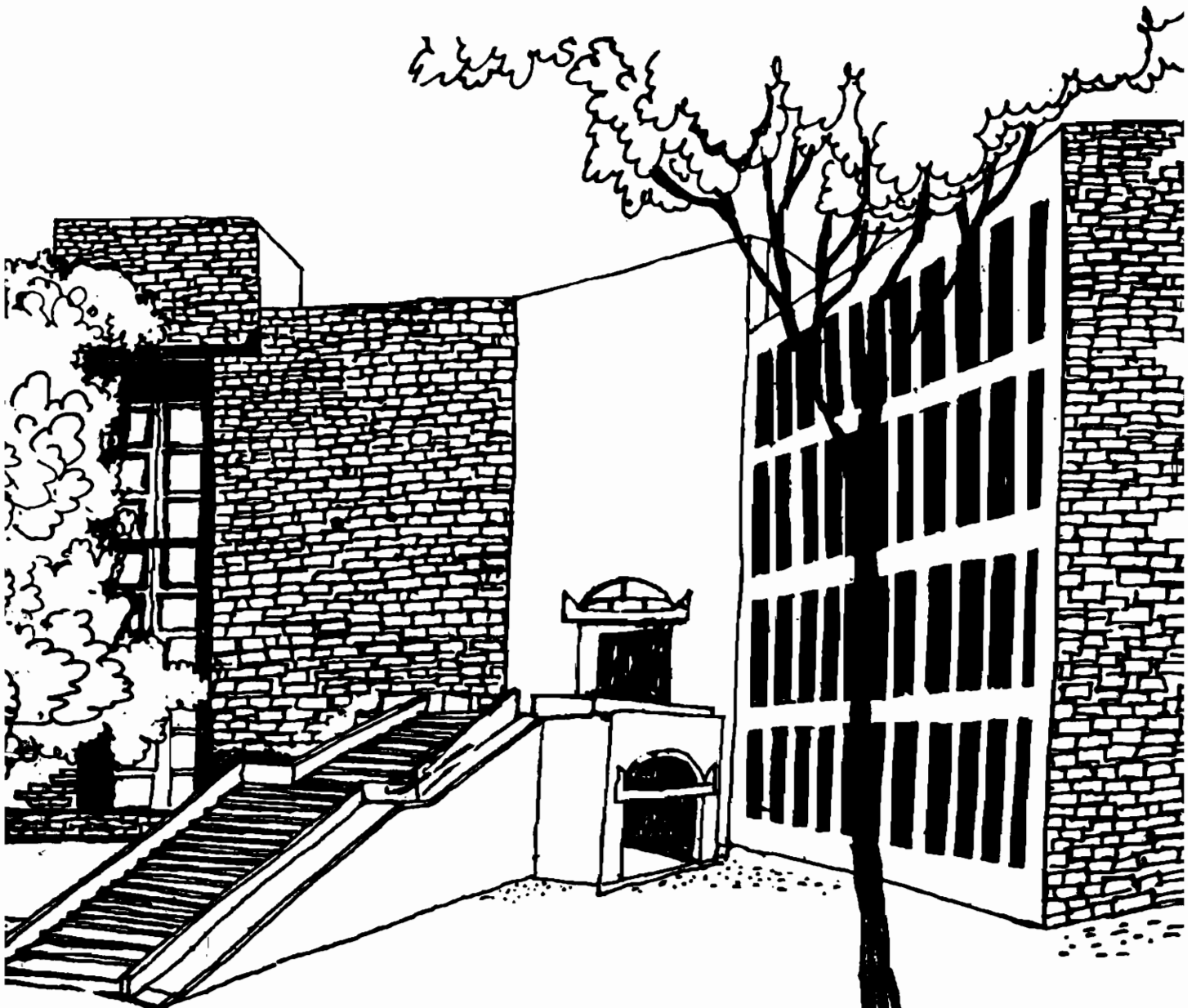




Working Paper



BEHAVIOUR OF EXCESS STOCK RETURN AROUND
EARNINGS ANNOUNCEMENT DAY: A TEST OF THE
EFFICIENCY OF KUALA LUMPUR STOCK EXCHANGE

By

Ahmadu Umaru Sanda
Ang Jili
&
G.S. Gupta

W.P.No.98-11-03
November 1998

1481

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**BEHAVIOUR OF EXCESS STOCK RETURN AROUND EARNINGS
ANNOUNCEMENT DAY: A TEST OF THE EFFICIENCY OF KUALA LUMPUR STOCK EXCHANGE**

Ahmadu Umaru Sanda
Ang Jih
G S Gupta

University Sains Malaysia

Abstract

This study is concerned with analyzing stock returns around periods of earnings announcements. Three hundred and sixty-four earnings announcement dates (events) were obtained from the annual earnings announcements of 91 stocks listed on the main board of KLSE for the years 1993 to 1996. For each event, market model parameters were estimated and adjusted for thin trading using daily return data for the period six months before the event. The estimated parameters were then used to estimate the residuals for the period 29 days before and 30 days after the announcements. The cumulative average residuals, CAR, was found to exhibit a significantly negative trend for more than a month after the announcement. Thus with respect to stocks in the sample, the KLSE does not adjust instantaneously to the release of earnings information and hence the KLSE is semi-strong inefficient.

1. Introduction

In a free-enterprise economy, the capital market plays a key role in generating long-term funds for business organizations. In order to ascertain the extent to which the stock market enhances an efficient resource allocation, a lot of ink has been shed on the efficiency of the stock market. According to Fama (1970), there are three classes of market efficiency. In its most basic form, called the weak form, efficiency of a stock market is gauged by the extent to which past patterns of stock returns could be used to forecast future returns. In a market that is efficient in the weak form, such a technical analysis is useless. The semi-strong form broadens the information set to include any publicly available information. Such publicly available information could be in the form of previous stock returns, earnings announcement, mergers and acquisition, etc. Thus, in a market that is semi-strong form efficient, an investor cannot, for example, make use of earnings announcement information, to gain

abnormal return. By the time the investor reacts, the market would have already adjusted to that piece of information. This study focusses attention on this aspect of market efficiency. Earning per share is central to the valuation of equity securities. The extent to which the stock market digests the information contained in earnings announcement is therefore important. The central role of earnings per share in the valuation of common stocks is not the only factor motivating this study. Another factor motivating this study is the dearth of empirical evidence concerning the stock markets response to earnings announcements in the capital markets of developing economies such as Malaysia.

