

CHAPTER 4

THE RESEARCH FINDINGS

4.1 Correlations analysis for Individual securities

The Pearson's product-moment correlation and Spearman's rank correlation coefficients between beta coefficients (computed using 1991-1993 data) and the returns of the 71 component stocks in each of the 5 periods: 07 January 1994 - 03 June 1994, 03 June 1994 - 16 September 1994, 16 September 1994 - 27 January 1995, 27 January 1995 - 02 June 1995 and 02 June 1995 - 17 November 1995, are given in Table 4.1. In the first, third and fifth periods, both the Pearson's and Spearman's correlation coefficients are significantly negative at the 1% significance level. In the second period, the two correlation coefficients are significantly positive at the 5% significance level. These results are consistent with the expectation that in the rising period the correlations would be positive and in the declining period the correlations are negative. However, in the fourth period, beta coefficients do not have significant positive correlations with the returns. Instead the results show an insignificant negative correlation value.

The result in the fourth period is quite puzzling as the market (KLSE CI) rose by 22.05 percent during the period. One possible explanation for this result could be the longer time interval (slightly more than a year) between computation of beta

Table 4.1 Product-Moment Correlation Coefficients and Spearman's Rank Correlation Coefficients of Beta Coefficients (computed based on 1991-1993 data) and Returns of Individual Securities (computed based on 1994- 1995 data)

Period	Product-Moment Correlation Coefficient	Prob* > R $H_0: \rho=0$	Rank Correlation Coefficient	Prob* > R $H_0: \rho=0$
07 Jan 94 - 03 Jun 94	-0.3958	0.0006	-0.4109	0.0004
03 Jun 94 - 16 Sep 94	0.2338	0.0497	0.2995	0.0112
16 Sep 94 - 27 Jan 95	-0.4343	0.0001	-0.4412	0.0001
27 Jan 95 - 02 Jun 95	-0.0651	0.5893	-0.0860	0.4760
02 Jun 95 -17 Nov 95	-0.4140	0.0003	-0.4205	0.0003

Note : * - The significance probability of the correlation. R is the correlation coefficient

and the period of analysis. The predictability of returns from beta deteriorates as the period of analysis is further away from the period of beta computation, as we can see in the second period (approximately six months after the period of beta computation) the result is significant. Beta instability has been always discussed by researchers in this field and one of the major factors that influence the stability of beta is changes in company fundamentals and capital structure. Therefore, the longer the time interval between beta computation and period of analysis, the more likely the changes in company fundamentals to occur, and thus, higher chances of beta to become unstable.

The other possible explanation is the higher tendency of Malaysian investors to speculate and go for short term gain during bullish(rising) period. A study conducted by Lim Chin Fong (1992) found that 72.9 percent of the sample (192 investors) speculate during bullish period as compared to 32.8 percent during bearish(decline) period, and 69.8 percent of the sample go for short term gain during bullish period as compared to 20.3 percent during bearish period. These findings seem to indicate that beta coefficient would be a better predictor during declining period(which is less speculative) than during rising period(which is more speculative). The result of this study also gives similar indication as from Table 4.1 we can see that the correlation coefficients(both Pearson's and Spearman's) are stronger (higher magnitude) and more significant during the declining market as compared to correlations (weak or insignificant) during the bullish period.

In the that same study (by Lim Chin Fong) , it is also found that 76 percent of sample hold stocks for shorter period (daily, weekly or monthly) during bullish period as compared 41 percent during bearish period. This finding indicates that there would be a higher tendency to have shorter holding periods during the bullish period than the bearish period. The difference in the length of holding periods may affect the findings of this current study, which has longer holding

period of between three to six months duration. Thus, the combined effect of differences in holding periods and instability of beta would have caused the insignificant results in the fourth period(27 January 1995 - 02 Jun 1995), which is bullish and approximately one year after the period of beta computation.

4.2 Correlation analysis for Portfolios of securities

Many studies of betas in the United States and United Kingdom obtained findings that the betas of portfolios of securities were better predictors of future returns than those of individual securities (Modigliani and Pogue, 1974; Levy, 1974). Tang (1974) and Dawson(1984) also obtained such findings in Singapore. Kok(1992) also, obtained similar findings in Malaysia. Therefore, let us examine the relationship between the risk and the future return of equal-dollar portfolios of securities. The results of Pearson's correlation coefficients and Spearman's rank correlation coefficients between beta and portfolios of securities returns are given in Table 4.2.

