Managerial Performance And Closed-End Country Fund Premiums: A Lead Or Lag Relationship?*

forthcoming in International Review of Finance

Iuliana Ismailescu

Lubin School of Business, Pace University, New York, NY

Ben Branch

Isenberg School of Management, University of Massachusetts Amherst, Amherst, MA

Abstract

Herein we examine whether changes in closed-end country fund premiums lead and/or lag management performance. Using a sample of 46 country funds and a time period of 11 years we find evidence of a significant negative relationship between past performance and current fund premiums, but no support for the hypothesis that past premiums are indicative of future performance. Furthermore, the above results are driven primarily by the emerging market funds. The difference between emerging market and developed market fund premiums' response to past performance, although less obvious, continues to hold in the crises period, but vanishes in the tranquil period.

* We thank Hossein Kazemi, Nikunj Kapadia, John Buonaccorsi, seminar participants at the 2008 FMA Meetings, 2008 EFA Meetings, 2007 NBEA Conference, and University of Massachusetts, Amherst for their insightful comments and suggestions, and Thomas Kunkel, Serkan Askar, Ian Beatty, and the Center for International Securities and Derivatives Markets for data assistance and support. All remaining errors are ours.

I. Introduction

Like mutual funds, closed-end funds are investment companies that manage portfolios of securities for their fund holders. Unlike mutual funds, however, closed-end funds issue a limited number of shares that trade on the secondary market like any other publicly traded security. While a mutual (open-end) fund is set up to trade at its net asset value (NAV), plus a load if a load fund, a closed-end fund sells for a market price that often differs from its portfolio's NAV. Closed-end funds must initially be sold at a premium in order to cover their organization and flotation costs. Shortly thereafter, however, they typically trade at a discount. This fact and the related observation that large premiums/discounts are not arbitraged away lie at the center of the so-called "closed-end fund puzzle" (De Long et al. (1990), Lee et al. (1991), Bodurtha et al. (1995), Pontiff (1996), Gemmill and Thomas (2002)).

A great deal of academic work has sought to explain why closed-end fund share prices aren't arbitraged into line with underlying portfolio values. Though many hypotheses have been advanced, no completely satisfactory answer has yet been found. Lee et al. (1991), De Long and Shleifer (1992), Chen et al. (1993), Hardouvelis et al. (1993), Seyhun and Skinner (1994), Bodurtha et al. (1995), Gemmill and Thomas (2000), Richard and Wiggins (2000)) and Simpson and Ramchander (2002) attribute the closed-end fund puzzle to noise trading, taxes, management fees, agency cost, barriers to capital flows, and imperfections in markets for corporate control. De Long, Shleifer, Summers, and Waldmann (1990) and Pontiff (1996) argue that discounts or premiums on closed-end funds exist because large arbitrage costs prevent rational traders from taking full advantage of the mispricing. Furthermore, Errunza, Senbet, and Hogan (1998) argue that

closed-end country funds investing in emerging markets trade at a premium or discount due to restricted access to many emerging markets, and the substitution effects between the country funds and the assets of their underlying portfolios.

While the cause of fund premiums or discounts is an interesting topic, the aim of our study is to explore the relationship between premiums (which can be either positive or negative) and fund performance, rather than why they exist. We focus on a relatively new group of closed-end funds – country funds, whose underlying portfolios are comprised of equity and/or bond securities of companies operating in foreign economies. Closed-end country funds provide investors the opportunity to participate in foreign markets, without the hassles that direct investment can entail. Such funds had generated increasing attention in the early 1990s, but fell out of favor around the beginning of 2000s. The average market values of country funds tend to be smaller than those of domestic funds, while the institutional ownership is generally greater (Lee et al. (1991), Bodurtha et al. (1995)). Nonetheless, closed-end funds, whether domestic or international, usually have much lower institutional ownership than similar sized operating firms (Hardouvelis et al. (1993)). Most closed-end country fund holders are small investors who recognize the benefits of investing internationally but prefer the advantages of a readymade portfolio.

A growing set of academic studies have investigated whether past performance of mutual funds is a reliable predictor of future performance (Hendricks et al. (1993), Goetzmann and Ibbotson (1994), Malkiel (1995), Brown and Goetzmann (1995), Elton et al. (1996), Wermers (1996), Carhart (1997) etc.). Not surprisingly, practitioners and academics alike have wondered whether similar results hold for closed-end funds. Given

the discrepancy between closed-end fund prices and their underlying net asset values (NAVs), many of these studies have also explored the relationship between fund premiums and management skills.

Hardouvelis et al. (1993) find an increase in fund discounts to be associated with a subsequent increase in fund price returns, but only occasionally related to a corresponding rise in NAV returns. Lee et al. (1991) find a negative correlation between premium and future NAV performance, while Pontiff (1995) claims that no correlation between current premiums and six-month-ahead NAV returns exists. On the contrary, Chay and Trzcinka (1999) argue that stock fund premiums are positively and strongly related to one-year ahead management performance. The relation for equity funds becomes weaker further into the future, and is nonexistent for bond funds. More recently, Bleaney and Smith (2003) investigate both the impact of past premiums on future NAV returns and the predictive power of fund performance on premiums. They find first, that past premiums are unrelated to future NAV returns, second, that premiums are negatively associated with up to six months of past returns, and third that the relation turns significantly positive two years into the future. The differences among these studies' results may be due to the samples and time periods they cover.

The above findings are indicative of the premium-performance relationship of funds investing in developed countries, primarily the U.S. and U.K. Earlier results imply that premiums of international and domestic funds are driven by different factors. Accordingly, we are motivated to explore herein the premium-performance relationship of funds investing in foreign markets, both emerging and developed.

Using a sample of 46 country funds and a time period of 11 years, from December 25, 1995 to December 8, 2006, we find evidence of a significant negative relationship between past performance and current fund premium, but no support for the hypothesis that past premiums are indicative of future performance. Based on our results, a 10 basis point increase in abnormal NAV return predicts a significant premium decline of 2.17% over the next 13 weeks or 10.89% over the next 6 months. Furthermore, we find that the above results are driven primarily by the emerging market funds. The difference between emerging market (EM) and developed market (DM) fund premiums' response to past performance, although less obvious, continues to hold in the crises period (before December 15, 2001), but vanishes in the tranquil period (after December 15, 2001).

The remainder of the paper proceeds as follows. Section II describes the data. Section III investigates the relationship between fund premiums and managerial performance. Section IV concludes.

II. Data

Our initial sample consists of 48 closed-end country funds publicly traded on U.S. exchanges between September 30, 1994 and December 31, 2006. For each fund that was actively traded at the end of December 2006, the daily share price and weekly net asset value (NAV) were collected from Bloomberg Financial Services. For funds that ceased operations before December 2006, we obtained weekly prices and NAVs from the Wall Street Journal. Both share prices and NAVs are reported in US dollars. Typically, international closed-end fund NAVs are reported as of Friday's close in the foreign

country, but few funds are valued as of either Wednesday or Thursday's close[1]. For consistency, Bloomberg daily price series were converted into weekly data by matching the correct price with the weekly NAV data.