2. Literature Review

Studies on analytically extensive developed capital markets have produced conflicting results. For example, Ball and Brown (1968), Castanias (1979), Cooper (1982), and Fama (1991) find support for the efficient market hypothesis. On the other hand, studies by Bodie (1976), Brown (1978), Litzenberger and Ramaswamy (1982), Jones and Litzenberger (1970) find evidence against it. Studies on the KLSE have also produced mixed results. Fauzias (1992) and Annuar Md Nassir, Ariff, and Shamsheer (1993), report results that suggest evidence of efficiency of the KLSE while Chee and Gupta (1992) and Othman Yong (1987) found evidence against it.

Barnes (1986) conducts a test of the efficiency of the Kuala Lumpur Stock Exchange, using daily data for the six months to 30 June 1980, covering thirty companies. Despite the thin nature of trading in the exchange at the time as compared to other

more developed exchanges, he finds no evidence of serial correlation in the residuals. This finding supports the weak-form efficiency hypothesis. Similar results were obtained by Dawson (1984) who studied the trend toward market efficiency in the Hong Kong stock exchange.

Basu (1977) questions the validity of the efficient market hypothesis. In his study covering 1400 industrial firms trading on NYSE for the period September 1956 through August 1971, Basu uses the standard OLS technique and finds that price earnings ratio information is not fully reflected in security prices in as rapid a manner as postulated by the semi-strong form of the efficient market hypothesis. He observes that "contrary to the growing belief that publicly available information is instantaneously impounded in security prices, there seem to be lags and frictions in the adjustment process. As a result, publicly available price earnings ratios seem to possess information content and may warrant an investor's attention at the time of portfolio formation or revision" (p. 681).

Brown (1978) employs the use of residual analysis in his study of market efficiency for US daily data for the period 1963 to 1971. His results show that excess returns from purchase of securities at the time of the publication of EPS information substantially exceed transactions costs. The results also show that the adjustment process rather than being instantaneous, is about 45 market days. His results therefore do not support the efficiency hypothesis. Also rejecting the efficiency hypothesis is the work of Chu (1985) who studied the weekly price behavior of the

Singapore Stock Exchange for the period January 1975 to December 1979. His study seems to confirm the inefficiency of the Singapore stock market.

Finnerly (1976) conducts a test for strong form of the efficiency hypothesis, using data for the period January 1969 to December, 1972. He analyses data on 30,000 insider transactions and finds that in the short run insiders are able to identify profitable as well as unprofitable situations. Litzenberger and Ramaswamy (1982) examine whether dividend has any effect on stock prices. Their results show significantly positive but nonlinear association between common stocks returns and dividend yields.

Fauzias Mat Nor (1992) investigates the efficiency of the KLSE by examining the response of common stock return to corporate take-over announcement. She uses daily data for the beginning of January, 1977 to December 31, 1989. The methodology adopted by Fauzias closely resembles that of this study but differ in one important respect. As adopted in this study, Fauzias adjusted for thin trading, used the CAR and AR procedure, but did not regress the CAR on a time trend. Her conclusion that the "KLSE is reasonably efficient" (p. 93) should thus be taken against the aforementioned limitation.

Annur Md Nassir, Mohamed Ariff and Shamsheer Mohamad (1993) employed the unit root test to test for the efficiency of the KLSE. They used both weekly and monthly closing prices of the sectoral indices of the KLSE and of the KLSE composite index.

They found that "the KLSE is weak form efficient though there are pockets of inefficiencies for some indices" (p. 57). The study by Annuar et al. though it employed the unit root test which has the advantage of taking care of time-trend and drift, had the shortcoming that it could only test for the weak but not for the semi-strong form efficiency of the market. The results obtained by Annuar and Shamsheer differ from those of Othman Yong (1987). Othman Yong used weekly data for the period January 1977 to May 1985 and found a high degree of independence in price changes. As observed by Annuar and Shamsheer (1993) the study (Othman Yong's) was weakened by its inability to control for thin trading. Closely related to the study of Othman Yong is that of Kok Kim Lian and Goh Kim Leng (1996) who utilized the weekly closing indices of six Asia-Pacific countries for the period 1981 to 1992 and found that "stock markets of the United States and Japan are weak form efficient while the smaller markets of Hong Kong, Australia, Malaysia, and Singapore exhibit varying degrees of market inefficiency" (p. 59).

Annuar and Shamsheer (1993) studied the semi-strong form efficiency of the market using monthly data for 233 firms for the period January 1975 to December 1989. They corrected for thin trading and employed the Fama and MacBeth moving window technique. Their results led to the conclusion that "The evidence suggests that the market's reaction to the information contained in the announcement of earnings and dividends is almost, if not fully, reflected in share prices by the end of the announcement month, especially for the frequently traded samples" (p. 112). The conclusion should be interpreted with a grain of salt. The use of monthly data has

the tendency to mask important daily variations in the stock returns. If the market took some days to adjust this delay would not necessarily be captured by monthly data

Othman Yong (1993) used daily and weekly indices of markets of Malaysia, Hong Kong, Australia, Japan and the United States to study the comovement of those indices. He used both parametric and non-parametric techniques of data analysis. He found that "the information contained on the past movements of stock prices in other stock markets is not useful in predicting the future price movements in the Malaysian stock market" (p. 79)

Mansor Md Isa and Ong Yew Jin (1992) tested for the efficiency of the KLSE using monthly data for the period 1978 to 1987 for 150 companies. Though their results indicated evidence of efficiency, they cautioned that "there may be a possibility of earning above normal return by concentrating on firms with low market values of their common stocks" (p. 36). A similar conclusion was reached by Mansor Md Isa and Kam Lee Ching (1996) when they studied the acquisition of Multi-Purpose Holdings Berhad. However, the work of Tay Kim Yong (1991) examining the firm-size and January anomalies showed that stock returns exhibited a seasonal pattern, a finding suggesting inefficiency of the market.

3 Data and Methodology

The present study uses the standard residual paradigm and a daily price differencing

interval to closely examine the market adjustment to EPS information. Annual earnings announcement dates for the years 1993 to 1996 were obtained for a sample of 91 stocks listed in the main board of KLSE. Appendix 1 shows the list of stocks in the sample. Sample selection was determined by availability of earnings announcement dates for four consecutive years, as well as of stock return data. Earnings announcement dates were extracted from the various issues of the Investors Digest. As the sample was selected based upon data availability it is likely to be biased in favour of large companies which have a greater tendency to publicize their earnings announcements than small companies. A comment from an anonymous referee suggests that this kind of bias is likely to lead to conclusions in support of market efficiency. An unbiased sample comprising small and large firms alike would likely lead to situations where "many people prospered from abnormal returns". Thus, the results of this study cannot be generalized to the entire market, as the sample is not representative of the population. Since there are 91 stocks each of which has four announcement dates for the years 1993 to 1996, the sample comprises 364 announcement dates (or events).

