

CHAPTER FOUR

Conclusion

In this dissertation we study public information events on the valuation of closed-end funds, which are closed-end domestic funds in Taiwan as well as closed-end country funds listed on the New York Stock Exchange. Two kinds of public information are employed as the information sets. On the valuation of closed-end domestic funds in Taiwan, political information events in Taiwan are employed as the information set, and for closed-end country funds the related country-specific headlines on the front page of *The New York Times* are employed.

Our first subject is to test the effect of the information impacts on fundamental value and market value under identical markets. The second subject is to resolve the effect of the information impacts on fundamental value and market value under two different markets, including a comparison of before and during the Asian financial crisis and after the Asian financial crisis. These two subjects are based on the theory of market efficiency and the theory of investors' sentiment to resolve the information effects.

In the first topic we try to resolve the puzzle between the theory of market efficiency and the theory of investors' sentiment using the merit of closed-end fund data in an emerging market, Taiwan's stock market. We preliminarily develop a theoretical model to show that given the supplies of underlying assets and fund shares being fixed and equal, the elasticity of the underlying assets to the salient information shock is different to the elasticity of fund share prices to the same information shock. The theoretical model do not support to the theory of market efficiency. Furthermore, we

try to test two major hypotheses. The first hypothesis is that the return of FSP does not be affected by the return of NAV. However, the second hypothesis assumes that the directions affected by an information shock have the same sign, and the return of FSP and the return of NAV have symmetrical information effects (same magnitude) under the same information shock.

As to hypothesis I, we observe that the results of Granger causality reveal them to be not strong, but show some evidence to support the return of NAV affecting the return of FSP. The results of Granger causality reveal that in sub-period one there are five funds with uni-direction from the return of NAV Granger causing the return of FSP in 16 sample funds. No funds show the return of FSP Granger causing the return of NAV, however, one fund is shown to have bi-directional Granger causality in sub-period one. In sub-period two, we observe three funds showing the return of NAV Granger causing the return of FSP, one fund showing the return of fund prices Granger causing the return of NAV, and two funds showing bi-directional Granger causality. According to the regression analysis, the results support that the one lagged return of NAV has a significant effect on the return of FSP for all funds either in sub-period one or in sub-period two. In summation for hypothesis I, we observe that the return of FSP and the return of NAV go along in the same direction and the lagged one return of NAV significantly affects the return of FSP.

For hypothesis II, the information shocks to the return of FSP and the return of NAV mostly have the same sign effect with some exceptions. The exceptions include four funds having the opposite effect for Event two, either the information shock negatively affects the return of FSP and positively affects the return of NAV, or information shock negatively affects the return of NAV and positively affects the return of FSP. Furthermore, we find that the information coefficients of the return of NAV

and the return of FSP have a significantly deviated information effect under Event one, which is consistent with the theory of investors' sentiment (De Long et al., 1990 and Lee et al., 1991). However, the results from the other three events show insignificantly deviated information effects, which are consistent with the theory of market efficiency. One possible explanation to the insignificant deviated information effect between the return of NAV and the return of FSP is that the information shocks for Event two through Event four affect Taiwan's stock market and then the market also affects the return of FSP and the return of NAV symmetrically. Hence, the changes of the return of NAV and the return of FSP are followed by changes in the market.

In summation of the first subject of this dissertation, we employ the merits of dual pricing characteristics of closed-end funds and use the data from Taiwan's market, an emerging market, in order to try and resolve the puzzle of the theory of market efficiency and the theory of investors' sentiment. We show results that one event supports the theory of investors' sentiment and three events support the theory of market efficiency. The results also show that the return on FSP and the return on NAV move in the same direction and the impact of information shocks to the return of FSP and return of NAV have mostly the same sign.

The second topic of this dissertation is designed to resolve the effect of the information impact on fundamental value and market value under two different markets, which means the fund shares are listed on the New York Stock Exchange and the fund portfolios are invested in Asian nations. To compare the information effects between the panic period and non-panic period, we divide the sample period into before and during the Asian financial crisis and after the Asian financial crisis.

