INVESTOR SENTIMENT AND THE DETERMINATION OF CLOSED-END COUNTRY FUND PRICES

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July 1993

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ABSTRACT

Country funds offer investors access to portfolios that include common stocks for widely diversified industries within a single foreign country. The country fund shares trade on the NYSE or AMEX whereas the common stocks held by the fund trade in a foreign stock market. We find high positive correlation among premiums for country funds and conclude a "foreign-fund investor sentiment" is systematic to all country funds. <u>Premiums</u> and domestic market indexes correlate positive for funds investing in developed-economies (which largely concentrate in the hands of individual investors) and negative for funds investing in developing-economies (which primarily are held by institutions). <u>Returns</u> on country funds and domestic indexes correlate positive irrespective of ownership structure. These results signify that net asset values are conditioned on the state of the foreign economy and suggest that foreign and domestic investor use different information in setting asset prices. Our study supports the investor sentiment hypothesis.

INVESTOR SENTIMENT AND THE DETERMINATION OF CLOSED-END COUNTRY FUND PRICES

Lee, Shleifer, and Thaler (1991 "LST") present a provocative study about why closed-end funds trade at prices that are different from the net asset values of the underlying shares owned by the fund. Their main claim is "that stocks with similar ownership structures but very different fundamentals move together in the market" [Chopra, Lee, Shleifer, and Thaler (1993, p. 801)]. They find support for their claim in the "noise trader" model of Delong, Shleifer, Summers, and Waldmann (1990). According to the noise trader model, rational investors conditioning decisions upon fundamental factors must interact in the financial markets with noise traders conditioning decisions upon "investor sentiment." LST hypothesize that noise trader sentiments affect prices for closed-end funds held largely by individual investors whereas fundamental factors affect the share prices of the common stocks owned by the funds.

LST present empirical evidence that (1) the behavior of closed-end fund premiums (the premium equals the fund price minus the net asset value) depends on whether there is high or low institutional ownership in the fund, and (2) the funds with high individual ownership behave similarly to small firm stocks (small firm stocks historically concentrate in the hands of individual investors). LST suggest that individuals base their decisions upon investor sentiment instead of fundamental factors. Consequently, investor sentiments partially determine the premium for closed-end funds with low institutional ownership.

Chen, Kan, and Miller (1993 "CKM") contest the empirical evidence provided by LST. In particular, CKM claim that further analysis of closed-end fund prices does not yield the findings purported by LST. Chopra and LST (1993 "CLST") respond to the CKM criticisms; indeed, the salvos continue for two complete rounds. The exchanges between CLST and CKM suggest that the original LST empirical evidence is unconvincing. The contention between LST and CKM largely occurs because the closed-end funds trade in the same market as the underlying common stocks. Due to this intermingling, it is difficult to empirically disentangle the price movements attributable to noise from fundamental changes. The current study avoids this point of contention by examining the price behavior of closed-end single country funds. Country funds provide a unique opportunity for examining the importance of investor sentiment because traders on a domestic exchange (NYSE or AMEX) establish the share price of the country fund whereas traders in a foreign stock market establish the prices for the common stocks owned by the fund. Arguably, the foreign market participants have more complete information than domestic traders about fundamental factors affecting share prices of the foreign stocks. The domestic traders, on the other hand, are more aware of potential price changes resulting from changes in investor sentiments.

Our results offer exciting support for the hypothesis that investor sentiments are an important determinant of financial asset prices. Our findings follow.

- The country fund premiums exhibit a high degree of positive correlation with each other and with their equal-weighted index. They correlate less with domestic market indexes such as the S&P500.
- (2) Country fund shares for developed-economies concentrate in the hands of individual investors whereas shares for developing-economies have higher institutional ownership. The premiums for the former covary positively with domestic markets whereas for the latter premiums covary negatively.
- (3) Returns on country fund shares do not depend on ownership structure or the developmental state of the foreign economy. With domestic indexes, however, country fund returns correlate positive and significant.

The investor sentiment hypothesis provides a consistent interpretation of these results. When the rising tide of investor optimism lifts domestic stock returns, then all country fund returns rise. Country fund shares for developed-economies rise as surely as shares for developing-economies. Movements in premiums, however, are different for developed-economies than for developing-economies. Since the premium equals the country fund share price minus the net asset value, and country fund returns correlate positively with domestic markets, differential movements in premiums result from differential movements in net asset values. The demarcation in our study between rational and noise trader does not lie, as in LST, between the institution and the individual investor. It lies, rather, between the rational foreign market investor conditioning net asset values upon fundamental factors and the domestic noise trader conditioning country fund share prices on investor sentiments.

The study proceeds as follows. Section I presents some background information about country funds and presents summary evidence about country fund prices and premiums. Section II examines the comovement among funds and domestic market indexes. Section III investigates the association between ownership structure and country fund premiums. A brief summary concludes the study.

I. Background on Country Funds

Country funds offer investors access to portfolios that include common stocks for widely diversified industries within a single foreign country. The country fund shares trade on the NYSE or AMEX whereas the common stocks held by the fund trade in a foreign stock market. The Japan Fund, the first single country fund, was introduced in 1962. Through 1985, however, only three single country funds actively traded. Thereafter, the country fund market has grown substantially. Forty closed-end country funds with \$10 billion of assets traded on the New York and American stock exchanges in April 1993.

Bonser-Neal, Brauer, Neal, and Wheatley (1990) study the relation between country fund premiums and international investment restrictions. They analyze weekly data for five country funds from 1981 through 1989 and conclude that the premium is sensitive to the ease of access for investing into the foreign market. Bailey and Jagtiani (1992) reach similar conclusions when they find that foreigners pay significantly higher prices than Thai investors for identical shares traded on the Alien and Main Boards of the Thai market¹. Eun, Janakiramanan, and Senbet (1992) analytically model segmented international capital markets and derive a solution showing the country fund premium depends on the quantity of shares owned by the fund relative to the amount available to the international market.