This study is concerned with a developing stock market's response to earnings announcement. There is the likelihood that some stocks at least may be thinly traded. Thus, the methodology adopted in the studies of the efficient market hypothesis (EMH) in developed capital markets cannot be straightforwardly applied without modification. In fact, earlier studies of the KLSE such as Fauzias (1992) have taken account of thin trading. The residual analysis to be adopted in this study will

therefore make an allowance for thin trading by making adjustment to beta as suggested by Scholes and Williams¹. The residual analysis involves a number of steps. First, the analysis involves estimating the coefficients of the market model during a time period when stock returns are expected to be in equilibrium. As the announcement date approaches, rumour begins to circulate, causing abnormal movements in stock return. Thus, in order to avoid the well-known econometric problem of "errors in variables", the period around earnings announcement date is excluded from the estimation of the parameters of the market model:

$$r_{jt} = \alpha_j + \beta_j r_{mt} + u_{jt}$$

and r_{jt} - return on security j in time t , measured as $\ln(P_t/P_{t-1})$, where P_t is the stock price in period t adjusted for dividends, rights, etc

r_{mt} - return on the market in time t , measured as $\ln(P_t/P_{t-1})$, where Cl_t =

KLSE composite index in period t

α_j, β_j - parameters

u_{jt} - the "error" term assumed to have zero mean and independent of r_{mt} .

The market model was estimated for each of the 364 events using 6 months daily data

1

There are 364 event dates in the sample. For each event date, estimates β , β^+ and β^- and ρ must be computed. This will enable the estimation of adjusted beta using the following formula suggested by Scholes and Williams:

$$\beta^* = \frac{\beta + \beta^+ + \beta^-}{1 + 2\rho}$$

where β^* is the adjusted beta, β is the unadjusted beta, β^+ is the beta obtained by regressing current stock returns on one-period lag series of returns of the market, β^- is the beta obtained by regressing current stock returns on one-period lead series of market returns, and ρ is the correlation coefficient between current and one-period lag series of market returns

for the period prior to the corresponding event, leaving out two weeks just before the event. The estimates for β are included in Appendix 2

The second step involved computing β^+ , β^- , ρ and β' as per the footnote 4. The results are provided in Appendix 2. The third step involved making use of α and β' to estimate stock returns for the period around the announcement date (30 days prior and 30 days after the announcement date). Subtracting the estimated from actual values yields the residuals. Thus, the residuals are obtained by purging the effects of market movements from individual stock return using the following formula

$$a_{i,t} = r_{i,t} - (\alpha_i + \beta'_i r_{m,t})$$

The next step in the residual analysis is to calculate the average residuals (abnormal return), AR_t , using the formula:

$$AR_t = \frac{\sum_{i=1}^n a_{i,t}}{n}$$

where n is the number of events (i.e. 364)

The date of announcement differed for each security and year. Averaging was performed relative to the date of publication of the annual EPS number. The average residual is interpreted as the average estimated percentage deviation of the securities in the sample from their normal relationship with the market. Using AR_t , cumulative average residuals, CAR, was constructed (see Fama et al (1969)) using the formula:

$$CAR_T = \sum_{t=20}^T AR_t$$

Analysis of the AR and CAR around the event will provide the attempted test for the semi-strong efficiency of the market

4. Results and Analysis

Table 1 shows the results concerning thin trading. The last two columns show the beta and adjusted beta computed to take account of thin trading. The detailed values of betas and adjusted beta are shown in Appendix 2 but are summarized below

Table 1: Adjusting for thin trading

Interval	Beta		Adjusted Beta	
	freq	%	freq	%
Less than 0	2	0.5	4	1.1
0-0.5	51	14.0	50	13.7
0.51-1.0	127	34.9	114	31.3
1.01-1.5	115	31.6	125	34.3
1.51-2	57	15.7	65	17.9
More than 2	12	3.3	6	1.7
Total	364	100	364	100

Table 1 above shows the frequencies and relative frequencies of betas and adjusted betas. Each of the 91 stocks had four annual earnings report, making the total number of events 364. The distributions of beta and adjusted beta appear to be

normal, with 65 per cent of values falling between 0.5 to 1.5. Despite the bell-shaped nature of the distributions of adjusted and unadjusted beta, there are areas of differences between the two. From the table, the effects of thin trading can be gauged by observing the differences in the relative frequencies of betas and adjusted betas in various beta intervals. Betas of more than two appear to have been revised downwards so that with adjustment for thin trading this category of betas become less frequent. The relative frequencies of betas and adjusted betas also appear to differ in the two intervals ranging from 0.51 to 1.50. The interval 0.51 to 1 accounts for 34.9 per cent of unadjusted betas but for 31.3 per cent of adjusted betas. This contrasts with the interval 1.01 to 1.50 which accounts for 31.6 per cent of unadjusted betas but for 34.3 per cent of adjusted betas. Thus, no generalization can be made concerning the direction of adjustment because it seems to cause a downward revision of certain category of betas but an upward revision of other categories. The fact that relative frequencies differ for adjusted and unadjusted betas is however indicative of evidence of thin trading. Having adjusted for thin trading, the residual analysis proceeds in the usual fashion.

Table 2 shows the average residual, the corresponding t-statistic, and CAR (both daily and annual) for -29 to +30 days around the event.