To be included in our dataset, a fund must have a minimum of three years of weekly data. Accordingly, two funds with a short data history (First Iberian Fund and Future Germany Fund) were excluded, leaving a final sample of 46 closed-end country funds. Twenty nine of the resulting funds are classified as emerging-market and 17 are invested in developed economies, with little or no exposure to the U.S. market. Appendix A contains the list of and Table 1 reports descriptive statistics for our sample. The fund premium for week *t* (which if negative, indicates a discount) is computed as follows:

$$Premium_t = \frac{Price_t - NAV_t}{NAV_t} \times 100$$

Table 1 displays the time-series and cross-sectional averages of premiums and NAV returns separately for emerging market (EM) and developed market (DM) funds in each of the three periods we consider. We define the NAV return at the end of week *t* as:

$$NAV\_ret_t = \frac{DIV_t + NAV_t - NAV_{t-1}}{NAV_{t-1}} \times 100$$

where DIV_t is the amount of a fund's dividend payment that goes ex-dividend during week *t*. These data are obtained from CRSP data tapes.

The first period (reported in Panel A) spans 640 weeks (from September 30, 1994 to December 31, 2006) and represents the entire sample period. To obtain the other two periods, we divide the sample period in two. The first sub-period (spanning 312 weeks

[1]Brazil, Brazilian Equity, Emerging Mexico, JF India, Mexico, Mexico Equity & Income, Singapore, Taiwan, Taiwan Equity, Templeton China World, and Templeton Russia funds report their NAV as of Thursday's close. India Growth and Taiwan Greater China funds report their NAV as of Wednesday's close.

from December 25, 1995 to December 14, 2001) reflects a time of turmoil in emerging markets encompassing the Asian currency crisis, and the Russian and Argentine government defaults. The second sub-period (spanning 260 weeks from December 15, 2001 to December 8, 2006) covers a more tranquil period in global markets. To compute time-series averages we create an equally weighted portfolio of funds in each category. For cross-sectional averages, we calculate the descriptive statistics for each fund and then average them across funds, by type.

Table 1 shows that during the entire sample period and the crises period (Panels A and B) the portfolio of DM funds tended to trade at deeper discounts than its EM equivalent, (9.24% vs. 7.10%, and 13.14% vs. 9.71%, respectively), but experienced lower volatility. The relative positions of the two portfolios reverse in the tranquil period (Panel C). The discount and standard deviation of the EM fund portfolio peaked in the crises period (at 9.71% and 18.28%, respectively), and declined sharply during the tranquil period (to 5.39% and 9.24%, respectively). The time-series statistics presented in Table 1 are confirmed by the behavior of the premiums of the equally weighted portfolios displayed in Figure 1. Table 1 reveals similar patterns for cross-sectional averages. The lower volatilities of DM fund premiums indicate greater homogeneity among DM funds. For example, during the entire sample period, the mean premiums of the 29 EM funds ranged from -32.43% to 40.96%, while the mean premiums of the 17 DM funds stretched from -26.16% to 12.57%.

<Insert Table 1 here>

Table 1 also contains summary statistics for fund NAV returns. Weekly NAV return averages, both time-series and cross-sectional are positive for the entire sample

period and the crises sub-period, and mixed during the tranquil sub-period. The cross-sectional mean NAV return for EM funds was positive in both sub-periods, averaging 0.03% per week during the crises period and 0.41% during the tranquil period. Unlike EM funds, DM funds experienced a positive cross-sectional mean NAV return of 0.08% per week in the crises period, and a negative 0.60% per week during the tranquil period. Moreover, except for the tranquil period, DM funds' NAV returns display a narrower cross-sectional variation, which indicates a greater degree of homogeneity than that of the EM fund NAV returns. For example, during the crises period, the cross-sectional standard deviation of the NAV return reached 4.90% for EM funds and only 3.05% for DM funds.

In search of abnormal returns, we also computed the non-overlapping 13-week, and 26-week Jensen's alphas for our sample and then average them across fund types. The proxies for the CAPM model's market portfolio and risk-free rate are local market indexes expressed in US dollars and the one-month Eurodollar rate, respectively, collected from Datastream. Cross-sectional alpha averages are reported in Table 2. A noteworthy result in Table 2 is the consistently negative Jensen's alpha of developed market funds, for most of the time periods studied. This finding indicates that the typical DM fund manager's ability to manage the composition of his/her portfolio effectively is quite limited when the benchmark is the local stock market index. The cross-sectional 26-week alphas of the EM funds are also negative in the crises period, but turn positive afterward, suggesting that EM fund managers may be able to earn abnormal returns in tranquil periods.

III. Empirical results

In this section we investigate whether country fund premiums lead and/or lag managerial performance. In other words, does the fund premium help forecast its future managerial performance, is managerial performance helpful in predicting future fund discounts or premiums, or are both relationships present? Assuming rational expectations, Lee et al. (1991) argue that the relation between closed-end fund discounts and future management performance is more suitable to explore than that between discounts and current or past performance. While we respect their viewpoint, we shall let the data tell its own story. Accordingly, we explore whether the fund premium reflects investors' changing beliefs about the manager's abilities to earn higher returns, but also consider the impact of fund performance on future premiums.

Using our sample of 46 country funds, first we test whether the fund premium reflects shareholders' expectations of the fund's future management performance. We employ the following cross-sectional regression model to test our hypothesis:

$$PERF_{it} = \beta_0 + \beta_1 PREM_{i,t-n} + \varepsilon_{it}, \quad n = 1, 2, 3$$

where $PERF_{it}$ and $PREM_{it}$ are the management performance and the premium of fund i at time t, respectively.

To measure managerial performance we use cumulative NAV returns and unconditional CAPM alpha for various non-overlapping horizons. One, four, 13, and 26 week horizons are considered for cumulative NAV returns, which are calculated by adding the weekly returns over the relevant horizons. Clearly, a Jensen's alpha estimation period of one or four weeks would be too short. Accordingly, for alpha estimation, only 13 and 26 week periods are employed. We use local market indexes (see Appendix B)

and the one-month Eurodollar rate, respectively as CAPM model proxies for the market portfolio and the risk-free rate. The Eurodollar rate we consider is the British Bankers' Association one month LIBOR, whose weekly values are obtained from Datastream. All country-specific stock market indices are expressed in both U.S. dollars and domestic currencies.

An important issue with alpha estimation is whether to use local market indices expressed in US dollars or local currencies. If fund managers hedged most or all their currency risks, then returns in terms of local currency should be used. On the other hand, calculating local stock market returns in US dollar terms implicitly assumes that currency risk is not hedged. Chen (1999) finds that due to costly and limited choices of derivative instruments for hedging currency risk, funds invested in emerging markets generally do not hedge foreign exchange rate risk. As most of our funds are EM, we assume that most managers in our sample do not hedge their currency risk. Therefore, results in this section are reported with the local stock market indices expressed in US dollars. Similar results are obtained when we use local stock market indexes in domestic currencies[2].