Bailey and Lim (1992) examine the diversification benefits from international investing. They suggest that country funds offer U.S. investors some diversification benefits but are poor substitutes for direct holdings of foreign equities. On this account, they conclude that country funds behave more like domestic U.S. stocks than foreign equity portfolios. Eun and Shim (1989) report positive correlation in daily returns across national stock markets, and Barclay, Litzenberger, and Warner (1990) report similar correlation between daily returns for dually listed common stocks on the New York and Tokyo stock exchanges.

Studies on investor sentiment sometimes have included country funds. Two of the eighteen closed-end funds analyzed by LST are country funds; the correlation between domestic funds and country funds is different than between alternative domestic funds. Similarly, Delong and Shleifer (1992, p.50) report that "at the close of 1989, twelve out of sixty-six stock funds listed in the *Weisenberger Investment Companies Annual* were selling at premiums over 20%; all twelve were country funds." Thus far, though, the unique opportunity provided by country funds for investigating the investor sentiment hypothesis has not been exploited.

For this study, weekly country fund prices and net asset values (NAVs) for all closed-end single country funds trading on the NYSE and AMEX since 1981 are

¹ Since September 1987, the Stock Exchange of Thailand quotes two prices for dozens of listed companies, one for Thais who trade on the 'Main Board' and another for foreigners who trade on the 'Alien Board.'

collected from *Barron's*.² The sample period for each fund commences with the date of the initial offering and extends until April 12, 1993, except for the Japan and France funds which open-end prior to the close of the sample period. The Mexico fund possesses the longest sample period with 543 weekly observations and the China fund launched in August 1992 has the shortest sample period with 33 observations. Table I presents for each of 40 country funds the number of observations, the listing stock exchange, and the initial observation date.³ Table I also provides the institutional ownership percentages for country funds as reported in May 1993 by the Dow Jones News Retrieval Services.

It is evident from Table II that the country fund premiums move a lot. This table expresses each weekly premium (i.e., domestic country fund share price minus foreign country net asset value) as a proportion of net asset value. For each year the mean relative premium equals the average of the approximately 52 weekly relative premiums.⁴ The table entries represent the annual averages. For example, the table entry for the Malaysia Fund in 1989 indicates that the fund share traded at an average 5.93 percent discount relative to net asset value. In 1990, the mean share price for the country fund exceeded net asset value by 12.27 percent, and in 1991 the country fund sold at a mean discount of 4.90 percent. Two-sided t-statistics test the hypothesis that between two consecutive years the premium is constant. The significance levels for the statistics, listed in Table II beneath the mean relative discount, indicate a significant change in

² Barron's provides weekly NAV and market price data for all country funds trading on the NYSE and AMEX. Market prices are reported as of Friday's close of business in New York and NAVs are computed on the basis of market values in local currency as of Friday's close for the foreign country's stock exchange. The currency is translated into U.S. dollars using the contemporaneously observed exchange rate. The fund prices and NAVs are <u>approximately</u> synchronous because of the difference between the local and foreign times.

 $^{^{3}}$ The number of observations may be slightly less than the number of weeks in the sample period due to missing quotations in *Barron's*.

⁴ Five funds appearing in Table 1 (Brazilian Equity, China ,Greater China, Jardine F. China, and Korean Investment) possess fewer than 52 observations and are not reported in Table 2.

mean relative premium for 105 out of the 134 consecutive year-pairs. Sixty-six of 105 significant changes are premium decreases and 39 are premium increases.

II. Comovement Between Country Funds

LST discuss several implications of the noise trader theory for closed-end funds. They explain that the theory implies closed-ends funds correlate with each other, regardless of differences in fundamentals, and also that closed-end funds correlate with other diversified portfolios affected by the same investor sentiments.⁵ LST analyze 18 closed-end funds for evidence of the above phenomena. Our analysis focuses on the country funds described in the previous section.

Table III presents pairwise correlation coefficients among the weekly country fund relative premiums (i.e., (fund share price - NAV) \div NAV).⁶ The entries left of the main diagonal are the correlation coefficients between the respective funds, and the entries right of the main diagonal are significance levels for the coefficients. In each computation, the observation period encompasses the interval for which the funds overlap. For the Emerging Mexico and France Growth funds, for example, the correlation coefficient between the relative premiums for 126 weeks (October 15, 1990, through April 12, 1993) is 0.48 and the significance level for the statistic is less than 0.005 . The correlation between the relative premiums for the two funds is positive and statistically significant.

There are 528 possible inter-fund comparisons.⁷ Inspection of the upper right portion of the table shows that 86 percent of all correlation coefficients are statistically

⁵ LST also explain that the noise trader theory implies closed-end funds likely have initial offerings when premia are high. Since most country funds have begun in a concentrated time span since 1985, we are not able to offer meaningful evidence about this particular implication.

⁶ The analysis is not conducted for the five funds mentioned in footnote 4 as well as for the two funds (France and Japan) that open-end midway through the sample period.

⁷ Exchange rate movements affect country fund realized returns. Several studies, e.g. Joy, Panton, Reilly, and Martin (1976) and Hamao, Masulis, and Ng (1990), analyze the correlation among stock returns in various countries. They report that adjustment for exchange rate movements does not affect the findings. Herein, no adjustments are made for exchange rate movements.

distinguishable from zero at the ten percent significance level, and 80 percent are positive. Most of the negative coefficients occur for the Brazil, Argentina, Taiwan, and Turkish Investment funds. Ignoring these four funds, then 364 of the 406 possible interfund correlation coefficients (90 percent) are positive and almost all are statistically significant. As implied by the investor sentiment hypothesis, the country fund premiums covary.

The lower rows of Table III show the correlation between the country fund premiums and various indexes. An equal weighted country fund index (EWI) is set equal to the simple average of the relative premiums for all country funds reporting share prices and NAVs in a given week. Generally, the correlation between any particular fund's relative premiums and the EWI is positive and statistically significant. For example, 31 of the 33 funds correlate positively with the EWI and 27 of the 31 coefficients are significant at the 10 percent significance level. A "foreign-fund investor sentiment" is systematic to all country funds.