Table 2. AR, CAR and annualized values of CAR

Day	AR (daily)	t-value	CAR (daily)	CAR (Annual)
-29	-0.00098	-0.03000	-0.00098	-0.30161
-28	0.00097	0.03000	-0.00001	-0.00401
-27	-0.00216	-0.08000	-0.00217	-0.54698
-26	-0.00100	0.04000	0.00100	0.32038

-25	0.00074	0.02000	-0.00035	-0.12027
-24	0.00050	0.02000	0.00015	0.05743
-23	-0.00118	-0.03000	-0.00103	-0.31299
-22	-0.00078	-0.02000	-0.00181	-0.48398
-21	0.00027	0.01000	-0.00154	-0.43065
-20	0.00088	0.03000	-0.00066	-0.21529
-19	-0.00014	-0.01000	-0.00080	-0.25386
-18	0.00040	0.01000	0.00040	-0.13776
-17	-0.00047	-0.02000	-0.00087	-0.27244
-16	0.00074	0.03000	-0.00013	-0.04634
-15	-0.00112	-0.04000	-0.00125	-0.36537
-14	0.00080	0.03000	-0.00045	-0.14995
-13	0.00238	0.10000	0.00193	1.02283
-12	0.00116	0.04000	0.00309	2.08252
-11	0.00000	0.00000	0.00309	2.07916
-10	-0.00006	0.00000	0.00303	2.01485
-9	0.00075	0.03000	0.00378	2.95763
-8	0.00031	0.01000	0.00409	3.43623
-7	0.00090	0.04000	0.00499	5.15674
-6	-0.00101	-0.03000	0.00398	3.27319
-5	0.00010	0.00000	0.00408	3.43623
-4	0.00198	0.09000	0.00606	8.11187
-3	-0.00021	-0.01000	0.00585	7.44338
-2	-0.00126	-0.05000	0.00459	4.33766
-1	0.00153	0.06000	0.00612	8.31239
0	0.00220	0.08000	0.00832	19.66039
1	-0.00202	-0.07000	0.00630	8.92631
2	-0.00013	0.00000	0.00617	8.46222
3	-0.00243	-0.08000	0.00374	2.92039
4	-0.00047	-0.02000	0.00327	2.30435
5	0.00224	0.09000	0.00551	6.44968
6	-0.00010	0.00000	0.00541	6.18931
7	0.00047	0.02000	0.00588	7.51724
8	-0.00014	-0.01000	0.00574	7.10121
9	-0.00183	-0.08000	0.00391	3.16885
10	0.00245	0.10000	0.00636	9.16311
11	-0.00051	-0.02000	0.00585	7.44338
12	-0.00151	-0.05000	0.00434	3.87768
13	0.00032	0.01000	0.00466	4.48112
14	0.00053	0.02000	0.00519	5.65428
15	-0.00142	-0.06000	0.00377	2.97638
16	-0.00026	-0.01000	0.00351	2.62157
17	0.00046	0.02000	0.00397	3.28408
18	-0.00409	-0.12000	-0.00012	-0.03408
19	-0.00131	-0.05000	-0.00143	-0.40207
20	0.00052	0.02000	-0.00091	-0.27694
21	0.00040	0.02000	-0.00051	-0.16411
22	0.00015	0.01000	0.00066	0.20983

23	0.00232	0.10000	0.00166	0.83934
24	0.00076	0.03000	0.00242	1.42422
25	0.00099	0.04000	0.00341	2.47321
26	-0.00261	-0.09000	0.00080	0.34188
27	0.00199	0.07000	0.00279	1.76671
28	0.00278	0.11000	0.00557	6.59714
29	-0.00252	-0.09000	0.00305	2.04462
30	0.00243	0.09000	0.00062	0.25178

An examination of the results in Table 2 above shows that none of the average residuals is significant at the conventional levels. All the t-values are very small, suggesting no evidence of inefficiency. The insignificance of the t-values might tempt one to conclude that the KLSE is efficient. Though none of the t-values is significant, the plot of the AR and the CAR reveals a clear pattern. Roughly 2 to 4 weeks before the announcement, the graph in Figures 1 and 2 appears to be quite stable, most of the time hovering around zero. However, about thirteen days to the release of EPS, this stable pattern is disrupted, as an upward trend begins to take shape. This might be due to leakage of

information concerning the EPS before their official release. This upward trend continues until on the announcement date, (i.e. day 0) when the CAR reaches a peak. One day after the release of EPS figures, the upward trend in the CAR begins to be reversed. A downward trend is set in motion, and the market doesn't quite look like returning to its previous "stable" level until after two weeks of the announcement. The evidence reported here is therefore mixed. On the one hand we see the average residuals all not having significant t-values, and on the other hand, we see the CAR exhibiting an upwards trend before, and a downward trend after the release of the accounting numbers. While the former is suggestive of efficiency, the latter points towards the contrary. In a study testing the efficiency of the NYSE, Brown (1978) observes that a significant trend in the CAR is suggestive of market inefficiency. Following Brown's approach, the CAR series was regressed on day number, starting from day -20 through day 30. This period was taken because, as observed from the graph in Figures 1 and 2, it is the period of instability in the CAR. Brown (1978) suggested that the standard OLS technique would not be appropriate here because of autocorrelated errors. This study therefore uses an alternative to the standard OLS—the Cochrane-Orcutt iterative procedure. The results obtained from the Cochrane-Orcutt procedure are given below:

$$\text{CAR} = 5.51 - .14\text{DAY}$$

(5.3) (-2.38)

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$$R^2 = .413$$

These results suggest a significant negative trend in the CAR and thus argue for the semi-strong inefficiency in KLSE.

Clearly, the AR suggests no evidence of inefficiency, while the CAR leads to a different conclusion. Two possible explanations can be offered for this apparent contradiction. As earlier indicated, the AR and the CAR each has a different formula for derivation, and hence each leads to a different set of data series. The differences in the series as well as in the formulae for their computation offer a statistical reasoning behind the observed differences in the conclusions emerging from the two tests. A second possible cause for the differences in the results emerging from the two tests is that the two tests differ in one methodological respect. The testing for the significance of AR is based purely on the mean and standard deviation of the series. A high t-ratio is indicative of statistical significance. This is not the case with CAR. In order to test for the significance of the CAR, the series had to be regressed upon time, with time measured by the number of days after the announcement date. The reasons advanced for the differences in the conclusions emerging from the AR and CAR tests border on the differences in the testing procedures. More work is required perhaps in the realm of theoretical derivations to establish the link between sampling selection bias and the observed empirical differences between the results from the AR tests and those of the CAR.

5 Conclusion

The evidence reported here appears to be mixed. While the AR is not significant, the

significantly negative trend of the CAR after the announcement of earnings is indicative of market inefficiency. The statistically significant trend in the sample CAR indicates that the market failed to adjust instantaneously to the new EPS information, so that excess returns could have been earned by acting on the EPS information as it appeared in the daily papers. This conclusion is consistent with other studies which show that the market does not instantaneously adjust to new information. This research is unable to offer a theoretical explanation for the differences in the conclusions arising from the significant CAR and the insignificant AR. However, the difference is not uncorrelated with the differences in the method for testing their significance. The test for the significance of AR is based upon a comparison of its mean and standard deviation; while the CAR tests utilizes a Cochrane Orcutt procedure. In the presence of serial correlation, this procedure provides more robust parameter estimates. Further work is required especially in the realm of theoretical development to examine the role of sampling bias in leading to opposing results from the two tests.