In order to examine how far into the future the premium can anticipate management performance, we regress fund performance at the end of each horizon period on the fund premium at the end of the previous period, as well as on the second and third fund premium lags. Then, following Fama and MacBeth (1973), we average the slopes from period-by-period regressions. The time-series averages of the estimated coefficients from the cross-section regressions of country funds and their t-statistics are reported in Table 3. In Panel A fund performance is measured with cumulative NAV returns, whereas in Panel B Jensen's alpha is the proxy for management performance. In order to

[2] These results are available from the authors upon request.

maximize the number of funds included in the regression model and have a sample period that is a multiple of 26 weeks, the period covered in the regression analysis is December 25, 1995 to December 8, 2006.

Consistent with Hardouvelis et al. (1993) and Bleaney and Smith (2003), we find that whether fund performance is measured with cumulative NAV returns or Jensen's alpha, past premiums are not indicative of future performance. Although not significant at the 90% level or better, future performance responds mostly negatively to current and past premiums up to six months. The relationship reverses in the second half of the first year. While in conflict with Chay and Trzcinka's (1999) finding, the negative correlation between past premiums and future performance of country funds is consistent with Lee et al. (1991, p. 78) who find a positive (negative) correlation between fund discounts (premium) and future NAV performance.

< Insert Table 3 here >

Second, we investigate the inverse relationship, between the current premium and past management performance using the same horizon periods of one, four, 13, and 26 weeks. The estimation is carried out with the following cross-sectional regression model:

$$PREM_{it} = \gamma_0 + \gamma_1 PERF_{i,t-n} + \varepsilon_{it}, \quad n = 1, 2, 3$$

In order to examine how far into the future management performance impacts the fund premium, we regress the premium at the end of each horizon period on management performance at the end of the previous period, as well as on the second and third performance lags. Results are reported in Table 4, with performance measured as either the cumulative NAV return or Jensen's alpha (Panels A and B, respectively).

When measured by cumulative returns, future premiums respond negatively and significantly to past performance for all horizons, but the impact is declining with the length of the horizon. Similar but stronger results are found when management performance is measured against the performance of the local market (with Jensen's alpha). Panel B of Table 4 shows that a 10 basis point (bps) increase in abnormal NAV return predicts a significant premium decline of 2.17% over the next 13 weeks (-1.670/10*13), or 10.89% over the next 6 months (-4.188/10*26). The strongest premium response occurs when performance is measured over a 26-week horizon. Moreover, the premium drop increases for the second performance lag and diminishes for the third lag. The same 10 bps increase in abnormal NAV return is associated with a premium decline of 2.17% in the first 13 weeks, and 2.58% and 2.38% over the second and third 13-week periods, respectively. (Table 4, Panel B).

< Insert Table 4 here >

Bleaney and Smith (2003) attribute the short-term negative relationship between past NAV returns and future premiums to the staleness of U.S. traded funds' reported NAVs. We suspect that the negative correlation may stem from a lack of management skill (more than half of the reported cross-sectional alpha averages are negative, Table 2), an asymmetric increase in the underlying portfolio's value and fund price, and/or the exchange rate effect.

According to the market segmentation theory and information asymmetry, local investors react more quickly to any domestic news announcements and market changes than do foreign investors. As a consequence, when the underlying portfolio's value increases, the fund price rises simultaneously, but often at a lower rate. This tendency

would reduce the premium, while enhancing fund performance. To test this hypothesis, we run the following cross-sectional regression:

$$PR\_ret_{it} = a_0 + a_1 NAV\_ret_{it} + \eta_{it}$$

assuming positive serial correlation in NAV returns (see Bodurtha et al. (1995, p. 911)). PR_ret_{it} and NAV_ret_{it} are the price return and the NAV return of fund i at time t, respectively. Regression results show a_1 to be significantly different from zero but less than one whether the regression model is run on all NAV and price returns or on positive values only (0.717 and 0.690, respectively). Consistent with Pontiff (1997), this finding implies that changes in a fund's NAV are associated with changes in its share price in the same direction but of a lesser magnitude.

The negative relationship between past NAV returns and future premiums may also be driven by the exchange rate effect. In times of crisis, due to the 'flight to quality', foreign currencies generally depreciate relative to the US dollar, especially in emerging markets, causing a significant decline in NAV levels. Thus, the rise in subsequent premiums may partly be attributed to the continuing drop in NAV caused by the currency rate effect. To test this hypothesis we decompose premiums into fund price and NAV returns and run the following cross-sectional regression:

$$PREM_{it} = \alpha_0 + \alpha_1 NAV\_ret_{i,t-1} + \alpha_2 PR\_ret_{i,t-1} + \alpha_3 EXR\_chg_{i,t-1} + \varepsilon_{it}$$

where *NAV_ret* and *PR_ret* are the NAV and fund price returns and *EXR_chg* is the exchange rate change. The results of the multivariate regression as well as the univariate regressions against each independent variable are reported in Table 5. When all funds are included in the regression analysis, depreciation in the local currency significantly increases the fund premium, whether the regression is multivariate (Panel B) or

univariate (Panel A). Similar results are obtained when all funds are replaced by emerging market funds. When the tests are done on developed market funds alone, however, the exchange rate change is insignificant in both types of regressions. We, thus, conclude that the currency rate effect enhances the impact of the NAV return on the EM fund premium, but not on the premium of DM funds.

< Insert Table 5 here >

The above results may have implications for traders. For example, one could set up a hedge between the closed end fund and its portfolio by taking offsetting positions between the fund's share and a portfolio designed to mimic its NAV. (Note that funds report their holdings quarterly so any hedge would generally be based on somewhat stale data.) Based on our findings, if an investor observes that a fund earns an abnormal return over, say, a 26-week horizon, and the past trend of the fund premium continues into the future, she may be able to earn an arbitrage profit in the week following the end of the horizon period by acquiring a long position in a portfolio mimicking the fund's NAV and shorting the fund. The high arbitrage costs, however, may prevent her from entering this transaction (Bodurtha et al. (1995)).

A. Emerging market vs. developed market funds

In the previous section we found evidence of a strong negative relationship between current fund performance and future fund premium for our sample of international closed-end funds. Investing in international markets, however, may require more skill for the emerging market fund manager than for the manager investing in more fully developed economies. As the last two decades have shown, investments in

developing economies can result in spectacular returns, but emerging capital markets can be highly volatile, and react strongly to the international investor sentiment, and economic and political changes. In this context, we would like to investigate if the skill to navigate successfully through emerging capital markets is reflected in the fund premium, or do investors make little or no distinctions between the two types of managers?

To examine whether the above results are sensitive to fund type, we rerun our regression analyses separately on the 29 emerging-market funds and 17 developed-market funds in our sample. When the predictive power of the country fund premium on future management performance is tested, neither the EM fund premium nor the DM fund premium seems able to predict future managerial skill[3].

However, we do find that the relationship between past performance and current premiums differs significantly for EM and DM funds. Columns two to five of Table 6 display the results for the emerging market funds, and columns six to nine those for the developed market funds. Past cumulative returns negatively impact current premiums. But while significant for EM funds for all time horizons, the relation is only significant for DM funds in the second and third performance legs of the 26-week horizon. Nearly similar results are reported when Jensen's alpha replaces the cumulative NAV returns as the proxy for managerial performance: a decline (rise) in EM fund abnormal NAV returns will significantly increase (lower) future fund premiums in the next 13 or 26 weeks, but the same decline (rise) in DM fund Jensen's alpha will significantly impact the DM fund premiums only 26 weeks in the future.