Included also are six well-known market indexes (e.g., S&P500 Composite, OTC Composite, etc.). The country fund relative premiums correlate less with the domestic indexes than with the EWI, yet the correlation nonetheless is positive and significant. For the 33 country funds in Table III, for example, the average correlation coefficient for the relative premiums with respect to the EWI equals 0.55; with respect to the S&P500 Composite the coefficient averages 0.25. (The significance levels average 0.02 and 0.09, respectively.)⁸

III. Ownership Structure and Country Fund Prices

The analyses below investigate the importance of ownership structure. The degree of institutional ownership from Table I serves as a criterion for classifying closed-

⁸ The correlation between the premiums for a particular fund and the S&P500 Composite generally is significant and positive. Conversely, the correlation between the EWI and the S&P500 is indistinguishable from zero. LST report a similar result for their sample of generic closed-end funds.

end country funds into six groups. Groups 1 and 6 include the funds with the five highest and five lowest degrees of institutional ownership, respectively. The relative premiums for all funds in a group are averaged to yield the group equal-weighted index. Table IV shows that the group equal-weighted index correlates positively with the EWI irrespective of the degree of institutional ownership. (Recall the EWI averages the relative premiums for <u>all</u> country funds.) This is additional evidence that foreign-fund investor sentiment is a systematic risk.

Ownership structure is a factor in the correlation between domestic market and group equal-weighted indexes. The correlation between relative fund premiums and the S&P500 Composite is -0.30 for the high institutional ownership group and 0.28 for the low institutional ownership group. Relative premiums for funds with high institutional ownership generally move against the market. Conversely, premiums for funds largely in the hands of individual investors move with the market.

The analysis is repeated for other institutional ownership groups. Groups 2 and 5 include the funds with the ten highest and ten lowest (group 1 is therefore a subset of group 2; group 6 is a subset of 5) degrees of institutional ownership. Groups 3 and 4 include the funds with the 15 highest and 16 lowest degrees of institutional ownership. Table IV clearly shows that relative premiums for funds with high institutional ownership covary negatively with domestic market indexes; funds held by individual investors covary positively with domestic markets.

Table V also uses the degree of institutional ownership for partitioning funds into groups. For each group, the equal-weighted weekly percentage change in country fund share price (i.e., the weekly rate of return net of dividends) is compared to the percentage change in the various indexes. The returns on country fund share prices and domestic market indexes correlate positively for all institutional ownership groups. Taken together, Tables IV and V yield the intriguing result that country fund premiums depend on ownership structure but country fund returns do not.

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The next analysis assigns each country fund to either of two groups, developedeconomies or developing-economies, based upon the classification list in Blomstrom, Lipsey, and Zejan (1992). The developed-economy category contains 15 funds and the developing-economy category contains 17 funds. It is notewothy that 11 of the 15 funds with the highest institutional ownership invest in developing-economies, and 11 of the 16 funds with the lowest institutional ownership invest in developed-economies. The weekly mean relative premium for each category is computed.

Table VI shows a weak and statistically significant positive correlation for the relative premiums between developed and developing-economy country funds. The relative premiums for all states of economic development also correlate positively with the EWI. The partitioning has not affected the positive covariation that exists among alternative country funds. The systematic risk factor associated with foreign-fund investor sentiment is invariant to the state of the foreign economy.

Table VI shows the state of the foreign economy is a factor in the correlation between relative premiums and domestic market indexes. The relative premiums for funds invested in developed countries covary positively with U.S. stocks, implying that these premiums become larger (or discounts become smaller) when investor optimism about domestic stocks is on the upswing. Conversely, for developing-economies the correlation is negative implying that when U.S. stock prices are rising, the premiums are diminishing (or discounts are growing). These results signify that net asset values are conditioned on the developmental state of the foreign economy.

IV. Summary

The noise trader model suggests investor sentiment as well as fundamental factors are important determinants of financial asset prices. Previous work by Lee, Shleifer, and Thaler (1991) introduces evidence that investor sentiment is a detectable factor in the pricing of closed-end mutual funds. Chen, Kan, and Miller (1993) contest the LST findings. The current study adds important evidence about the existence of investor sentiment through analysis of country fund prices.

Country funds provide a unique opportunity for studying investor sentiments. Domestic traders determine the share price of the country fund whereas foreign traders determine the prices of the common stocks owed by the country fund. Foreign investor fortunes tie directly to the fortunes of the foreign corporation; domestic investor fortunes tie more directly to market climate and country fund price changes. Analysis of movements in country fund share prices and net asset values enables the disentanglement of price factors attributable to investor sentiment.

We find high positive covariation among premiums for country funds from disparate parts of the globe representing different developmental economies and different fund ownership structures. A "foreign-fund investor sentiment" is systematic to all country funds. With domestic indexes, however, the correlation depends on the developmental state of the foreign economy. The correlation between market indexes and relative premiums is positive for funds investing in developed-economies (which largely concentrate in the hands of individual investors) and negative for funds investing in developing-economies (which primarily are held by institutions).

The investor sentiment hypothesis allows a consistent interpretation of these findings. Returns on domestic indexes rise when investor optimism is climbing and, with an optimistic market backdrop, country fund returns rise irrespective of the ownership structure or foreign economy. Movements in country fund premiums, however, depend on the state of the foreign economy; the dependence of the premiums signifies that net asset value movements are conditioned on the state of the foreign economy. The differential movements between country fund share prices and foreign country net asset values is a direct result of differences in information assimilation. Foreign investors set net asset values in foreign stock markets with superior information about expected profits for foreign corporations. Domestic traders, on the other hand, set country fund share

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prices with an acute awareness of market climate and potential price changes resulting from shifts in investor sentiments.⁹

⁹ Keynes (1936, p. 155) presents a novel description of this phenomenon. "Thus the professional investor is forced to concern himself with the anticipation of impending changes, in the news or in the atmosphere, of the kind by which experience shows that the mass psychology of the market is most influenced. ... The actual, private object of the most skilled investment today is 'to beat the gun', as the Americans so well express it, to outwit the crowd, and to pass the bad, or depreciating, half-crown to the other fellow."