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APPENDIX I

RPACIFIC	REKA PACIFIC BHD
BKATIL	BUKIT KATIL RUBBER ESTATES BHD
BRAYA	BANDAR RAYA DEVELOPMENT BHD BHD
BTOTO	BERJAYA SPORTS TOTO BHD
C&CBIN	CYCLE AND CARRIAGE BINTANG BHD
CCM	CHEMICAL COMPANY OF MALAYSIA BHD
CIHLDG	CI HOLDINGS BHD
CIMA	CEMENT INDUSTRY OF MALYSIA BHD
CMSB	CEMENT MANUFACTURERS OF SARAWAK BHD
CTECK	CHIN TECK PLANTATIONS BHD
DNP	DNP HOLDINGS BHD
ESSO	ESSO MALAYSIA BHD
FFM	FEDERAL FLOUR MILLS BHD
FIMA	FIMA CORPORATION BHD
GBH	GOH BAN HUAT BHD
GENTIN	GENTING BHD
GHOPE	GOLDEN HOPE PLANTATIONS BHD
GKENT	GEORGE KENT (M) BHD
GNEALY	GNEALY PLANTATIONS BHD
GOPENG	GOPENG BHD
GPLUS	GOLDEN PLUS HOLDINGS BHD
GUINES	GUINNESS ANCHOR BHD
GUTHRIE	GUTHRIE ROPEL BHD
HEXZA	HEXZA CORPORATION BHD
HLCRED	HONG LEONG CREDIT BHD
HUME	HUME INDUSTRIES BHD
IGB	IGB CORPORATION BHD
INCHEN	INCH KENNETH KAJANG RUBBER PLC BHD
JERAM K	JERAM KUANTAN BHD
KCB	KELANG CONTAINER INDUSTRIES BHD
KGHLDG	KHONG GUAN HOLDINGS BHD
KJOO	KIAN JOO CAN FACTORY BHD
KKELLAS	KINTA KELLAS PUBLIC LTD CO BHD
KRETAM	KRETAM HOLDINGS BHD
KSIDIM	KUALA SIDIM BHD
KUCHAI	KUCHAI DEVELOPMENT BHD
KULIM	KULIM (MALAYSIA) BHD
L&G	LAND & GENERAL BHD
LIEHOE	LIEN HOE CORPORATION BHD
LION	LION CORPORATION BHD
MAGNUM	MAGNUM CORPORATION BHD
MALEX	MALEX INDUSTRIES BHD
MARUICH	MARUICHI TUBE BHD
MAS	MALAYSIAN AIRLINE SYSTEM BHD
MAYBK	MALAYAN BANKING BHD
MBA	MALAYSIA BRITISH ASSURANCE BHD

MBF	MBI HOLDINGS BHD
MCBH	MCB HOLDINGS BHD
MCEMENT	MALAYAN CEMENT BHD
MECHMAR	MECHMAR CORPORATION BHD
MFCB	MEGA FIRST CORPORATION BHD
MFLOUR	MALAYAN FLOUR MILLS BHD
MHS	MALAYSIAN HELICOPTER SERVICES BHD
MISC	MALAYSIAN INTERNATIONAL SHIPPING CORPORATION BHD
MOX	MALAYSIA OXYGEN BHD
MPI	MALAYSIAN PACIFIC INSURANCE BHD
MUIB	MALAYSIAN UNITED INDUSTRIES BHD
MWATA	MALAYAWATA STEEL BHD
MWE	MWE HOLDINGS BHD
NANYANG	NANYANG PRESS (MALAYSIA) BHD
NEGARA	NEGARA PROPERTIES BHD
NSTP	THE NEW STRAITS TIME PRESS BHD
OYLIND	OYL INDUSTRIES BHD
PALMCO	PALMCO HOLDINGS BHD
PBB	PUBLIC BANK BHD
PCEM	PACIFIC CHEMICALS BHD
PERLIS	PERLIS PLANTATIONS BHD
PGKALE	PENKALEN HOLDINGS BHD
PMI	PAN MALAYSIA INDUSTRIES BHD
PPERAK	PARIT PERAK HOLDINGS BHD
RAHMAN	RAHMAN HYDRAULICS BHD
RENONG	RENONG BHD
RESORT	RESORT WORLD BHD
RHB	RASHID HUSSEIN BHD
ROTHM	ROTHMANS OF PALL MALL BHD
RVIEW	RIVER VIEW RUBBER ESTATES BHD
SANYO	SAYNO INDUSTRIES HOLDINGS BHD
SDRED	SELANGOR DREDGING BHD
SEADEV	SOUTH EAST ASIAN DEVELOPMENT CORPORATION BHD
SHELL	SHELL REFINING COMPANY BHD
SITATT	SITT TATT BHD
SJA	SOUTH JOHORE AMALGAMATED BHD
SPROP	SELANGO PROPERTIES BHD
TAIPIN	TAIPING CONSOLIDATED BHD
TCHONG	TAN CHONG MOTOR HOLDINGS BHD
TIME	TIME ENGINEERING BHD
TRIND	TRADE WINDS BHD
TV3	SYSTEMS TELEVISION MALAYSIA BHD
UAC	UAC BHD
UMCCA	UNITED MALACCA RUBBER ESTATES BHD
UTDPLT	UNITED PLANTATIONS BHD

