

**RELATIONSHIP BETWEEN  
RISKS AND RETURN IN THE  
KUALA LUMPUR STOCK EXCHANGE**

by

**KHOO KEAT CHYE**

(EGE 98016)

Perpustakaan Universiti Malaya



A510643315

012

**SUBMITTED TO THE FACULTY OF ECONOMICS AND ADMINISTRATION  
UNIVERSITY OF MALAYA IN PARTIAL FULFILMENT OF THE REQUIREMENTS  
FOR THE DEGREE OF MASTER OF APPLIED STATISTICS**

**APRIL 2000**

## **Acknowledgements**

This research paper would not have been completed if not for the active support of my lecturer and supervisor, Professor Kok Kim Lian. I am very grateful for his suggestions, dedicated guidance and advice which were very helpful. I am also indebted to him for his meticulous and painstaking editing of this research paper.

All the data used in this research paper had to be gathered from the libraries at KLSE, FEP, Za'aba and Taylor's College. For the kind assistance rendered to me in obtaining the data and necessary literature, I am grateful to the staff of these libraries.

My heartfelt thanks also go to my wife, Gin, for her support, understanding and help in copying and keying in some of the data. I must also thank my brother and sister, Boon and Jin, for keying in the last set of data.

I am also indebted to Mr. Yeo Cheng Hoe who was kind enough to lend me his books on Microsoft Excel and Access.

Finally, I am deeply grateful for the encouragement and support from my colleagues and course mates throughout the course.

## **ABSTRACT**

Results of empirical tests on the relationship between stock returns and various risk factors of sixty stocks in the Kuala Lumpur Stock Exchange over the period 1979-1998 are presented in this study. Overall the applicability of the capital asset pricing model in Kuala Lumpur Stock Exchange using monthly data is absent. Market risk alone or with another risk factors are unable to explain the variation in average returns. However, there is a significant non-linear relationship between average returns of individual stocks and market risk in two test periods 1983-86 and 1995-98.

This study also finds that other risk factors are significant in explaining the variation in average returns. Among them, skewness of the return distribution explains the variation in stock returns and portfolio during the test periods 1983-1986 and 1995-1998 respectively. Total risk accounts for the variation in stock or portfolio returns during the test period 1987-1990. Firm size is a significant variable during the period 1995-1998 but the positive relationship obtained contradicts those obtained by other studies. Lastly, price-to-book value ratio appears to explain the variation in returns during the period 1992-1995 and the combined period 1992-1998 when portfolios were sorted by size then by beta.

# Content

<b>Acknowledgement</b>	page (i)
<b>Abstract</b>	(ii)
<b>Contents</b>	(iii)
<b>List of Tables</b>	(iv)
<b>Chapter 1 <i>Introduction</i></b>	1
1.1 Objective of study	1
1.2 Significance of study	1
1.3 Hypotheses of study	2
1.4 Scope of study	5
1.5 Organisation of study	5
1.6 Institutional Framework of the Kuala Lumpur Stock Exchange	6
<b>Chapter 2 <i>Literature Review</i></b>	10
2.1 A brief review of CAPM theory	10
2.2 Review of previous and recent related study	12
<b>Chapter 3 <i>Research Methodology</i></b>	16
3.1 Methodology	16
3.2 Data Characteristics	17
3.3 Improving Predictability	18
3.4 Variables under study	19
3.5 Tests Design	21
3.6 Software	29
<b>Chapter 4 <i>Analysis and Results</i></b>	30
4.1 Tables	30
4.2 The coefficient of beta and beta squared	30
4.3 Explanatory power of Unsystematic risk	32
4.4 Behaviour of the proxy market portfolio	33
4.5 Explanatory power of Relative Skewness	34
4.6 The intercept term	36
4.7 Explanatory power of total risk	36
4.8 Explanatory power of firm size	38
4.9 Results using limited availability of PBV ratio	40
4.10 Explanatory power of firm size & PBV for different portfolio formation	42
4.11 Explanatory power of beta, firm size & PBV for different portfolio formation I	49
4.12 Explanatory power of beta, firm size & PBV for different portfolio formation II	50
<b>Chapter 5 <i>Summary of results and conclusions</i></b>	52
5.1 Summary of results	52
5.2 Conclusions: Applicability of CAPM to KLSE	53
5.3 Limitations of study	54
5.4 Suggestions for future research	55
<b>References</b>	57
<b>Appendix</b>	59

## List of Tables and Chart

Chart 1 : Graph of end of month KLSE Composite Index	page 9
Table S1 : Summary statistics for individual stocks from 1987-1988	23 – 24
Table S2 : Summary statistics for portfolios sorted by beta :sample from 1987-1998	26
Table S3 : Average returns, post rankings betas and average size for portfolios formed on size and then beta for the period 31 <sup>st</sup> July 1989 - 10 <sup>th</sup> June 1998	28
Table 1 : Cross-sectional regression for hypothesis one	31
Table 2 : Cross-sectional regression for hypothesis two	32 – 33
Table 3 : Behaviour of the proxy market portfolio	33
Table 4 : Cross-sectional regression for hypothesis four	35
Table 5 : Cross-sectional regression for hypothesis five	36
Table 6 : Cross-sectional regression for hypothesis six	37
Table 7 : Cross-sectional regression for hypothesis seven	39
Table 8(a) : Summary of portfolio (sorted by beta) statistics	41
Table 8(b) : Summary of portfolio (sorted by size) statistics	41
Table 8(c) : Summary of portfolio (sorted by size then beta) statistics	41
Tables 9 (a) - (c) : Cross-sectional regression for hypothesis eight : portfolios (sorted by size then beta)	42
Table 10 (a) : Cross-sectional regression for hypothesis seven : portfolios (sorted by beta)	45
Table 10 (b) : Cross-sectional regression for hypothesis eight : portfolios (sorted by beta)	46
Tables 11 (a) : Cross-sectional regression for hypothesis seven: portfolios (sorted by size)	47
Tables 11 (b) : Cross-sectional regression for hypothesis eight : portfolios (sorted by beta)	48

Tables 12 (a) : Cross-sectional regression: portfolios (sorted by size) two independent variables	49
Tables 12 (b) : Cross-sectional regression: portfolios (sorted by beta) two independent variables	49
Tables 12 (c) : Cross-sectional regression: portfolios (sorted by size then beta) ) - two independent variables	50
Tables 13 (a) : Cross-sectional regression: portfolios (sorted by size) - three independent variables	50
Tables 13 (b) : Cross-sectional regression: portfolios (sorted by beta) ) - three independent variables	51
Tables 13 (c) : Cross-sectional regression: portfolios (sorted by size then beta) ) - three independent variables	51