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Fund Name	Exchange	Initial	Number of	Institutional
	Traded	Observation ¹	Observations	Ownership(%)
Argentina	NYSE	October 28, 1991	72	14
Austria	NYSE	October 9, 1989	181	6
Brazil	NYSE	April 18, 1988	245	28
Brazilian Equity	NYSE	April 13,1992	45	25
C.F. Canada	AMEX	April 14, 1986	346	
Chile	NYSE	November 6, 1989	173	47
China	NYSE	August 10, 1992	33	16
Emerging Germany	NYSE	April 23, 1990		8
Emerging Mexico	NYSE	October 15, 1990	126	7
First Australian	AMEX	January 6, 1986		6
First Philippine	NYSE	December 4, 1989	170	20
France ²	NYSE	June 23, 1986	180	
France Growth	NYSE	July 30, 1990	139	5
Future Germany	NYSE	March 12, 1990	160	10
Germany	NYSE	July 28, 1986	345	2
Greater China	NYSE	August 3, 1992	35	3
Growth F. of Spain	NYSE	March 12, 1990	159	7
India Growth	NYSE	August 29, 1988	227	41
Indonesia	NYSE	March 19, 1990	159	93
Irish Investment	NYSE	April 16, 1990	156	21
Italy	NYSE	March 10, 1986	359	23
Japan ³	NYSE	January 5, 1981	331	
Japan OTC	NYSE	April 2, 1990	149	1
Jardine F. China	NYSE	August 10, 1992	34	1
Korea	NYSE	September 17, 1984	430	25
Korean Investment	NYSE	March 23, 1992	50	1
Malaysia	NYSE	June 1, 1987	305	11
Mexico Equity	NYSE	September 10, 1990	134	12
Mexico	NYSE	June 15, 1981	543	15
New Germany	NYSE	February 12, 1990	164	9
Portugal	NYSE	November 27, 1989	170	22
ROC Taiwan	NYSE	May 22, 1989		12
Singapore	NYSE	August 6, 1990	135	13
Spain	NYSE	July 18, 1988	243	5
Swiss Helvetia	NYSE	August 31, 1987	287	12
Taiwan	AMEX-NYSE	February 16, 1987	291	28
Thai Capital	NYSE	June 11, 1990	140	15
Thai	NYSE	February 29, 1988	265	6
Turkish Investment	NYSE	December 18, 1989	170	22
U.K.	NYSE	August 24, 1987		2

TABLE I **Closed-End Country Funds** Sample observation dates and institutional ownership percentages

Final observation for all funds, except France and Japan, is April 12, 1993.
This fund has open-ended December 1989.

3) This fund has open-ended August 1987.

TABLE II

Mean Discount/Premium Levels of Closed-End Country Funds

Premiums (discounts) exist when market prices of closed-end funds are higher (lower) than their net asset values. Positive (negative) percentages indicate premiums (discounts). A two-sided t-test, assuming unequal variances, is performed to see whether the mean premium/discount level is statistically different than the previous year's. P-values of these tests are provided in the second row, with smaller fonts, for each fund.

NAME 1986 1987 1988 1989 1990 1991 1992 1993* First -6.14% -19.80% -17.13% -19.21% -11.28% -10.00% -12.33% -4.04% Australia 0.00 0.00 0.05 0.00 0.40 0.00 0.00 Central F. -14.14% -20.7% -11.23% -6.75% -0.43% -7.74% -7.89% -6.28% Canada 0.00	FUND								
Australia 0.00 0.00 0.05 0.00 0.40 0.00 0.00 Central F. -14.14% -2.07% -11.23% -6.75% -0.43% -7.74% -7.88% -6.28% Canada 0.00 0.00 0.00 0.00 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.00	NAME	1986	1987	1988	1989	1990	1991	1992	1993*
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0.99 0.06 0.00 0.01 Austria -4.01% -13.39% -9.27% -0.74% 0.02 0.00 0.00 0.00 Chile -0.69% -14.76% -8.28% 3.79% Emerging Germany -15.56% -12.72% -13.00% -6.48% 0.01 0.71 0.00 0.00 Future Germany -13.53% -12.16% -12.40% -8.42%									
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0.02 0.00 0.00 Chile -0.69% -14.76% -8.28% 3.79% Emerging Germany -15.56% -12.72% -13.00% -6.48% Future Germany -13.53% -12.16% -12.40% -8.42%						0.99		0.00	0.01
Chile -0.69% -14.76% -8.28% 3.79% Emerging Germany -15.56% -12.72% -13.00% -6.48% 0.01 0.71 0.00 Future Germany -13.53% -12.16% -12.40% -8.42%	Austria					-4.01%	-13.39%	-9.27%	-0.74%
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Emerging Germany -15.56% -12.72% -13.00% -6.48% 0.01 0.71 0.00 Future Germany -13.53% -12.16% -12.40% -8.42%	Chile					-0.69%	-14.76%	-8.28%	3.79%
0.01 0.71 0.00 Future Germany -13.53% -12.16% -12.40% -8.42%									
Future Germany -13.53% -12.16% -12.40% -8.42%	Emerging C	Germany				-15.56%	-12.72%	-13.00%	-6.48%
								0.71	0.00
0.20 0.76 0.00	Future Gern	nany				-13.53%			
							0.20	0.76	0.00

TABLE II (continued)