Appendix 2

COMPANY	BLAG	BLEAD	COR	BETA	ADJBETA
RPACIFIC	-.006815	.063301	.078360	1.47	1.32
	.438887	-.010548	.263472	.76	.78
	.034437	.994300	.284194	1.48	1.60
	-.331174	.267401	.166408	1.58	1.14
BKATIL	-.009150	.014220	.397815	-.44	-.24
	.502232	.060174	.174601	.90	1.08
	.594370	.541588	.299141	.60	1.09
	.165867	-.251592	.186311	.13	.03
BRAYA	-.107222	.181923	.230717	2.09	1.48
	.365108	.274801	.143238	1.68	1.81
	.473300	.497949	.238575	1.43	1.63
	.500308	.104405	.123701	1.71	1.85
BTOTO	.349645	.144929	.134970	.94	1.13
	.043337	.656134	.294713	1.03	1.09
	.649393	.662211	.293120	1.33	1.66
	.067530	-.286348	.066380	.37	.13
C&CBIN	.262446	-.001544	.205454	1.18	1.02
	.093170	.133763	.142188	.67	.70
	.190690	.279968	.329883	.67	.69
	-.151582	.064016	.150168	.63	.41
CCM	.052812	-.087635	.255274	.16	.08
	.269489	.222630	.162120	.71	.91
	.169856	.535446	.277392	1.27	1.27
	.602067	-.023267	.143851	.62	.93
CIHLDG	.353860	.328675	.252151	.90	1.05
	.324343	.397310	.148515	.40	.86
	.166674	.022604	.364580	.22	.24
	-.003282	-.099494	.124523	.12	.02
CIMA	.582582	.405510	.257780	.80	1.18
	.276168	.288029	.152538	.90	1.12
	.315560	.145342	.250313	1.03	1.00
	.328919	.077585	.161712	.83	.94
CMSB	-.080608	.841999	.097416	.58	1.12
	.077699	.214627	.120538	.52	.66
	.113208	.205450	.257718	.23	.36
	-.071448	.160389	.160716	.70	.60
CTECK	.064648	.174708	.174358	.88	.83
	.374173	-.136367	.139188	1.82	1.61
	-.047336	.227151	.237361	.90	.74
	.425810	-.001092	.120376	.96	1.12
DNP	.094549	-.138484	.205649	1.42	.97
	-.055505	-.177346	.120538	1.80	1.27
	.033839	.669035	.234252	1.69	1.63
	.242527	-.173688	.116203	1.72	1.46
ESSO	.083505	-.002792	.238337	.15	.16
	.020301	-.034722	.156725	.74	.55
	.063362	.185939	.268125	.31	.36
	.095379	.004602	.143851	.43	.41
FFM	.603473	.242205	.254795	.37	.81
	.428049	-.025848	.146229	.56	.75
	-.119180	.344750	.260790	.33	.37
	.288089	-.178721	.114659	.26	.30
FIMA	-.396203	-.313881	.026218	.92	.20
	.057608	-.055993	.077367	.92	.80
	.201506	.325391	.168762	.97	1.12
	.262522	-.117444	.134287	1.31	1.15

Appendix 2 Continued

COMPANY	BLAG	BLEAD	COR	BETA	ADJBETA
GBH	.557385	.204169	.197505	1.41	1.56
	.120275	.109844	.126964	1.17	1.12
	.082757	.669477	.230227	1.62	1.63
	.474457	.050672	.122219	1.18	1.37
GENTIN	.533785	.019406	.270273	.86	.92
	.077664	.189671	.141067	1.02	1.01
	.289892	.250719	.269723	1.18	1.12
	.192373	.019950	.128227	.62	.66
GHOPE	.298766	.642737	.165983	1.02	1.47
	.109184	.171404	.143149	1.77	1.59
	.216079	.375592	.278478	1.09	1.08
	-.165103	.130731	.139782	1.05	.80
GKENT	.529556	.767226	.203747	.87	1.54
	.219743	.128019	.140676	.54	.69
	.091629	-.093508	.230917	.57	.39
	-.130068	-.194501	.123804	.64	.25
GNEALY	.269172	.297421	.372902	.32	.51
	.172419	.274050	.148462	.88	1.03
	.393123	.132597	.361348	.59	.65
	.099127	.165465	.134069	.41	.53
GOPENG	.415590	.625649	.277359	1.19	1.44
	-.282414	-.168986	.119027	1.48	.83
	.218104	.592963	.234252	1.67	1.69
	.206229	.172171	.120376	1.47	1.49
GPLUS	.032683	.210744	.204722	.92	.83
	.439990	.107258	.121444	1.47	1.62
	-.090567	.377053	.202938	1.66	1.38
	.223056	.328560	.083369	1.87	2.07
GUINES	.144589	.130517	.263337	.28	.37
	.179077	-.131885	.120538	.90	.77
	.065792	-.023939	.246146	.79	.56
	.111588	-.004926	.160716	.69	.60
GUTHRIE	.060730	.405802	.257780	1.09	1.03
	.414835	-.119069	.158687	1.68	1.50
	.094683	.206610	.267609	.59	.58
	-.252083	-.037846	.114659	.51	.18
HEXEA	-.655903	.510962	.036259	1.49	1.26
	-.131286	.083183	.112204	1.90	1.51
	.038342	.664397	.184564	1.89	1.90
	.512350	-.018926	.104038	1.60	1.73
HLCRED	-.105611	1.023355	.255274	1.01	1.27
	.310741	.035571	.152698	.47	.62
	.246179	.467613	.267609	.91	1.06
	.524954	.406283	.127150	.82	1.39
HUME	.451418	.502445	.270273	.79	1.13
	.278696	.078047	.156645	.69	.80
	.209903	.188100	.278478	.83	.79
	.118916	.074451	.127150	.69	.71
IGB	.186345	-.165098	.197505	1.12	.82
	-.030327	-.068467	.152308	1.47	1.05
	.168867	.517531	.264465	1.31	1.31
	-.261797	.242628	.120151	1.07	.84
INCKEN	.276268	-.149170	.259901	.30	.28
	.301999	-.155495	.118888	.86	.81
	.141583	.141264	.212071	.67	.67
	.302818	.348291	.113346	.29	.77