The results are similar to those of individual securities as shown in Table 4.1 In the first, third and fifth periods(declining periods), as expected, the Pearson's correlation coefficients and the Spearman's rank correlation coefficients are significantly negative. The second period (rising period) has inconsistent results, such that portfolios of 2 and 5 securities have significantly positive Pearson's

correlations and as for Spearman's, only portfolio of 2 securities has significantly positive correlation coefficient. The rest of the portfolios of securities have

Table 4.2

Product-Moment Correlation Coefficients and Spearman's Rank Correlation Coefficients of Beta Coefficients(computed based on 1991-1993 data) and Returns of Portfolios of Securities(computed based on 1994- 1995 data)

Period	Product-Moment Correlation Coefficient	Prob > R $H_0 : \rho=0$	Rank Correlation Coefficient	Prob > R $H_0 : \rho=0$
36 Portfolios of 2 Securities				
07 Jan 94 - 03 Jun 94	-0.5457	0.0006	-0.4947	0.0022
03 Jun 94 - 16 Sep 94	0.3324	0.0476	0.3619	0.0301
16 Sep 94 - 27 Jan 95	-0.6212	0.0001	-0.5810	0.0002
27 Jan 95 - 02 Jun 95	-0.0382	0.8247	-0.0821	0.6340
02 Jun 95 -17 Nov 95	-0.4703	0.0038	-0.4623	0.0045
24 Portfolios of 3 Securities				
07 Jan 94 - 03 Jun 94	-0.5916	0.0023	-0.5470	0.0057
03 Jun 94 - 16 Sep 94	0.3355	0.1090	0.3461	0.0976
16 Sep 94 - 27 Jan 95	-0.6844	0.0002	-0.6835	0.0002
27 Jan 95 - 02 Jun 95	-0.0278	0.8973	-0.0722	0.7375
02 Jun 95 -17 Nov 95	-0.5115	0.0106	-0.4496	0.0275

	18 Portfolios of 4 Securities			
07 Jan 94 - 03 Jun 94	-0.6732	0.0022	-0.6223	0.0058
03 Jun 94 - 16 Sep 94	0.4546	0.0580	0.3437	0.1626
16 Sep 94 - 27 Jan 95	-0.7557	0.0003	-0.6326	0.0048
27 Jan 95 - 02 Jun 95	-0.2578	0.3016	-0.2239	0.3717
02 Jun 95 - 17 Nov 95	-0.5617	0.0153	-0.5480	0.0186
	15 Portfolios of 5 Securities			
07 Jan 94 - 03 Jun 94	-0.6662	0.0067	-0.6286	0.0121
03 Jun 94 - 16 Sep 94	0.5390	0.0381	0.4107	0.1283
16 Sep 94 - 27 Jan 95	-0.7457	0.0014	-0.5857	0.0218
27 Jan 95 - 02 Jun 95	-0.0201	0.9433	-0.1000	0.7229
02 Jun 95 - 17 Nov 95	-0.6392	0.0103	-0.6607	0.0073
	12 Portfolios of 6 Securities			
07 Jan 94 - 03 Jun 94	-0.6309	0.0278	-0.6643	0.0185
03 Jun 94 - 16 Sep 94	0.3620	0.2475	0.3007	0.3423
16 Sep 94 - 27 Jan 95	-0.7728	0.0032	-0.7273	0.0074
27 Jan 95 - 02 Jun 95	-0.1816	0.5721	-0.1608	0.6175
02 Jun 95 - 17 Nov 95	-0.6585	0.0199	-0.7342	0.0065

	11Portfolios of 7 Securities			
07 Jan 94 - 03 Jun 94	-0.7213	0.0122	-0.7000	0.0165
03 Jun 94 - 16 Sep 94	0.4971	0.1198	0.4546	0.1601
16 Sep 94 - 27 Jan 95	-0.8338	0.0014	-0.7818	0.0045
27 Jan 95 - 02 Jun 95	-0.2922	0.3833	-0.4000	0.2229
02 Jun 95 -17 Nov 95	-0.7034	0.0157	-0.6091	0.0467

no significant positive correlations. In the fourth period, another rising period, none of the portfolios has significant positive correlations. The reason may be due to market imperfections like transaction costs, information costs, insolvency costs and institutional constraint in the capital market and investors' heterogeneous expectations which contradict the assumptions made for the Capital Asset Pricing Model(CAPM). The reasons explained earlier for individual securities, may also cause the inconsistent and insignificant results in the second and fourth periods.

The other findings in the analysis of correlations between risk and portfolios of securities is the increasing strength(increasing magnitude) of correlation coefficients in the declining periods(first,third and fifth)as the number of securities in portfolio is increased. For example, using the product-moment correlation coefficient between the beta and the portfolios in the first period, the correlation

coefficient increase from 0.5457 in absolute magnitude with 2 securities in the portfolio, to 0.7213 in absolute magnitude, with 7 securities in the portfolio. For the same period the product -moment correlation coefficients between the beta and individual security is 0.3958 in magnitude, which is lower than correlation coefficients of all the portfolios. This indicate that the betas of portfolios is a better predictor of future returns than those of individual securities. The results using portfolios' betas are also consistent with the results obtained by Modigliani and Pogue(1974), Levy(1974), Tang(1974) Dawson(1984) and Kok and Goh(1992).