< Insert Table 6 here >

[3] For brevity, results are not reported, but they are available from the authors upon request.

These results may stem from a greater degree of efficiency in the pricing of developed country funds. The financial markets in countries with more fully developed economies have had more time to mature and become efficient. Whereas the markets in emerging market economies tend to be less well developed and thus less likely to be fully efficient. In conclusion, the findings reported in Table 4 are clearly dominated by the results obtained for the EM funds.

B. Crises vs. tranquil periods

Another interesting question is whether the fund premium and management performance behave differently in crises and tranquil periods. To investigate this issue we divide our sample period into two sub-periods with the first extending from December 25, 1995 to December 14, 2001 and the second from December 15, 2001 to December 8, 2006. Both sub-periods are multiples of 26 weeks. We select December 15, 2001 as the cutoff date between the two sub-periods because of the changes that occurred in emerging markets in early 2000s. This date ends a period of turmoil that shook global markets, including the aftermath of the Mexican crisis, the Asian currency crisis, and the Russian and Argentine government defaults, and sets the beginning of a period of growth and prosperity in emerging and developed economies alike, with the former clearly benefiting from favorable global economic conditions.

The findings of the cross-sectional regressions used to test the predictive power of the country fund premium on future management performance suggest that an EM fund's premium is unrelated to the fund's future management performance during both a period of turmoil and a more tranquil period. Similarly, for closed-end funds invested in

developed markets, the relationship between past premiums and future management performance is insignificant, whether in a crises or a tranquil period[4].

In contrast, Table 7 shows that in the crises period (Panel A), a fund's past performance is strongly reflected in its future premium regardless of the fund type (whether it is EM or DM) and the performance measure used (whether cumulative abnormal returns or Jensen's alpha). What distinguishes the two fund types is the size of the regression coefficients and their degree of significance, both of which are greater for EM funds. The same 10 bps increase in abnormal NAV return predicts a EM fund premium decline of 7.03% over the next 13 weeks (-5.405/10*13), significant at 1%, and a DM fund premium drop of 4.87% (-3.745/10*13), significant at 5%.

The strong impact of past performance on current premium diminishes in the more tranquil period (Panel B). This finding leads us to conclude that the results in Table 4 are dominated by the crises period. More interestingly, the negative correlation between a country fund's past performance and its current premium, persistent during the crises period, becomes positive during the second sub-period.

< Insert Table 7 here >

IV. Summary and conclusions

This study examines lead or lag relations between closed-end country fund premiums and management performance. In previous studies, emerging market funds were either analyzed in isolation or pooled together with funds invested in developed economies. A comparison between the behavior of EM and developed funds has not thus

[4] For brevity, results are not reported, but they are available from the authors upon request.

far been attempted. The question we pose here is whether the premium can be used to predict subsequent returns or the relationships run in the other or both directions. Can these relationships be generalized to both types of funds or are the relationships between premia and performance found in the previous closed-end funds literature inapplicable to EM funds?

Cross-sectional weekly data on 46 closed-end country funds – 29 invested in emerging markets and 17 in developed markets – traded in the U.S. from December 25, 1995 to December 8, 2006 show that fund premiums are strongly related to past management performance. We estimate that a 10 bps increase in abnormal NAV return is associated with a significant premium decline of 2.17% over the next 13 weeks and 10.89% over the next 6 months.

To examine whether the above results are sensitive to fund type, we perform the same regression analyses separately on the 29 emerging-market funds and 17 developed-market funds in our sample. Additionally, we divide the sample into two sub-periods, one before December 15, 2001 (the crises period) and the other one after December 15, 2001 (the tranquil period). With the sample thus divided, neither the EM fund premium nor the DM fund premium is correlated with future managerial skill. The difference between EM and DM fund behavior becomes significant when we look at the relationship between past performance and current premiums. While significant for EM funds for all time horizons, the relation is primarily insignificant for DM funds. The difference between EM and DM fund premiums' response to past performance, although less obvious, continues to hold in the crises period, but vanishes in the tranquil period.

Our finding that abnormal NAV returns are significantly negatively correlated with subsequent changes in the premium may be exploitable by an investor who can set up a hedge between the fund's shares and a portfolio designed to mimic its holdings. If the fund's future behavior of the premium is similar to the past, assembling a long position in the portfolio mimicking the fund's NAV and shorting the fund's shares may bring a profit to the investor in the week following a period of abnormal NAV return. Her gain would be even higher if she undertook such positions in emerging market funds during a crisis period.

References

Bekaert, G. and M.S. Urias (1996), 'Diversification, integration and emerging market closed-end-funds', The Journal of Finance, 51(3), 835-869.

Bleaney, M. and R.T. Smith (2005), 'Closed-End Funds in Emerging Markets', CREDIT Research Paper, University of Nottingham.

Bleaney, M. and R.T. Smith (2003), 'Prior performance and closed-end fund discounts', University of Nottingham Economics Discussion Paper No. 03/16.

Bodurtha, J.N., D.S. Kim, and C.M.C. Lee (1995), 'Closed-end-country funds and U.S. market sentiment', The Review of Financial Studies, 8(3), 879-918.

Branch, B., A. Ma, and J. Sawyer (2006), 'Closed end fund performance on a daily basis – the discovery of a new anomaly', Working Paper, University of Massachusetts Amherst.

Brown, S.J., and W.N. Goetzmann (1995), 'Performance persistence', The Journal of Finance, 50, 679-698.

Carhart, M.M. (1997), 'On persistence in mutual fund performance', The Journal of Finance, 52, 57-82.

Chandar, N. and D.K. Patro (2000), 'Why do Closed-End Country Funds Trade at Enormous Premiums During Currency Crises?', Pacific-Basin Finance Journal, 8, 217-248.

Chay, J.B. and C.A. Trzcinka (1999), 'Managerial performance and the cross-sectional pricing of closed-end funds', Journal of Financial Economics, 52, 379-408.

Chen, C. (1999), 'Currency hedging, currency overlay strategy and the performance of closed-end country and international equity funds', Journal of Alternative Investments, Fall issue.

Chen, N.F., R. Kan, and M.H. Miller (1993), 'Are the Discounts on Closed-End Funds a Sentiment Index?', The Journal of Finance, XLVIII(2), 795-800.

De Long, J.B. and A. Shleifer (1992), 'Closed-End Fund Discounts', Journal of Portfolio Management 18(2), 46-53.

De Long, J.B., A. Shleifer, L.H. Summers, and R.J. Waldmann (1990), 'Noise Trader Risk in Financial Markets', Journal of Political Economy, 98(4), 703-738.

Domowitz, I., J. Glen, and A. Madhavan (1998), 'Country and Currency Risk Premiums in an Emerging Market', Journal of Financial and Quantitative Analysis, 33(2), 189-216.