FUND								
NAME	1986	1987	1988	1989	1990	1991	1992	1993*
France	-23.38%	-20.00%	-13.31%	-8.74%				
		0.03	0.00	0.00				
Japan	-19.14%	-11.98%						
		0.00						
Growth Fun	d				-17.33%	-12.69%	-14.30%	-12.43%
of Spain						0.00	0.01	0.01
Indonesia					-1.40%	4.50%	12.32%	13.68%
						0.00	0.00	0.37
Irish Investn	nent				-19.89%	-19.43%	-16.74%	-11.86%
						0.74	0.00	0.00
Japan OTC					1.19%	-0.13%	16.84%	14.26%
						0.72	0.00	0.20
New Germa	ny				-5.26%	-13.53%	-12.43%	-7.04%
						0.00	0.19	0.00
First Philipp	ine				-12.57%	-21.61%	-20.36%	-21.19%
						0.00	0.11	0.34
Portugal					-3.43%	-9.58%	-5.86%	-8.69%
						0.02	0.01	0.07
Thai Capital					-10.19%	-7.66%	-11.06%	-4.63%
						0.19	0.00	0.00
Turkish Inve	estment				-21.62%	5.34%	15.03%	16.88%
						0.00	0.00	0.45
Argentina						30.31%	12.49%	10.20%
							0.00	0.35
Emerging M	exico					-12.52%	-6.59%	-0.85%
							0.00	0.00
France Grow	wth					-17.24%	-15.94%	-7.89%
							0.03	0.00
Mexico Equi	ity					-14.43%	-8.04%	-2.82%
							0.00	0.00
Singapore						-14.61	-4.40%	-2.07%
							0.00	0.02

* Data ends April 12, 1993.

TABLE III

Correlations of Closed-End Country Fund Discounts/Premiums

The lower diagonal matrix provides the correlations between the discount/premium levels of corresponding funds.and the upper diagonal matrix presents the coefficient significance levels.

	ARGENTINA	AUSTRIA	BRAZIL	C.F.CANADA	CHILE	E.GERMANY	E.MEXICO	F. AUSTRALIAN	F. PHILIPPINE	FRANCE G.	F. GERMANY	GERMANY	G. SPAIN
ARGENTINA	1	0.21	0.30	0.00	0.00	0.02	0.56	0.01	0.00	0.00	0.06	0.37	0.42
AUSTRIA	-0.15	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BRAZIL	0.13	-0.54	1	0.46	0.00	0.33	0.00	0.00	0.00	0.27	0.42	0.06	0.06
C.F.CANADA	-0.47		-0.05	1	0.00	0.74	0.18	0.01	0.00	0.32	0.17	0.00	0.93
CHILE	-0.52	0.61	-0.48	0.63	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
E.GERMANY	-0.28	0.52	0.08	0.03	0.37	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
E.MEXICO	-0.07	0.61	-0.43	-0.12	0.58	0.38	1	0.00	0.13	0.00	0.00	0.17	0.01
F. AUSTRALIAN	-0.33	0.53	0.41	0.15	0.45	0.44	0.30	1	0.00	0.00	0.00	0.00	0.00
F. PHILIPPINE	-0.50			0.59	0.66	0.40	0.14	0.39	1	0.00	0.00	0.00	0.00
FRANCE G.	-0.41	0.46	-0.10	0.09	0.57	0.56	0.48	0.52	0.38	1	0.00	0.00	0.00
F. GERMANY	-0.23	0.52	-0.07	0.11	0.30	0.79	0.35	0.42	0.52	0.62	1	0.00	0.00
GERMANY	0.11	0.81	0.12	0.41	0.54	0.56	0.12	0.66	0.77	0.37	0.66	1	0.00
G. SPAIN	-0.10	0.53	0.15	0.01	0.30	0.57	0.23	0.46	0.62	0.33	0.64	0.40	1
INDIA G.	-0.31	0.63	-0.10	0.70	0.83	0.33	0.43	0.52	0.72	0.57	0.35	0.63	0.31
INDONESIA	0.24	0.61	0.02	-0.23	0.31	0.30	0.45	0.30	0.29	0.27	0.23	0.08	0.41
IRISH INV.	-0.56	0.45	0.05	0.12	0.58	0.52	0.35	0.44	0.43	0.58	0.41	0.20	0.44
ITALY	-0.45	0.75	0.01	0.46	0.69	0.54	0.45	0.63	0.70	0.68	0.55	0.68	0.49
JAPAN OTC	-0.61	0.57	-0.05	0.13	0.55	0.38	0.40	0.28	0.60	0.38	0.30	0.03	0.43
KOREA	0.09	0.55	-0.80	0.21	0.48	0.20	0.05	-0.26	0.68	0.21	0.29	-0.10	0.21
MALAYSIA	-0.17	0.56	-0.04	0.65	0.71	0.29	0.24	0.40	0.79	0.36	0.26	0.68	0.20
MEXICO	-0.26	0.35	0.32	0.24	0.57	0.18	0.30	0.33	0.40	0.30	0.27	0.52	0.16
MEXICO E.	-0.34	0.62	-0.30	-0.04	0.63	0.31	0.71	0.25	0.23	0.42	0.25	0.00	0.23
N. GERMANY	-0.39	0.66	-0.49	0.51	0.59	0.64	0.29	0.51	0.84	0.61	0.73	0.86	0.48
PORTUGAL	0.15	0.74	-0.43	0.33	0.60	0.24	0.24	0.37	0.77	0.16	0.24	0.63	0.52
ROC TAIWAN	0.31	-0.14	-0.09	-0.43	-0.27	0.15	0.49	-0.20	-0.25	0.18	0.04	-0.33	0.06
SINGAPORE	-0.58	0.58	-0.19	-0.02	0.67	0.34	0.57	0.29	0.44	0.43	0.25	-0.02	0.31
SPAIN	0.60	0.70	-0.26	0.53	0.53	0.24	-0.25	0.36	0.88	-0.03	0.39	0.70	0.53
SWISS	-0.17	0.56	0.38	0.45	0.45	0.32	0.20	0.62	0.64	0.29	0.37	0.70	0.51
TAIWAN	0.51	0.20	0.06	0.24	0.04	-0.23	-0.24	-0.11	0.25	-0.18	-0.20	-0.04	-0.19
THAI	0.54	0.67	0.54	0.14	0.44	-0.11	-0.54	0.06	0.78	-0.32	0.13	0.31	0.22
THAI CAP	0.37	0.40	0.04	0.11	0.36	0.34	0.14	0.33	0.41	0.29	0.30	0.46	0.45
TURKISH	-0.30	0.02		-0.53		0.33	0.44				0.22		0.44
U.K	-0.48	0.30	0.28	0.37	0.26	0.35	0.55	0.45	0.20	0.35	0.33	0.44	0.23
S&P 500 Financial	-0.44		0.19	0.15	0.25	0.48	0.71	0.31	0.03	0.58	0.36	0.23	0.43
S&P 500 Comp.	-0.44		0.57	0.23	-0.02	0.45	0.69		-0.20	0.51	0.32	0.34	0.43
Dow Jones Comp.	-0.46		0.45	0.29	0.14	0.46	0.68		-0.08	0.50	0.33	0.35	0.47
NYSE Composite	-0.43		0.55	0.23	-0.01	0.45	0.69		-0.19	0.50	0.32	0.33	0.43
NYSE Financial	-0.45		0.21	0.14	0.21	0.48	0.71	0.30	0.00	0.57	0.35	0.21	0.42
OTC Composite	-0.27	0.03	0.41	0.11	0.06	0.46	0.75			0.50	0.32	0.24	0.41
EWI	0.13			0.55	0.75	0.62	0.59		0.91	0.62	0.63		0.68

