: John Wiley.

Harper, J. T., Madura, J., & Schnusenberg, O. (2006). Performance comparison between exchange-traded funds and closed-end country funds. *Journal of International Financial Markets, Institutions and Money, 16*, 104-122. http://dx.doi.org/10.1016/j.intfin.2004.12.006

Kennedy, M. (2012, February 17). 11 strong reasons for buying exchange-traded funds. [Online] Available at: http://etf.about.com/od/etfbasics/tp/Buying_ETFs.htm

Madlem, P. W., & Edwards, L. D. (2002). *Power investing with basket securities*. New York: John Wiley.

Pontiff, J. (1997). Excess volatility and closed-end funds. *American Economic Review, 87*, 155-169.

Richards, M., Fraser, D. R., & Groth, J. C. (1980). Winning strategies for closed-end funds. *Journal of Portfolio Management, 7*, 50-55. http://dx.doi.org/10.3905/jpm.1980.408780

Wiandt, J., & McClatchy, W. (2002). *Exchange traded funds*. New York: John Wiley.

Zweig, M. E. (1973). An investor expectations stock price predictive model using closed-end fund premiums. *Journal of Finance, 28*, 67-78. http://dx.doi.org/10.2307/2978169

Table 1. Descriptive data comparing country-specific exchange-traded funds and closed-end funds from Morningstar with at least 10 years of data as of December 31, 2011

Country	Number of Funds		Expense Ratio (%)		Annual Turnover (%)	
	ETFs	CEFs	ETFs	CEFs	ETFs	CEFs
Australia	1	1	0.55	1.30	27.50	0.00
Germany	1	1	0.51	1.15	13.00	45.00
Japan	2	2	0.52	1.41	14.29	28.50
Malaysia	1	1	0.52	1.11	49.00	2.00
Mexico	1	2	0.52	1.47	5.00	126.50
Singapore	1	1	0.52	1.76	10.00	0.00
South Korea	1	2	0.59	1.50	18.00	41.50
Switzerland	1	1	0.52	1.34	7.00	61.00
Taiwan	1	1	0.59	1.43	23.00	54.00
Total / Average	10	12	0.54	1.39	18.53	39.83
T-test (probability)			0.000[***]		0.115	

Note: ETFs: Exchange-traded Funds; CEFs: Closed-End Funds.

[***], [**], [*]: Significant at the 0.01, 0.05, and 0.10 level.

Table 2. Ten-year performance and risk measures

Country	Average Annual Return (%)		Beta		Treynor Measure (%)		Alpha (%)	
	ETFs	CEFs	ETFs	CEFs	ETFs	CEFs	ETFs	CEFs
Australia	12.89	15.14	1.11	1.03	9.96	11.61	8.14	8.98
Germany	4.37	10.14	1.33	1.36	1.91	5.10	0.21	4.53
Japan	2.36	2.76	0.69	0.61	0.60	2.25	-1.20	-0.03
Malaysia	13.15	15.35	0.65	0.72	17.44	16.38	9.42	9.70
Mexico	15.37	14.40	1.08	1.07	12.45	12.17	10.87	10.59
Singapore	11.48	12.41	1.00	1.00	9.54	9.07	7.28	7.02
South Korea	12.32	13.45	1.26	1.26	8.34	8.13	8.80	8.82
Switzerland	7.24	7.29	0.84	0.75	6.36	6.78	2.87	2.98
Taiwan	3.06	4.69	1.00	0.92	1.25	2.58	0.11	1.25
Average	9.14	10.63	1.00	0.97	7.54	8.23	5.17	5.98
T-test	0.024[**]		0.102		0.083[*]		0.062[*]	

Note: ETFs: Exchange-traded Funds; CEFs: Closed-end Funds.

[***], [**], [*]: Significant at the 0.01, 0.05, and 0.10 level.