Elton, E.J., M.J. Gruber, C.R. Blake (1996), 'The persistence of risk-adjusted mutual fund performance', Journal of Business, 69, 133-157.

Errunza, V., L.W. Senbet, and K. Hogan (1998), 'The pricing of country funds from emerging markets: theory and evidence', International Journal of Theoretical and Applied Finance, 1(1), 111-143.

Fama, E.F., and J.D. MacBeth (1973), 'Risk, Return, and Equilibrium: Empirical Tests', Journal of Political Economy, 81, 607-636.

Fama, E.F., and K.R. French (1992), 'The Cross-Section of Expected Stock Returns', The Journal of Finance, XLVII(2), 427-465.

Frankel, J.A and S.L. Schmukler (1996), 'Country Fund Discounts and the Mexican Crisis of December 1994: Did Local Residents Turn Pessimistic Before International Investors?', International Finance Discussion Papers, Board of Governors of the Federal Reserve System.

Frankel, J.A and S.L. Schmukler (1998), 'Crisis, contagion and country funds: Effects on East Asia and Latin America', Managing capital flows and exchange rates (edited by R. Glick), Cambridge University Press, 232-266.

Frankel, J.A and S.L. Schmukler (2000), 'Country Funds and Asymmetric Information', International Journal of Finance and Economics, 5, 177-195.

Garay, U. (2000), 'Essays on Closed-End Country Funds and Investment Trusts', Doctoral Dissertation, University of Massachusetts.

Gemmill, G. and D.C. Thomas (2002), 'Noise Trading, Costly Arbitrage, and Asset Prices: Evidence from Closed-End Funds', The Journal of Finance, LVII(6), 2571-2594.

Goetzmann, W.N., and R.G. Ibbotson (1994), 'Do winners repeat?', Journal of Portfolio Management, 20, 9-18.

Hardouvelis, G.A., R. La Porta, and T.A. Wizman (1993), 'What moves the discount on country equity funds', Working Paper, National Bureau of Economic Research.

Hendricks, D., J. Patel, and R. Zeckhauser (1993), 'Hot hands in mutual funds: short-run persistence of relative performance 1974-1988', The Journal of Finance, 48, 93-130.

Lee, C.M.C, A. Shleifer, and R.H. Thaler (1991), 'Investor sentiment and the closed-end-fund puzzle', The Journal of Finance, XLVI(1), 75-109.

Malkiel, B.G. (1995), 'Returns from investing in mutual funds', The Journal of Finance, 50, 549-569.

Patro, D.K. (2005), 'Stock Market Liberalization and Emerging Market Country Fund Premiums', Journal of Business, 78(1), 135-168.

Pontiff, J. (1997), 'Excess Volatility and Closed-End Funds', The American Economic Review, 87(1), 155-169.

Pontiff, J. (1996), 'Costly Arbitrage: Evidence from Closed-End Funds', The Quarterly Journal of Economics, 1135-1151.

Pontiff, J. (1995), 'Closed-end fund premiums and returns: implications for financial market equilibrium', Journal of Financial Economics, 37, 341-370.

Tsai, P.J., P.E. Swanson, and S.K. Sarkar (2003), 'The Behavior of Closed-End Country Funds: A Comparison of Emerging Market Funds and Developed Market Funds' Working Paper.

Richard, J. and J. Wiggins (2000), 'The Information Content of Closed-End Country Fund Discounts', Financial Services Review 9, 171–181.

Seyhun, H.N. and D. Skinner (1994), 'How do Taxes Affect Investors' Stock Market Realizations?', The Journal of Business 67(2), 231-262.

Sias, R.W. (1997), 'The Sensitivity of Individual and Institutional Investors' Expectations to Changing Market Conditions: Evidence from Closed-End Funds', Review of Quantitative Finance and Accounting, 8, 245-269.

Simpson, M., and S. Ramchander (2002), 'Is Differential Sentiment A Cause of Closed-End Country Fund Premia? An Empirical Examination of the Australian Case', Applied Economics Letters 9, 615-619.

Wermers, R. (1996), 'Momentum investment strategies of mutual funds, performance persistence, and survivorship bias', Working Paper, University of Colorado at Boulder.

Table 1. Descriptive statistics of closed-end fund premiums and NAV returns.

This table reports the time-series and cross-sectional averages of premiums and NAV returns separately for emerging market and developed market funds in each of the three periods we consider. To compute time-series averages we create an equally weighted portfolio of funds in each category. For cross-sectional averages, we calculate the descriptive statistics for each fund and then average them across funds, by type.

	No. of obs.	Premium (%)				NAV return (%)	
		Mean	St. dev	Min	Max	Mean	St. dev.
Panel A: Entire sample period: September 30, 1994 – December 8, 2006							
Time-series averages							
Emerging Market Funds	640	-7.10	13.91	-22.07	31.85	0.14	3.33
		[6.69]	[7.55]	[6.76]	[28.99]	[2.41]	[1.55]
Developed Market Funds	640	-9.24	10.77	-20.34	13.82	0.11	2.13
		[5.21]	[3.01]	[4.55]	[10.13]	[1.80]	[1.64]
Cross -sectional averages							
Emerging Market Funds	29	-7.65	13.47	-32.43	40.96	0.10	4.35
		[9.76]	[6.08]	[6.56]	[32.95]	[0.22]	[0.98]
Developed Market Funds	17	-11.27	6.97	-26.16	12.57	0.11	3.05
		[7.82]	[3.75]	[4.49]	[18.55]	[0.17]	[1.17]
Panel B: December 25, 1995 – December 14, 2001							
Time-series averages							
Emerging Market Funds	312	-9.71	18.28	-26.62	46.62	0.01	3.94
		[6.76]	[8.44]	[5.75]	[33.95]	[2.76]	[1.63]
Developed Market Funds	312	-13.14	9.53	-23.02	10.42	0.02	2.33
		[3.06]	[2.59]	[3.58]	[11.27]	[1.95]	[1.22]
Cross -sectional averages							
Emerging Market Funds	29	-8.97	13.04	-32.37	31.36	0.03	4.90
		[15.21]	[8.13]	[6.63]	[36.36]	[0.27]	[1.15]
Developed Market Funds	17	-13.36	6.05	-25.98	3.20	0.08	3.05
		[6.91]	[4.11]	[4.59]	[15.95]	[0.16]	[0.62]
Panel C: December 15, 2001 – December 8, 2006							
Time-series averages							
Emerging Market Funds	260	-5.39	9.24	-17.08	15.87	0.47	2.56
		[5.89]	[2.71]	[4.31]	[11.87]	[2.00]	[0.90]
Developed Market Funds	260	-4.22	12.59	-16.92	18.81	0.26	1.98
		[3.02]	[2.80]	[3.56]	[6.93]	[1.74]	[2.15]
Cross -sectional averages							
Emerging Market Funds	24	-6.66	7.47	-20.64	14.39	0.41	3.15
		[6.73]	[3.97]	[4.13]	[20.26]	[0.25]	[0.95]
Developed Market Funds	13	-4.98	5.45	-15.31	11.91	-0.60	4.52
		[10.51]	[2.50]	[7.24]	[19.62]	[3.09]	[7.30]

Table 2. Descriptive statistics of closed-end fund Jensen's alphas

This table reports cross-sectional averages of fund's alphas. Non-overlapping 13- and 26-week Jensen's alphas for our sample of funds were computed and then averaged across fund types. The proxies for the CAPM model's market portfolio and risk-free rate are local market indexes (in US dollars) and the one-month Eurodollar rate, respectively.