TABLE III (continued)

	IJ	IESIA	NV.		I OTC	4	'SIA	Q	ю Е	GERMANY	JGAL	TAIWAN	PORE
	INDIA	INDONESIA	IRISH INV	ITALY	JAPAN	KOREA	MALAYSIA	MEXICO	MEX	ż	PORTUGAL	РО С	SINGAPORE
ARGENTINA	0.01	0.05	0.00	0.00	0.00	0.45	0.17	0.05	0.00	0.00	0.21	0.01	0.00
AUSTRIA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00
BRAZIL	0.14	0.84	0.51	0.90	0.58	0.00	0.53	0.00	0.00	0.00	0.00	0.21	0.03
C.F.CANADA	0.00	0.00	0.13	0.00	0.14	0.00	0.00	0.00	0.67	0.00	0.00	0.00	0.86
CHILE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
E.GERMANY	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.03	0.00	0.00	0.00	0.08	0.00
E.MEXICO	0.00	0.00	0.00	0.00	0.00	0.57	0.01	0.00	0.00	0.00	0.01	0.00	0.00
F. AUSTRALIAN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
F. PHILIPPINE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
FRANCE G.	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.07	0.04	0.00
F. GERMANY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.65	0.00
GERMANY	0.00	0.32	0.01	0.00	0.73	0.07	0.00	0.00	0.98	0.00	0.00	0.00	0.79
G. SPAIN	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.05	0.01	0.00	0.00	0.46	0.00
INDIA G.	1	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
INDONESIA	0.20	1	0.00	0.00	0.00	0.01	0.48	0.51	0.00	0.00	0.00	0.00	0.00
IRISH INV.	0.42	0.33	1	0.00	0.00	0.49	0.00	0.03	0.00	0.00	0.00	0.96	0.00
ITALY	0.70	0.38	0.61	1	0.00	0.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00
JAPAN OTC	0.41	0.49	0.50	0.53	1	0.03	0.01	0.08	0.00	0.00	0.00	0.81	0.00
KOREA	0.30	-0.22	0.06	0.00	-0.18	1	0.00	0.00	0.13	0.00	0.00	0.72	0.01
MALAYSIA	0.78	0.06	0.24	0.65	0.23	0.30	1	0.00	0.05	0.00	0.00	0.00	0.20
MEXICO	0.60	0.05	0.18	0.36	0.15		0.25	1	0.00	0.00	0.00	0.00	0.03
MEXICO E.	0.45	0.41	0.50	0.44	0.43		0.17	0.33	1	0.00	0.00	0.00	0.00
N. GERMANY	0.57	0.24	0.51	0.67	0.50	0.41	0.68	0.49	0.25	1	0.00	0.00	0.00
PORTUGAL	0.65	0.49	0.26	0.58	0.37	0.49	0.65	0.29	0.33	0.42	1	0.89	0.00
ROC TAIWAN	0.28	0.29	0.00	-0.28	0.02	0.03	-0.36		0.37	-0.26	0.01	1	0.00
SINGAPORE	0.54	0.52	0.50	0.53	0.70	0.22	0.11	0.20	0.66	0.37	0.54	0.50	1
SPAIN	0.67	-0.01	0.06	0.61	0.00	0.41	0.71	0.35	-0.42	0.66	0.70	-0.39	-0.36
SWISS	0.58	0.33	0.33	0.67	0.39	0.21	0.61	0.51	0.31	0.43	0.64	-0.21	0.40
TAIWAN	0.11	-0.23		-0.07	-0.52	0.50		-0.32			0.36		-0.24
THAI	0.37	-0.01	-0.23	0.17	-0.20	0.66	0.35	-0.02	-0.58	0.65	0.64	-0.29	-0.56
THAI CAP	0.47	0.31	0.19	0.32	0.17	0.37	0.39	0.22	-0.03	0.35	0.45	0.29	0.20
TURKISH	-0.17	0.53	0.29	0.04	0.29	-0.29	-0.37	-0.19	0.46	-0.20	0.09	0.43	0.54
U.K	0.34	0.28	0.38	0.55	0.46	-0.40	0.38	0.41	0.49	0.22	0.19	0.01	0.43
S&P 500 Financial	0.30	0.61	0.54	0.48	0.54	-0.25	0.23	0.27	0.65	0.04	0.15	0.34	0.73
S&P 500 Comp.	0.20	0.61	0.47	0.36	0.49	-0.57	0.23	0.61	0.60	-0.12	-0.01	0.32	0.73
Dow Jones Comp.	0.31	0.67	0.51	0.38	0.55	-0.49	0.28	0.60	0.63	-0.03	0.14	0.32	0.75
NYSE Composite	0.20	0.61	0.47	0.36	0.49	-0.55	0.22	0.60	0.61	-0.12	0.01	0.34	0.73
NYSE Financial	0.26	0.61	0.53	0.46	0.53	-0.26	0.21	0.22	0.65	0.02	0.13	0.35	0.73
OTC Composite	0.15	0.65	0.45	0.39		-0.45				-0.06	0.06	0.41	0.71
EWI	0.81	0.54	0.57	0.57	0.58	0.53			0.50	0.84	0.83	-0.19	0.64