Appendix 2 Continued

COMPANY	BLAG	BLEAD	COR	BETA	ADJBETA
JERAM K	.114005	.550013	.175392	.31	.72
	.264266	.068624	.123328	.29	.50
	.396115	-.165746	.211081	1.10	.93
	.119982	.489057	.152872	1.49	1.61
KCB	.896475	.741717	.406407	.78	1.33
	.125427	-.104890	.154869	1.48	1.14
	.328438	.953261	.361348	1.34	1.52
	-.024085	.230839	.128227	1.74	1.55
KGLD	-.348992	.669179	.213599	.42	.52
	.386167	-.008374	.118888	1.45	1.47
	.065157	-.132870	.211081	.29	.15
	.039805	-.016398	.113346	2.06	1.70
KJOO	.183732	.352947	.259686	.54	.71
	.376270	.019384	.164176	.92	.99
	.490772	.035830	.255181	.79	.87
	-.072361	.215222	.059463	.91	.94
KRELLAS	.715908	.892803	.257780	2.16	2.48
	.340923	.158195	.152538	1.47	1.51
	.177882	.632698	.250313	1.46	1.51
	.226288	.052524	.161712	1.45	1.31
KRETAM	-.273428	.063656	.172566	.58	.27
	.132213	.070413	.126964	1.87	1.65
	.197206	.630594	.230917	1.85	1.83
	.396001	.004450	.109508	1.81	1.82
KSIDIM	2.383254	-1.408835	.272370	.56	.99
	.299730	-.050303	.149475	1.85	1.62
	.363015	.380283	.277392	1.27	1.29
	.192991	.077788	.065521	.83	.98
KUCHAI	.941221	-.088597	.175392	.50	1.00
	.365268	-.096549	.125914	.59	.68
	.201869	.433502	.204028	.97	1.14
	.509497	-.123419	.117882	.60	.80
KULIM	1.156742	.270032	.178666	.56	1.47
	.456283	-.124436	.127958	1.79	1.69
	.177370	.347332	.245711	1.14	1.12
	-.016246	.054224	.171721	.66	.52
L&G	.539078	.262984	.219595	1.08	1.31
	.311282	.325321	.152396	1.00	1.25
	.570223	.199694	.263932	1.48	1.47
	.815116	.223089	.143851	1.80	2.20
LIEHOE	-.152447	-.122016	.259686	.71	.29
	-.189476	.219504	.162510	.93	.73
	.022216	.670906	.234252	1.70	1.63
	.206746	.107595	.130858	1.53	1.46
LION	.137237	.526168	.224532	.82	1.03
	.089964	.007186	.124759	.93	.82
	-.047292	.179676	.096666	.79	.77
	.335188	.016444	.041041	.78	1.05
MAGNUM	.226660	.490716	.257780	1.74	1.62
	.088094	.319681	.154669	1.10	1.15
	-.004634	.466246	.233713	1.29	1.20
	.174011	.363070	.138628	1.35	1.48
MALEX	.147963	.225735	.257780	.24	.41
	-.011337	-.371122	.149475	.99	.47
	.327714	-.316377	.273119	.37	.24
	.212398	.060300	.103484	.30	.47

Appendix 2 Continued

COMPANY	BLAG	BLEAD	COR	BETA	ADJBETA
MARUICH	.688936	.010045	.204722	.35	.75
	.035398	.348061	.141067	.61	.78
	.215614	.060014	.260790	.19	.31
	.094204	.138731	.130174	.15	.30
MAS	.235409	.156224	.168687	.99	1.03
	-.091015	.167491	.122078	.80	.71
	.178893	.099926	.211865	.58	.60
	.277179	-.081560	.120376	.68	.70
MAYBK	.355306	.597104	.400440	.88	1.02
	.450719	.315030	.263802	1.29	1.35
	.252857	.164921	.298941	.99	.88
	.284509	.294856	.181316	1.07	1.21
MBA	.277415	-.719480	.205649	-.69	-.80
	-.163230	.002273	.113297	.90	.60
	.441546	.133704	.211021	.64	.86
	-.163876	-.045026	.059219	.23	.02
MBF	.070421	-.298325	.173110	1.60	1.02
	-.012204	-.017512	.120525	1.42	1.12
	.064811	.395948	.212912	1.39	1.30
	.455983	.259156	.109508	1.38	1.72
MCBH	-.579544	-.301610	.085805	1.36	.41
	-.552903	.500374	.065193	2.01	1.73
	.209702	.107259	.068547	1.82	1.88
	.116506	.408877	.039207	1.59	1.97
MCEMENT	.414850	.497107	.372178	.80	.98
	.193761	.015334	.164457	.81	.77
	.259048	.351320	.371428	.58	.69
	-.027441	.071453	.124569	.78	.66
MECHMAR	-.152780	.223029	.178666	1.00	.79
	.066219	-.049513	.140676	2.07	1.62
	-.037712	.644970	.230917	1.76	1.62
	.310779	-.294282	.068638	1.37	1.22
MFCB	.237116	-.205349	.094394	1.03	.89
	-.250404	.493849	.077727	1.86	1.82
	-.102418	.827131	.284194	1.42	1.37
	.178908	.154062	.048724	1.15	1.35
MFLOUR	.265830	-.405873	.243756	.15	.01
	.162013	-.021463	.152698	1.61	1.34
	.195514	.480031	.246412	1.34	1.35
	.727314	.077863	.143851	1.10	1.48
MHS	.308409	-.783165	.201413	.34	-.09
	.421970	.040124	.162510	1.38	1.39
	-.026859	.581313	.235156	1.49	1.39
	.117568	.117693	.083369	1.50	1.48
MISC	.088519	.149342	.269247	.54	.51
	.002768	.253392	.159417	1.12	1.05
	.194043	.008550	.260271	.68	.58
	.074338	.019206	.161712	.44	.40
MOX	.249570	.343222	.175392	1.53	1.57
	-.013359	.048202	.124759	1.43	1.17
	.296367	.198299	.213127	1.41	1.34
	-.117494	-.035587	.134287	1.19	.81
MPI	.463771	.401596	.269247	.51	.90
	.184947	.132803	.162510	.74	.80
	.422324	.112700	.305434	.59	.70
	.020408	-.005727	.119417	.85	.69