	13-week Jensen's alpha (%)				26-week Jensen's alpha (%)			
	Mean	St. dev	Min	Max	Mean	St. dev	Min	Max
Panel A: Entire sample period: December 25, 1995 – December 8, 2006								
Cross -sectional averages								
Emerging Market Funds	0.03	0.54	-1.48	1.24	0.02	0.34	-0.74	0.65
	[0.12]	[0.27]	[1.06]	[0.81]	[0.12]	[0.15]	[0.39]	[0.41]
Developed Market Funds	-0.07	0.61	-2.00	1.22	-0.04	0.33	-0.78	0.50
	[0.11]	[0.58]	[2.44]	[1.28]	[0.10]	[0.20]	[0.56]	[0.47]
Panel B: December 25, 1995 – December 14, 2001								
Cross -sectional averages								
Emerging Market Funds	0.01	0.61	-1.44	1.23	-0.01	0.39	-0.73	0.56
	[0.16]	[0.34]	[1.09]	[0.81]	[0.15]	[0.18]	[0.41]	[0.42]
Developed Market Funds	-0.09	0.58	-1.60	1.13	-0.08	0.36	-0.78	0.43
	[0.10]	[0.40]	[1.13]	[1.27]	[0.12]	[0.24]	[0.56]	[0.47]
Panel C: December 15, 2001 – December 8, 2006								
Cross -sectional averages								
Emerging Market Funds	0.06	0.34	-0.67	0.67	0.05	0.23	-0.30	0.41
	[0.14]	[0.18]	[0.38]	[0.57]	[0.14]	[0.14]	[0.20]	[0.37]
Developed Market Funds	-0.78	0.30	-1.31	-0.23	0.03	0.20	-0.26	0.33
	[2.98]	[0.19]	[2.84]	[3.20]	[0.09]	[0.12]	[0.19]	[0.27]

Table 3. Managerial performance against country fund premium: all funds.

This table reports the coefficient estimates of the cross-sectional regressions that we use to test the predictive power of the country fund premium on future management performance.

$$PERF_{i,t} = \beta_0 + \beta_1 PREM_{i,t-n} + \varepsilon_{i,t}, \; n = 1, 2, 3$$

$PERF_{it}$ and $PREM_{it}$ are the management performance and the premium of fund i at time t, respectively. The measures of managerial performance we use are cumulative NAV returns (Panel A) and unconditional CAPM alpha (Panel B) for various non-overlapping horizons. In the CAPM model, the market portfolio is proxied by local market indexes and the risk-free rate by the one-month Eurodollar rate. All country-specific stock market indices are expressed in US dollars. In order to examine how far into the future the premium can anticipate management performance, we regress fund performance at the end of each horizon period on the fund premium at the end of the previous period, as well as on the second and third fund premium lags. After we estimate the cross-sectional regressions for each period, following Fama and MacBeth (1973), we average the regression slopes. Numbers in parentheses are t-values. Significance at 1, 5, and 10% levels is denoted by ***, **, and *, respectively.

	Model 1 (1 week)		Model 2 (4 weeks)		Model 3 (13 weeks)		Model 4 (26 weeks)	
	β_0	β_1	β_0	β_1	β_0	β_1	β_0	β_1
Panel A: Cumulative NAV returns as a performance measure								
n = 1	0.165**	0.003	0.798**	0.001	2.644*	-0.024	4.912*	-0.064
	(1.887)	(1.080)	(1.847)	(0.072)	(1.661)	(-0.615)	(1.570)	(-1.055)
n = 2	0.123*	-0.001	0.724**	-0.010	2.517*	-0.046	6.670**	0.053
	(1.415)	(-0.309)	(1.675)	(-0.946)	(1.515)	(-1.256)	(1.982)	(0.611)
n = 3	0.118*	-0.001	0.739**	-0.013	3.039**	-0.006	5.507*	0.002
	(1.361)	(-0.438)	(1.725)	(-1.259)	(1.716)	(-0.135)	(1.611)	(0.025)
Panel B: Jensen's alpha as a performance measure (β_1 is multiplied by 100)								
n = 1					-0.008	-0.064	-0.015	-0.053
					(-0.206)	(-0.385)	(-0.390)	(-0.515)
n = 2					0.002	-0.075	-0.004	-0.004
					(0.051)	(-0.733)	(-0.118)	(-0.040)
n = 3					0.002	-0.026	-0.001	0.086
					(0.064)	(-0.202)	(-0.025)	(0.727)

Table 4. Country fund premium against managerial performance: all funds

This table reports the coefficient estimates of the cross-sectional regressions that we use to test the predictive power of management performance on the country fund premium.

$$PREM_{i,t} = \gamma_0 + \gamma_1 PERF_{i,t-n} + \varepsilon_{i,t}, \; n = 1, 2, 3$$

$PERF_{it}$ and $PREM_{it}$ are the management performance and the premium of fund i at time t, respectively. The measures of managerial performance we use are cumulative NAV returns (Panel A) and unconditional CAPM alpha (Panel B) for various non-overlapping horizons. In the CAPM model, the market portfolio is proxied by local market indexes and the risk-free rate by the one-month Eurodollar rate. All country-specific stock market indices are expressed in US dollars. In order to examine how far into the future management performance is reflected in the fund premium, we regress fund premium at the end of each horizon period on the management performance at the end of the previous period, as well as on the second and third performance lags. After we estimate the cross-sectional regressions for each period, following Fama and MacBeth (1973), we average the regression slopes. Numbers in parentheses are t-values. Significance at 1, 5, and 10% levels is denoted by ***, **, and *, respectively.

	Model 1 (1 week)		Model 2 (4 weeks)		Model 3 (13 weeks)		Model 4 (26 weeks)	
	γ_0	γ_1	γ_0	γ_1	γ_0	γ_1	γ_0	γ_1
Panel A: Cumulative NAV returns as a performance measure								
n = 1	-8.411***	-0.182***	-9.137***	-0.121**	-9.766***	-0.083*	-9.415***	-0.101*
	(-36.652)	(-3.855)	(-18.685)	(-2.109)	(-11.102)	(-1.355)	(-6.910)	(-1.705)
n = 2	-8.398***	-0.173***	-9.190***	-0.143***	-9.818***	-0.105**	-8.796***	-0.113**
	(-36.494)	(-3.626)	(-18.466)	(-2.511)	(-10.300)	(-1.699)	(-5.549)	(-1.876)
n = 3	-8.413***	-0.173***	-9.101***	-0.148***	-9.835***	-0.133**	-9.127***	-0.081
	(-36.774)	(-3.658)	(-17.988)	(-2.509)	(-10.113)	(-1.957)	(-6.327)	(-1.316)
Panel B: Jensen's alpha as a performance measure								
n = 1					-8.867***	-1.670**	-9.010***	-4.188**
					(-10.909)	(-1.747)	(-7.590)	(-1.932)
n = 2					-8.829***	-1.981**	-9.024***	-5.722***
					(-10.497)	(-2.044)	(-6.883)	(-2.681)
n = 3					-8.921***	-1.833**	-9.173***	-1.726
					(-10.215)	(-1.840)	(-6.681)	(-0.684)