TABLE III (continued)

	SPAIN	SWISS	TAIWAN	ТНАІ	THAI CAP	TURKISH	U.K	S&P 500 Financial	S&P 500 Composite	Dow Jones Composite		NYSE Financial	OTC O	EWI
ARGENTINA	0.00	0.16	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.28
AUSTRIA	0.00	0.00	0.01	0.00	0.00	0.81	0.00	0.01	0.34	0.41	0.51	0.02	0.68	0.00
BRAZIL	0.00	0.00	0.39	0.00	0.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C.F.CANADA	0.00	0.00	0.00		0.18	0.00	0.00					0.01	0.04	0.00
CHILE	0.00	0.00	0.61	0.00		0.06	0.00	0.00	0.82	0.07	0.91	0.00	0.45	0.00
E.GERMANY		0.00	0.01	0.18		0.00						0.00		0.00
E.MEXICO	0.01	0.03	0.01	0.00		0.00			0.00		1	0.00	0.00	0.00
F. AUSTRALIAN	0.00	0.00	0.06	0.37	0.00		0.00				0.00	0.00	0.00	0.00
F. PHILIPPINE	0.00	0.00	0.00	0.00		0.05	0.01	0.72		0.33		0.96	0.06	0.00
FRANCE G.	0.76		0.04	0.00		0.00						0.00	0.00	0.00
F. GERMANY	0.00	0.00	0.02	0.09		0.01	0.00					0.00	0.00	0.00
GERMANY	0.00	0.00	0.53	0.00		0.01			0.00				0.00	0.00
G. SPAIN	0.00	0.00	0.02	0.01	0.00				0.00					
INDIA G.	0.00		0.12	0.00					0.00					
INDONESIA	0.86	0.00	0.01	0.87	0.00				0.00					
IRISH INV.	0.45	0.00	0.00	0.00					0.00					0.00
ITALY	0.00	0.00	0.23	0.01	0.00	0.64	0.00					0.00	0.00	0.00
JAPAN OTC			0.00	0.02		0.00							0.00	0.00
KOREA	0.00	0.00	0.00	0.00		0.00	0.00				0.00	0.00	0.00	0.00
MALAYSIA	0.00	0.00	0.00	0.00		0.00	0.00				0.00	0.00	0.03	0.00
MEXICO	0.00	0.00	0.00	0.73		0.02	0.00				0.00		0.00	0.00
MEXICO E.	0.00	0.00	0.03	0.00		0.00			0.00				0.00	0.00
N. GERMANY	0.00	0.00	0.46	0.00		0.01	0.01	0.61	0.12	0.69		0.80	0.48	0.00
PORTUGAL	0.00	0.00	0.00	0.00		0.24	0.01	0.05			0.92	0.09	0.41	0.00
ROC TAIWAN	0.00	0.00	0.23	0.00		0.00					0.00	0.00	0.00	0.01
SINGAPORE	0.00	0.00	0.01	0.00		0.00					0.00		0.00	0.00
SPAIN	1	0.00	0.14		0.00				0.88				0.15	
SWISS	0.52					0.01								
TAIWAN		0.06	1			0.00								
THAI			0.49		0.00				0.00					
THAICAP			0.20		1				0.00		1			1
TURKISH				-0.33		1			0.00					
U.K				-0.32		0.24	1		0.00		1			
S&P 500 Financial				-0.45			0.58						0.00	
S&P 500 Comp.				-0.59				0.74					0.00	
Dow Jones Comp.				-0.53					0.99	1			0.00	
NYSE Composite				-0.59					1.00		1		0.00	1
NYSE Financial				-0.45					0.71			1		0.00
OTC Composite				-0.54					0.92				1	0.00
EWI						-0.06					0.05			1
	0.00	5.5 r	0.00	0.10	0.00	0.00	5.21	0.17	0.0 r	0.10	0.00	0.10	0.00	· ·

TABLE IV Correlations Between Closed-End Country Fund and Domestic Market Indices with Emphasis on the Institutional Ownership Percentages

	S&P 500	S&P 500	Dow Jones	NYSE	NYSE	OTC	EWI
	Financial	Composite	Composite	Composite	Financial	Composite	
Group 1	-0.10	-0.30	-0.29	-0.28	-0.04	-0.17	0.64
	(0.07)	(0.00)	(0.00)	(0.00)	(0.46)	(0.00)	(0.00)
Group 2	-0.09	-0.37	-0.34	-0.35	-0.04	-0.24	0.71
	(0.08)	(0.00)	(0.00)	(0.00)	(0.46)	(0.00)	(0.00)
Group 3	-0.03	-0.20	-0.17	-0.19	0.02	-0.12	0.81
_	(0.61)	(0.00)	(0.00)	(0.00)	(0.73)	(0.02)	(0.00)
Group 4	0.21	0.09	0.15	0.09	0.19	0.09	0.74
_	(0.00)	(0.08)	(0.00)	(0.07)	(0.00)	(0.09)	(0.00)
Group 5	0.17	0.12	0.16	0.11	0.14	0.09	0.63
-	(0.00)	(0.02)	(0.00)	(0.03)	(0.00)	(0.08)	(0.00)
Group 6	0.31	0.28	0.33	0.27	0.29	0.20	0.61
-	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)

(Significance levels of these correlations are provided in parentheses.)