Using a sample of six Asian country funds listed on the New York Stock Exchange, we examine whether salient country-specific news affects investors' reaction around the

Asian financial crisis. The sample period is from January 1995 to December 2002, which covered the period before, during, and after the Asian financial crisis period.

Following Klibanoff et al. (1998), we consider news reports for the six countries that appeared on the front page of *The New York Times* as salient news. We find that when the return of NAV rises by one in a given week, the return of FSP responds by only roughly 0.7 (in the model with week dummies, it is about 0.5). In regular weeks, the return of FSP reacts less to changes in the return of the net asset value, which is consistent with the results of Klibanoff et al. (1998). In weeks with salient news appearing on the front page of *The New York Times*, our results show that the return of fund share prices reacts more. These results are consistent with the hypothesis that news events lead some investors to react more quickly. We also find that news effects are more significant before and during the Asian financial crisis period and economic news affects individual investors' reactions more than other categories of news reports in our sample period. These results are consistent with the hypothesis that news events do play a role in the magnitude of investors' reaction to changes in the fundamental values of closed-end country funds.

The results considering news tone indicate that negative tone news has an insignificant impact during the crisis period, but positive tone news is perceived as having relatively significant impact during the crisis period. These results intuitively indicate that during the Asian financial crisis period, no negative news is perceived worse than the financial crisis itself. In the crisis period, a little positive news is enhanced and perceived as news better than the news itself. Hence, the crisis itself is the lower bound for the negative news. This result suggests that during the panic period negative news does have a lower bound, the crisis itself, whereas in the regular period negative news has a significant impact.

As to the reaction of volume to news, the results show that news effect is significant in full sample period. For the reaction of volume to categorized news, economic news is significant in full sample period.

From the above concluding remarks of the two subjects in this dissertation, the results from either domestic funds or country funds all show that news events/information do play a role in individual investors' sentiment. The phenomenon is more conspicuous during the financial crisis.

As an extension of this dissertation, international exchange-traded funds (ETFs) provide another merit to study the information effect, because iShares (a synonym for international ETF's) listed on the American Stock Exchange are valued daily for FSP and NAV. With the daily pricing for FSP and NAV, available data of information news provide another interesting story to test the information impact on the valuation of closed-end funds.

Another interesting extension in the future is the asynchronous trading of iShares. For iShares, the arbitrage mechanism is impeded by no synchronous trading. This is particularly true for iShares managing portfolios in Asian markets. The discount pattern, return, and trading strategies of iShare are quite interesting for researchers to try and resolve in any future study.

REFERENCES

I. 中文部分

1. 許溪南及呂鴻德，民國 89 年，封閉型基金與開放型基金相對績效之研究-新績效評估指標，交大管理學報，第二十卷第一期，頁 71-102。
2. 闕河士，民國 90 年，散戶心理對報酬率、價格波動性和交易活動的影響，輔仁管理評論，第八卷第一期，頁 117-142。

II. In English

1. Abraham, Abraham, Don Elan, and A. J. Marcus, 1993, Does sentiment explain closed-end fund discounts: evidence from bond funds, *The Financial Review* 28, 607-616.
2. Andersen Torben G. and Tim Bollerslev, 1998, Deutsche mark-dollar volatility: Intraday activity patterns, macroeconomic announcements, and longer run dependencies, *The Journal of Finance* 53:1, 219-265.
3. Bennett, J. Andrea, 2002, Closed-end country fund discounts and systematic UK and US market movements: co-integration and error corrected Granger causality tests, *Managerial Finance* 28:1, 73-92.
4. Berry, T. T. and K. M. Howe, 1994, Public information arrival, *The Journal of Finance* 49, 1331-1346.
5. Bodurtha, J., E. Kim and C. Lee, 1995, Closed-end country funds and US market sentiment, *Review of Financial Studies* 8, 879-918.
6. Boudreaux, K. J., 1973, Discounts and premiums on closed-end mutual funds: a study in valuation, *The Journal of Finance* 28, 515-522.
7. Burch, T. R., Douglas R. Emery and Michael E. Fuerst, 2003, What can “Nine-Eleven” tell us about closed-end fund discounts and investor sentiment? *The Financial Review* 38, 515-529.