Table 5. Decomposition of country fund premium into fund price return, NAV return, and exchange rate change

This table reports the coefficient estimates of the cross-sectional regressions that we use to test the effect of exchange rate on the negative relationship between past performance and future premium.

$$PREM_{it} = \alpha_0 + \alpha_1 NAV\_ret_{i,t-1} + \alpha_2 PR\_ret_{i,t-1} + \alpha_3 EXR\_chg_{i,t-1} + \varepsilon_{it}$$

$PREM_{it}$, NAV_ret_{it}, PR_ret_{it}, and EXR_chg_{it} are the premium, NAV return, price return, and the exchange rate change of fund *i* at time *t,* respectively. The horizon period is one week. Numbers in parentheses are t-values. Significance at 1, 5, and 10% levels is denoted by ***, **, and *, respectively.

	NAV_ret	*PR_ret*	*EXR_chg*
Panel A: Univariate regressions			
All funds	-0.182***	0.002	0.227***
	(-3.855)	(0.045)	(2.764)
EM funds	-0.168***	-0.006	0.562***
	(-3.085)	(-0.130)	(3.198)
DM funds	-0.114	0.051	-0.138
	(-1.165)	(0.732)	(-0.124)
Panel B: Multivariate regressions			
All funds	-0.318***	0.156***	0.197***
	(-5.415)	(3.063)	(2.488)
EM funds	-0.298***	0.139***	0.575***
	(-4.190)	(2.266)	(3.131)
DM funds	-0.355***	0.035	-1.149
	(-2.793)	(0.353)	(-1.013)

Table 6. Country fund premium against managerial performance: emerging market funds vs. developed market funds

This table reports the coefficient estimates of the cross-sectional regressions that we use to test the predictive power of management performance on the fund premium, by fund type.

$$PREM_{i,t} = \gamma_0 + \gamma_1 PERF_{i,t-n} + \varepsilon_{i,t}, \; n = 1, 2, 3$$

$PERF_{it}$ and $PREM_{it}$ are the management performance and the premium of fund i at time t, respectively. The measures of managerial performance we use are cumulative NAV returns (Panel A) and unconditional CAPM alpha (Panel B) for various non-overlapping horizons. In the CAPM model, the market portfolio is proxied by local market indexes and the risk-free rate by the one-month Eurodollar rate. All country-specific stock market indices are expressed in US dollars. In order to examine how far into the future management performance is reflected in the fund premium, we regress fund premium at the end of each horizon period on the management performance at the end of the previous period, as well as on the second and third performance lags. After we estimate the cross-sectional regressions for each period, following Fama and MacBeth (1973), we average the regression slopes. Numbers in parentheses are t-values. Significance at 1, 5, and 10% levels is denoted by ***, **, and *, respectively.

	Emerging Market Funds (γ_1)				Developed Market Funds (γ_1)			
	Model 1 (1 week)	Model 2 (4 weeks)	Model 3 (13 weeks)	Model 4 (26 weeks)	Model 1 (1 week)	Model 2 (4 weeks)	Model 3 (13 weeks)	Model 4 (26 weeks)
Panel A: Cumulative NAV returns as a performance measure								
n = 1	-0.168***	-0.104*	-0.113*	-0.128**	-0.114	-0.066	-0.042	-0.023
	(-3.085)	(-1.473)	(-1.584)	(-1.997)	(-1.165)	(-0.610)	(-0.355)	(-0.281)
n = 2	-0.172***	-0.129**	-0.157**	-0.113*	-0.091	-0.072	-0.052	-0.155**
	(-3.148)	(-1.855)	(-2.163)	(-1.665)	(-0.928)	(-0.656)	(-0.355)	(-2.206)
n = 3	-0.167***	-0.143**	-0.160**	-0.089	-0.068	-0.076	-0.067	-0.138*
	(-3.080)	(-1.989)	(-2.020)	(-1.282)	(-0.704)	(-0.649)	(-0.502)	(-1.445)
Panel B: Jensen's alpha as a performance measure								
n = 1			-2.316**	-5.326**			-0.482	0.359
			(-1.687)	(-2.293)			(-0.273)	(0.103)
n = 2			-2.961**	-5.864**			-0.209	-4.674*
			(-2.405)	(-2.450)			(-0.108)	(-1.638)
n = 3			-2.392*	1.354			-1.388	-6.815**
			(-1.660)	(0.462)			(-0.736)	(-1.888)

Table 7. Country fund premium against managerial performance per sub-period.

This table reports the coefficient estimates of the cross-sectional regressions that we use to test the predictive power of management performance on the fund premium, by sub-period.

$$PREM_{i,t} = \gamma_0 + \gamma_1 PERF_{i,t-n} + \varepsilon_{i,t}, \; n = 1, 2, 3$$

$PERF_{it}$ and $PREM_{it}$ are the management performance and the premium of fund *i* at time *t,* respectively. The measures of managerial performance we use are cumulative NAV returns (Panel A) and unconditional CAPM alpha (Panel B) for various non-overlapping horizons. In the CAPM model, the market portfolio is proxied by local market indexes and the risk-free rate by the one-month Eurodollar rate. All country-specific stock market indices are expressed in US dollars. In order to examine how far into the future management performance is reflected in the fund premium, we regress fund premium at the end of each horizon period on the management performance at the end of the previous period, as well as on the second and third performance lags. After we estimate the cross-sectional regressions for each period, following Fama and MacBeth (1973), we average the regression slopes. Numbers in parentheses are t-values. Significance at 1, 5, and 10% levels is denoted by ***, **, and *, respectively.