Appendix 2 Continued

COMPANY	BLAG	BLEAD	COR	BETA	ADJBETA
MUJB	.446818	.305388	.369924	1.14	1.09
	-.022514	.127640	.147698	1.05	.89
	.573107	.584551	.361348	1.32	1.44
	.271709	.210416	.140403	.90	1.08
MATA	.008485	.067340	.031492	1.11	1.12
	.167106	.143785	.174319	.40	.53
	.167325	.078445	.160695	1.11	1.02
	.126839	.209579	.055829	.98	1.18
MWE	.373792	-.132112	.169006	1.17	1.06
	.025166	.024866	.119395	1.42	1.18
	.135993	.565907	.201817	1.60	1.64
	.274113	.020248	.126461	1.48	1.42
NANYANG	.278049	.386723	.270273	.55	.79
	-.036591	.006781	.156645	.65	.48
	.095814	.485617	.278478	.49	.69
	-.197532	-.186944	.124244	.78	.32
MEGARA	.284701	.022237	.277359	.11	.27
	.028724	-.046732	.146876	.98	.74
	.291925	.070355	.329883	.35	.43
	.086921	-.142951	.132663	.46	.32
MSTP	.865316	.763919	.394779	1.18	1.57
	.420496	.283097	.377418	.82	.87
	.341359	.288646	.285881	.70	.85
	.337738	-.098716	.155105	.52	.58
OYLIND	.153626	.123870	.270273	.32	.39
	.238037	.428863	.156645	1.16	1.39
	.353232	.259232	.278478	.58	.76
	.306444	-.015398	.124244	.33	.50
PALMCO	-.061088	-.015793	.102409	1.23	.96
	.029948	.108210	.104873	1.51	1.36
	.426495	.789957	.358948	1.30	1.46
	.139629	.163459	.130493	.70	.79
PBB	.574682	.708074	.373225	1.33	1.50
	-.080792	.066388	.154869	1.28	.96
	.229301	.516028	.305434	.76	.94
	.278581	.035869	.104038	.82	.94
PCHEM	.270402	-.268035	.287406	.64	.41
	-.026599	.139023	.120538	.53	.52
	.285834	.344685	.203807	1.38	1.43
	.480973	.306201	.120151	1.68	1.99
PERLIS	.643221	-.044528	.215515	.62	.85
	.129998	.225669	.146229	.83	.92
	.082741	.114512	.091451	.22	.36
	-.249681	.008489	.059463	.67	.38
PGKALE	.048737	.056602	.137177	1.20	1.02
	-.002125	.275285	.122839	1.53	1.45
	.178555	.251310	.098887	.85	1.07
	.179923	-.458204	.045669	.24	-.03
PMI	.404202	.418029	.165983	1.60	1.82
	-.080845	-.025900	.062753	1.77	1.48
	.096238	.536620	.212912	1.63	1.59
	-.040587	.182819	.056589	.88	.91
PPERAK	.180020	-.006690	.372902	.12	.17
	.070082	.300962	.148462	.61	.76
	.350360	.499000	.305434	.61	.91
	.020420	-.044400	.128043	.59	.45

Appendix 2 Continued

COMPANY	BLAG	BLEAD	COR	BETA	ADJBETA
RAHMAN	.304812	-.104164	.219595	.27	.33
	-.048032	-.205751	.140002	2.19	1.51
	-.115723	.826514	.263255	1.69	1.57
	.297924	.248001	.115343	1.87	1.96
RENONG	.068475	-.460483	.096462	2.13	1.46
	.117914	.362179	.129422	1.55	1.61
	.308101	.174683	.091933	1.30	1.50
	.245899	-.104235	.056301	1.31	1.31
RESORT	.220979	.544060	.270273	.96	1.12
	.192073	-.092049	.141067	.86	.75
	.270008	.474017	.269723	1.10	1.20
	.457828	.266086	.128227	1.04	1.41
RHB	.508366	-.175599	.065994	.90	1.09
	.173334	.096753	.078809	1.54	1.57
	.087935	.122668	-.040128	1.72	2.10
	.070885	-.093111	-.061420	1.11	1.24
ROTHM	.314548	.478119	.205454	.93	1.22
	-.111274	-.146525	.158288	.54	.21
	.071085	.116446	.230917	.52	.48
	.054709	.182126	.152872	.47	.54
RVIEW	.181197	.439291	.198054	.82	1.03
	.075688	-.242697	.126964	1.44	1.02
	.394808	.483169	.219979	1.34	1.54
	.457841	.032712	.129250	.67	.92
SANYO	.164772	-.172118	.213599	.75	.52
	.096602	-.009552	.141767	.44	.41
	.445738	.290902	.213127	1.24	1.39
	-.115733	.277861	.109508	1.44	1.31
SDRED	-.378621	.424247	.045843	2.04	1.91
	-.259489	-.176242	.043399	2.23	1.65
	.261476	.561406	.176651	1.76	1.91
	.273036	-.309844	.055829	1.43	1.26
SEADEV	.614605	-.031152	.102212	1.09	1.39
	-.008385	-.035315	.118880	2.02	1.60
	.007492	.601251	.213867	1.81	1.70
	.355389	.194952	.122046	1.44	1.60
SHELL	.061924	-.023364	.371206	.24	.16
	.105275	.002733	.148462	.58	.53
	.029904	.294149	.305434	.49	.51
	.271706	.264642	.180369	.64	.86
SITATT	-.149811	-.057122	.033331	1.34	1.06
	.152496	.345509	.092311	1.73	1.88
	-.413885	.043767	.060572	2.16	1.60
	-.020547	.367302	.045659	1.97	2.12
SJA	.212670	-.577801	.020917	1.60	1.19
	.039067	.376673	.129427	1.65	1.64
	-.081317	.559128	.176301	1.43	1.41
	.135774	-.582316	.056589	1.21	.69
SPROP	.089472	-.296494	.264500	1.72	.99
	-.283029	-.079376	.154669	1.67	1.00
	.131822	.638321	.267447	1.50	1.48
	-.038039	.284810	.117088	1.49	1.41
TAIPIN	.869368	-.391973	.134970	.23	.55
	.428951	-.174330	.164176	.91	.88
	-.081093	.199583	.113915	1.11	1.00
	-.303378	.371547	.041929	1.09	1.06

Appendix 2 Continued

COMPANY	BLAG	BLEAD	COR	BETA	ADJBETA
TCHONG	.349665	.811635	.243756	1.46	1.97
	.185096	-.043833	.158687	1.40	1.17
	.194440	.357376	.267447	1.13	1.09
	.449522	.204415	.143851	1.23	1.46
TIME	.227481	.211072	.162181	1.37	1.37
	.091429	.239926	.120538	1.21	1.24
	.290841	.336897	.233713	1.14	1.20
	.213414	.431592	.122779	1.95	2.09
TRIND	.289636	-.410796	.255274	.55	.28
	.248121	-.040177	.122078	1.12	1.07
	.208982	.621769	.237361	1.18	1.36
	.252239	.305836	.122534	1.27	1.47
TV3	.181067	.035979	.181182	.61	.61
	.805641	.135836	.245004	.57	1.01
	.760161	.481740	.285881	1.23	1.57
	.119106	-.139115	.181316	.33	.22
UAC	.698321	.241627	.376764	.34	.73
	.158484	-.082242	.142994	1.23	1.02
	.347557	.558934	.353536	1.24	1.26
	.392127	.003000	.128043	.75	.91
UMCCA	.439797	.030128	.039217	1.19	1.54
	.352215	-.240719	.076492	1.62	1.51
	.050314	.248350	.168089	1.30	1.20
	-.140897	.138979	.068638	1.82	1.60
UTDPLT	.350742	.074474	.371206	.77	.69
	.188197	-.122078	.147698	2.10	1.67
	.117881	.768034	.366437	1.20	1.20
	-.083936	-.061957	.129433	1.13	.79

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