8. Chan, Y., Andy C. W. Chui and Chuck C. Y. Kwok, 2001, The impact of salient political and economic news on the trading activity, *Pacific-Basin Finance Journal* 9, 195-217.
9. Chan, Y. and K. C. J. Wei, 1996, Political risk and stock price volatility: The case of Hong Kong, *Pacific-Basin Finance Journal* 4, 259-275.
10. Chay, Jong-Bom and C. Trzcinka, 1999, Managerial performance and the cross-sectional pricing of closed-end funds, *Journal of Financial Economics* 52, 379-408.
11. Chen, Li-Wen, Shane A. Johnson, Ji-Chai Lin, and Yu-Jane Liu, 2004, Foreign investors and profit opportunities in open-ending closed-end funds in Taiwan, *Working Paper*, presented in 2004 FMA Annual Meeting at New Orleans, U.S.A.
12. Ciccotello, C. S. and T. Grant, 1996, Information pricing: the evidence from equity mutual funds, *The Financial Review* 31-2, 365-380.
13. 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, 703-738.
14. Dimson, Elroy and Carolina Minio-kozerski, 1999, Closed-end funds: a survey, *Financial Markets, Institutions & Instruments*, Vol. 8, No. 2, 1-41.
15. Ederington, L. H. and J. H. Lee., 1993, How markets process information: News releases and Volatility, *The Journal of Finance* 48, 1161-1191.
16. Enders, Walter, 1995, *Applies Econometric Time Series*, John Wiley & Sons, Inc.
17. Fair R. C., 2000, Events that shook the market, *Journal of Business* 75-4, 713-731.
18. Fama, E., 1970, Efficient capital markets: a review of theory and empirical work, *The Journal of Finance* 25, 383-417.
19. Fleming, M. J. and E. M. Remoolona, 1999, Price formation and liquidity in the US treasury market: the response to public information, *The Journal of Finance* 54, 1901-1915.

20. Frankel, Jeffrey and S. L. Schmukler, 1996, Country fund discounts, asymmetric information, and the Mexican crisis of December 1994: Did local residents turn pessimistic before international investors?, Working paper 5714, **NBER**.
21. Frankel, Jeffrey, and S. L. Schmukler, 2000, Country funds and asymmetric information, ***International Journal of Finance and Economics*** 5-3, 177-195.
22. Gehrig, Thomas, 1993, An information based explanation of the domestic bias in international equity investment, ***Scandinavian Journal of Economics*** 9, 97-109.
23. Gemmill, G., 1992, Political risk and market efficiency: tests based in British stock and options markets in the 1987 election, ***Journal of Banking and Finance*** 16, 211-231.
24. Gemmill, G. and Dylan C. Thomas, 2002, Noise-trading, costly arbitrage, and asset prices: evidence from closed end funds, ***The Journal of Finance*** 57-6, 2571-2594.
25. Granger, C. W. J., 1969, Investigating causal relations by econometric models and cross-spectral models, ***Econometrica*** 37, 424-438.
26. Greene, William H., 2000, ***Econometric Analysis***, Prentice-Hall, Inc (New Jersey).
27. Grundy, B. D., and Youngsoo Kim, 2002, Stock market volatility in a heterogeneous information economy, ***Journal of Financial and Quantitative Analysis*** 37-1, 1-27.
28. Hardouvelis, Gikas, Rafael LaPorta, and Thierry A. Wizman, 1994, What moves the discount on closed-end country funds?, in Jeffrey Frankel, ed.: ***The Internationalization of Equity Markets*** (University of Chicago Press, Chicago, 111).
29. Hsiao, C., 1986, ***Analysis of Panel Data***, Cambridge: ***Cambridge University Press***.
30. Johnson, Timothy C., 2002, Rational momentum effects, ***The Journal of Finance*** 57-2, 585-608.
31. Kaminsky G. L. and S. L. Schmukler, 1999, What triggers market jitters? A chronicle of the Asian crisis, ***Journal of International Money and Finance***, 537-560.