	Emerging Market Funds						Developed Market Funds					
	Cumulative NAV returns (γ_1)				*Jensen's alpha* (γ_1)		*Cumulative NAV returns* (γ_1)				*Jensen's alpha* (γ_1)	
	Model 1 (1 week)	Model 2 (4 weeks)	Model 3 (13 weeks)	Model 4 (26 weeks)	Model 3 (13 weeks)	Model 4 (26 weeks)	Model 1 (1 week)	Model 2 (4 weeks)	Model 3 (13 weeks)	Model 4 (26 weeks)	Model 3 (13 weeks)	Model 4 (26 weeks)
Panel A: sub-period 1 (December 25, 1995 – December 14, 2001).												
n = 1	-0.313***	-0.263***	-0.257**	-0.256**	-5.405***	-8.777**	-0.352***	-0.163*	-0.247**	-0.142	-3.745**	-4.790
	(-3.374)	(-2.437)	(-2.362)	(-2.660)	(-2.678)	(-2.662)	(-3.258)	(-1.364)	(-2.020)	(-1.318)	(-1.869)	(-1.213)
n = 2	-0.328***	-0.313***	-0.332***	-0.250**	-6.473***	-9.420**	-0.325***	-0.183*	-0.202	-0.285***	-3.839*	-9.786**
	(-3.462)	(-2.924)	(-3.163)	(-2.350)	(-3.714)	(-2.639)	(-2.844)	(-1.602)	(-1.314)	(-3.240)	(-1.529)	(-2.665)
n = 3	-0.344***	-0.341***	-0.361***	-0.238**	-6.652***	-8.054**	-0.289***	-0.191*	-0.267*	-0.256**	-4.400**	-9.762**
	(-3.733)	(-3.109)	(-3.177)	(-2.294)	(-3.214)	(-2.294)	(-2.602)	(-1.589)	(-1.708)	(-2.355)	(-1.898)	(-2.021)
Panel B: sub-period 2 (December 15, 2001 – December 8, 2006)												
n = 1	-0.044	0.083	0.063	0.034	1.425	-0.941	0.272*	0.047	0.217	0.144	3.682	6.592
	(-0.691)	(0.991)	(0.814)	(0.524)	(0.900)	(-0.289)	(1.482)	(0.245)	(1.028)	(1.125)	(1.242)	(1.064)
n = 2	-0.022	0.088	0.031	0.036	0.835	-2.323	0.294**	0.056	0.142	-0.008	4.797*	1.938
	(-0.351)	(1.118)	(0.336)	(0.459)	(0.599)	(-0.624)	(1.652)	(0.274)	(0.502)	(-0.078)	(1.610)	(0.444)
n = 3	-0.003	0.088	0.054	0.073	2.786*	11.637***	0.289**	0.065	0.192	0.057	2.780	-4.770
	(-0.049)	(1.028)	(0.508)	(0.690)	(1.713)	(3.844)	(1.656)	(0.299)	(0.772)	(0.400)	(0.849)	(-0.709)

Figure 1. The time-series behavior of the premiums of equally-weighted portfolios

Appendix A

Table A.1. List of closed-end funds

Fund name	Ticker	Sample period	No. of weekly obs.
Emerging Market Funds			
Argentina Fund	AF	09/94 - 12/01	373
Brazil Fund	BZF	09/94 - 06/06	608
Brazilian Equity Fund	BZL	09/94 - 04/05	547
Chile Fund	CH	09/94 - 12/06	639
China Fund	CHN	09/94 - 12/06	636
Emerging Mexico Fund	MEF	09/94 - 04/99	233
First Philippines Fund	FPF	09/94 - 06/03	448
Greater China Fund	GCH	09/94 - 12/06	632
India Fund	IFN	09/94 - 12/06	639
India Growth Fund	IGF	09/94 - 05/03	428
Indonesia Fund	IF	09/94 - 12/06	639
JF India	JFI	09/94 - 06/03	448
Korea Equity & Income	KEF	09/94 - 12/06	640
Korea Fund	KF	09/94 - 12/06	639
Korea Investment	KIF	09/94 - 11/01	370
Malaysia Fund	MF	09/94 - 12/06	638
Mexico Equity & Income	MXE	09/94 - 12/06	639
Mexico Fund	MXF	09/94 - 12/06	640
MS India Investment	IIF	09/94 - 12/06	637
Pakistan Investment	PKF	09/94 - 06/01	346
Singapore Fund	SGF	09/94 - 12/06	639
Taiwan Equity Fund	TYW	09/94 - 05/00	288
Taiwan Fund	TWN	09/94 - 12/06	634
Taiwan Greater China	TFC	09/94 - 12/06	637
Templeton China World	TCH	09/94 - 08/03	458
Templeton Russia	TRF	09/95 - 12/06	589
Thai Capital Fund	TF	09/94 - 12/06	584
Thai Fund	TTF	09/94 - 12/06	639
Turkish Investment	TKF	09/94 - 12/06	636
Developed Market Funds			
Aberdeen Australia Equity Fd.	IAF	09/94 - 12/06	638
Austria Fund	OST	09/94 - 04/02	389
Central Fund of Canada	CEF	09/94 - 12/06	640
Emerging Germany Fund	FRG	09/94 - 04/99	238
France Growth Fund	FRF	09/94 - 07/04	501
First Israel Fund	ISL	09/94 - 12/06	639
Germany Fund	GER	09/94 - 10/05	571
Growth Fund of Spain	GSP	09/94 - 12/98	217
Italy Fund	ITA	09/94 - 02/03	435
Japan Equity Fund	JEQ	09/94 - 12/06	634
Japan Smaller Cap. Fund	JOF	09/94 - 12/06	640
New Germany Fund	GF	09/94 - 12/06	638
New Ireland Fund	IRL	09/94 - 12/06	635
Portugal Fund	PGF	09/94 - 12/00	325
Spain Fund	SNF	09/94 - 12/06	639
Swiss Helvetia Fund	SWZ	09/94 - 12/06	640
United Kingdom Fund	UKM	09/94 - 04/99	234

Appendix B

Table B.1. Foreign stock market indexes

Country/Region	Exchange or market index name	Datastream market index
Emerging Markets		
Argentina	Argentina Merval Index	ARGMERV(PI)
Brazil	Brazil Bovespa Index	BRBOVES(PI)
Chile	Chile general (IGPA) Index	IGPAGEN(PI)
China	Shanghai Composite Index	CHSCOMP(PI)
India	Bombay SE National Index (100)	IBOMBSE(PI)
Indonesia	Jakarta Composite Index	JAKCOMP(PI)
Malaysia	Kuala Lumpur SE Composite Idx	KLPCOMP(PI)
Mexico	Mexico IPC (Bolsa) Index	MXIPC35(PI)
Pakistan	Karachi Stock Exchange 100	PKSE100(PI)
The Philippines	PSE Composite Index	PSECOMP(PI)
Russia	Moscow Times (RUR) Index	RSMTIND(PI)
Singapore	Singapore Straits Times Index	SNGPORI(PI)
South Korea	Korea KOSPI Index	KORCOMP(PI)
Taiwan	Taiwan TAIEX Weighted Index	TAIWGHT(PI)
Thailand	Thailand Stock Exchg SET Index	BNGKSET(PI)
Turkey	Turkey ISE National 100	TRKISTB(PI)
Developed Markets		
Australia	ASX All Ordinaries Index	AUSTALL(PI)
Austria	ATX - Austrian Traded Index	ATXINDX(PI)
Canada	S&P/TSX Composite Index	TTOCOMP(PI)
France	SBF 250 Index	FSBF250(PI)
Germany	CDAX Index	CDAXGEN(PI)
Ireland	Ireland ISEQ Index	ISEQUIT(PI)
Israel	Israel TA 100 Index	ISTMISH(PI)
Italy	Italy Datastream Index	TOTMKIT(PI)
Japan	Nikkei 225 Index	JAPDOWA(PI)
Portugal	Portugal PSI Index	POPSIGN(PI)
Spain	Madrid Stock Index	MADRIDI(PI)
Switzerland	Switzerland Datastream Index	TOTMKSW(PI)
United Kingdom	FTSE All Share Index	FTALLSH(PI)