Group 1 : An equally weighted index of the discounts/premiums of funds with the highest five institutional ownership percentages, which includes Indonesia, Chile, India Growth, Taiwan, and Brazil Funds. (percentages differ between 28% - 93%)

Group 2: An equally weighted index of the discounts/premiums of funds with the highest 10 institutional ownership percentages, which includes Korea, Italy, Turkish Investment, Portugal, Irish Investment, and all funds in Group 1. (percentages differ between 21% - 93%)

Group 3: An equally weighted index of the discounts/premiums of funds with the highest 15 institutional ownership percentages, which includes First Philippine, Thai Capital, Mexico, Argentina, Singapore, and all funds in Group 2. (percentages differ between 13%-93%)

Group 4: An equally weighted index of the discounts/premiums of funds with the lowest 16 institutional ownership percentages, which includes Emerging Germany, New Germany, Future Germany, Malaysia, Mexico Equity, ROC Taiwan, and all funds in Group 5. The reason for including 16 funds rather than 15 is that the Mexico Equity and ROC Taiwan Funds have equal institutional ownership percentages of 12%. (percentages differ between 1% - 12%)

Group 5: An equally weighted index of the discounts/premiums of funds with the lowest 10 institutional ownership percentages, which includes Thai, First Australian, Austria, Emerging Mexico, Growth Fund of Spain, and all funds in Group 6. (percentages differ between 1% - 7%)

Group 6: An equally weighted index of the discounts/premiums of funds with the lowest five institutional ownership percentages, which includes Japan OTC, United Kingdom, Germany, Spain, and France Growth Funds. (percentages differ between 1% - 5%)

EWI: An equally weighted index of all country fund discount/premium levels.

TABLE V

Correlations Between Closed-End Country Fund and Domestic Market Index Returns with Emphasis on the Institutional Ownership Percentages

	S&P 500	S&P 500	Dow Jones	NYSE	NYSE	OTC	CEWI
	Financial	Composite	Composite	Composite	Financial	Composite	
Group 1	0.25	0.28	0.32	0.30	0.30	0.39	0.40
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Group 2	0.33	0.38	0.40	0.39	0.37	0.43	0.48
_	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Group 3	0.35	0.38	0.42	0.40	0.39	0.46	0.47
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Group 4	0.39	0.46	0.47	0.47	0.44	0.50	0.56
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Group 5	0.37	0.43	0.44	0.44	0.42	0.47	0.54
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Group 6	0.38	0.43	0.41	0.43	0.41	0.42	0.52
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)

(Significance levels of these correlations are provided in parentheses.)

Group 1 : Return series of an equally weighted portfolio of funds with the highest five institutional ownership percentages, which includes Indonesia, Chile, India Growth, Taiwan, and Brazil Funds. (percentages differ between 28% - 93%)

Group 2: Return series of an equally weighted portfolio of funds with the highest 10 institutional ownership percentages, which includes Korea, Italy, Turkish Investment, Portugal, Irish Investment, and all funds in Group 1. (percentages differ between 21% - 93%)

- Group 3: Return series of an equally weighted portfolio of funds with the highest 15 institutional ownership percentages, which includes First Philippine, Thai Capital, Mexico, Argentina, Singapore, and all funds in Group 2. (percentages differ between 13%-93%)
- Group 4: Return series of an equally weighted portfolio of funds with the lowest 16 institutional ownership percentages, which includes Emerging Germany, New Germany, Future Germany, Malaysia, Mexico Equity, ROC Taiwan, and all funds in Group 5. The reason for including 16 funds rather than 15 is that the Mexico Equity and ROC Taiwan Funds have equal institutional ownership percentage of 12%. (percentages differ between 1% - 12%)
- Group 5: Return series of an equally weighted portfolio of funds with the lowest 10 institutional ownership percentages, which includes Thai, First Australian, Austria, Emerging Mexico, Growth Fund of Spain, and all funds in Group 6. (percentages differ between 1% - 7%)
- Group 6: Return series of an equally weighted portfolio of funds with the lowest five institutional ownership percentages, which includes Japan OTC, United Kingdom, Germany, Spain, and France Growth Funds. (percentages differ between 1% 5%)
- CEWI : An equally weighted index of changes in discount/premium levels of closed-end country funds.

TABLE VI

Correlations Between Closed-End Country Fund and Domestic Market Indices with Emphasis on the Level of Economic Development of the Country of Origins

	Developed	Developing	S&P 500	S&P 500	Dow	NYSE	NYSE	OTC	Equally
					Jones				
	Country	Country	Financial	Composite	Composite	Composite	Financial	Composite	Weighted
Developed Country	1	0.15	0.40	0.32	0.37	0.32	0.38	0.31	0.69
		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Developing Country	0.15	1	-0.09	-0.28	-0.24	-0.26	-0.04	-0.20	0.77
	(0.00)		(0.09)	(0.00)	(0.00)	(0.00)	(0.46)	(0.00)	(0.00)
Equally Weighted	0.69	0.77	0.17	0.04	0.10	0.05	0.18	0.08	1
	(0.00)	(0.00)	(0.00)	(0.39)	(0.05)	(0.30)	(0.00)	(0.14)	

(Significance levels of these correlations are provided in parentheses)

Developed Country: An equally weighted index of discount/premium levels of closed-end country funds from developed countries. This includes: First Australian, Austria, Growth Fund of Spain, Emerging Germany, Future Germany, New Germany, Spain, Japan OTC, United Kingdom, Germany, France Growth, Irish Investment, Italy, Portugal, and Turkish Investment Funds.

Developing Country: An equally weighted index of discount/premium levels of closed-end country funds from developing countries. This includes: Argentina, Brazil, Chile, Emerging Mexico, First Philippine, Indonesia, India Growth, Korea, Malaysia, Mexico, Mexico Equity, ROC Taiwan, Singapore, Taiwan, Thai, and Thai Capital Funds.

Equally Weighted: An equally weighted index of discount/premium levels of all country funds listed above.