32. Kim, H. Y. and J. Mei, 2001, What makes the stock market jump? An analysis of political risk on stock returns, *Journal of International Money and Finance* 20-7, 1003-1016.
33. Klibanoff, Peter, O. Lamont, and T. A. Wizman, 1998, Investor reaction to salient news in closed-end country funds, *The Journal of Finance* 53, 673-699.
34. Kumar, Raman and G. M. Noronha, 1992, A re-examination of the relationship between closed-end fund discounts and expenses, *Journal of Financial Research* 15, 139-147.
35. Lee, Bong-Soo and Gwangheon Hong, 2002, On the dual characteristics of closed-end country funds, *Journal of International Money and Finance* 21, 589-618.
36. Lee, Charles M. C., Andrei Shleifer, and Richard H. Thaler, 1990, Anomalies: closed-end mutual funds, *Journal of Economic Perspectives* Vol. 4, No. 4, 153-164.
37. Lee, Charles M. C., Andrei Shleifer, and Richard H. Thaler, 1991, Investor sentiment and the closed-end fund puzzle, *The Journal of Finance* 46, 75-109.
38. Lee, Jason and Cheong H Yi, 2001, Trade size and information-motivated trading in the options and stock markets, *Journal of Financial and Quantitative Analysis* 36-4, 485-501.
39. Levy-Yeyati and Angel Ubide, 2000, Crises, Contagion, and the closed-end country fund puzzle, *IMF Staff Papers*, Vol. 47, No. 1, 54-89.
40. Malkiel, Burton G., 1977, The valuation of closed-end investment-company shares, *The Journal of Finance* 32, 847-858.
41. Mitchell, M. L. and J. H. Mulherin, 1994, The impact of public information on the stock market, *The Journal of Finance* 49, 923-950.
42. Pan, M. S., K. C. Chan and David J. Wright, 2001, Divergent expectations and the Asia financial crisis of 1997, *Journal of Financial Research*, Vol. 24, No. 2, 219-238.

43. Pearce, D. K. and Vance V. Roley, 1985, Stock prices and economic news, *The Journal of Business* 58-1, 49-67.
44. Pontiff, Jeffrey, 1997, Excess volatility and closed-end funds, *American Economic Review* 87, 115-169.
45. Tong, Xin-da, 2004, The application of skewness-adjusted t-statistic and VaR adjusted Jensen index to the returns of high-turnover mutual funds in Taiwan, *unpublished thesis*, Shih Chien University.
46. Weiss, Kathleen, 1989, The post-offering price performance of closed-end funds, *Financial Management* Autumn, 57-67.
47. Zweig, Martin E., 1973, An investor expectations stock price predictive model using closed-end fund premiums, *The Journal of Finance* 28, 67-78.

APPENDIX A

We have 21 sample funds, which are domestic closed-end funds listed in Taiwan Stock market, from 1994/01/03 to 2000/04/12. Our data source comes from TEJ (Taiwan Economic Journal) and all sample funds are stock funds. We divide the sample period into two sub-periods, 1994/01/03 through 1997/05/31 and 1998/11/27 through 2000/04/12, by the reason of information arrivals and funds open-ending. The whole sample funds are in Table A.

Table A
List of sample funds

We include twenty one funds in this study, and all funds are stock funds. By fund code, sample funds for subperiod one are F1 through F16, and those for subperiod two are F1, F4, F9, F11, and F17 through F21. We include only F1, F4, F9, and F11 to sub-period two, because except for the four funds, all other funds from F1 through F16 are switched to open-end funds before 1998/11/27. Subperiod one is defined as from 1994/01/03 to 1997/05/31, and subperiod two is from 1998/11/27 to 2000/4/12. Amount unit : NT\$1,000.

Fund code	Fund name	IPO date	Funds size
F1	ABN Growth Fund	1988/5/12	5,000,000
F2	NITC Fu Yuan Fund	1988/6/28	5,000,000
F3	HSBC Taiwan Growth	1988/7/12	3,482,970
F4	IIT Citizen Fund	1988/8/6	5,000,000
F5	HSBC Taiwan Success	1990/10/6	5,000,000
F6	ABN Fortune Fund	1990/12/20	3,914,600
F7	Invesco Growth Fund	1993/3/26	5,000,000
F8	FGIT Duo Yuan Fund	1993/3/26	5,000,000
F9	YC Fund	1993/3/26	5,000,000
F10	PSIT Tung Hsin Fund	1993/3/26	5,000,000
F11	Fubon Fund	1993/3/26	5,000,000
F12	PD Pioneer Fund	1993/4/27	5,000,000
F13	JF Fund	1993/5/10	4,162,180
F14	Fortune Diamond	1993/6/8	5,000,000
F15	Pru. Financia Fund	1993/6/19	4,133,900
F16	Taiwan Fu Kuei Fund	1993/6/21	5,000,000
F17	Capital Small & Med.	1996/7/14	4,198,070
F18	Reliance Dahfa Fund	1996/10/24	2,000,000
F19	FGIT China Fund	1997/3/18	2,000,000
F20	Fubon OTC Fund	1997/11/22	8,000,000
F21	Truswell Fund	1998/11/25	4,100,000

APPENDIX B

Table B
Nonparametric Tests for Symmetrical Information Effect on Fund Share Price and NAV

This table reveals the results of nonparametric statistics for null hypothesis of coefficients of information effects between R^{NAV} and R^P being equal. Event one represents PRC military operations (1996/03/08-03/25). Event two represents Presidential election in Taiwan (1996/03/23). Event three represents that Zhu, PRC premier, warns Taiwan voters (2000/03/10-03/17). Event four represents Presidential election in Taiwan (2000/03/18). Sub-period One is from 1994/01/03 to 1997/5/31 and Sub-period Two is from 1998/11/27 to 2000/4/12. ** represents significant at 5% level.

	Sign Test	Test of Wilcoxon Sign-rank		Obs.
	p-value	Critical Value	Min[W(+),W(-)]	
<u>Sub-period One (1994/01/03-1997/5/31)</u>				
Event 1: PRC military operations(1996/03/08-03/25)	0.0040 **	30	14.91 **	32
Event 2: Presidential election in Taiwan(1996/03/23)	0.0804	30	54.32	32
<u>Sub-period Two (1998/11/27-2000/4/12)</u>				
Event 3: Zhu, PRC premier, warns Taiwan voters(2000/03/10-03/17)	0.1800	6	9.00	18
Event 4: Presidential election in Taiwan(2000/03/18)	0.5080	6	16.00	18

APPENDIX C

Table C
Sample News Reports from *The New York Times*

This table shows illustrations of some news events appearing in the front page articles of *The New York Times*, from January 1995 to December 2002. For space saving, we illustrate a small part of salient news from our six fund samples. This table includes four columns: affiliated country fund, news date, words of content in the front page's headline, and the whole text of the headline.

Affiliated Country Fund	News Date	Words of Content	Headline on the Front Page
Indonesia Fund	1998/01/06	1115	Indonesia agrees to I.M.F.'s Tough Medicine
	2002/01/23	1436	A Nation Challenged: Asian Terror; Qaeda Moving Into Indonesia, Officials Fear
Korea Fund	1997/12/04	1557	Crisis In South Korea: The Bailout; Package of Loans Worth \$55Billion is set for Korea
	2002/12/31	1337	Threats and Responses: Nuclear Politics; South Korea Criticizes U.S. Plan for Exerting Pressure on North
Malaysia Fund	1998/04/09	1003	As Boom Fails, Malaysia Sends Migrants Home
	1998/11/17	1155	Gore, In Malaysia, Says its Leaders Suppress Freedom
First Philippine Fund	1997/07/21	954	To Ease Crisis, IMF Makes Philippines Emergency Loan
	2002/01/19	1189	A Nation Challenged: Pacific Terror; Unease Grows in Philippines on US Forces
Taiwan Fund	1996/03/08	1254	Chinese, In a Move to Alarm Taiwan, Fire Test Missiles
	1999/09/21	1319	Taiwan Quake Kills Hundreds; Thousands Trapped or Injured
Thai Fund	1997/10/24	1120	The Asian Crisis: Market Place; Thailand's Currency Flutters, and Wind is Felt in the area
	1999/08/10	1165	In Debris of Economic Crash: Thailand' Faith in Authorit