THE PRICING OF EQUITY ON THE LONDON STOCK EXCHANGE: SEASONALITY AND SIZE PREMIUM

by

Albert CORHAY*
Gabriel HAWAWINI**
Pierre MICHEL***

N° 86 / 20

* Albert CORHAY, University of Liège

** Gabriel HAWAWINI, INSEAD, Fontainebleau

*** Pierre MICHEL, University of Liège

Director of Publication:

Charles WYPLOSZ, Associate Dean for Research and Development

Printed by INSEAD, Fontainebleau France

THE PRICING OF EQUITY ON THE LONDON STOCK EXCHANGE: SEASONALITY AND SIZE PREMIUM

Albert Corhay
University of Liège

Gabriel Hawawini
INSEAD, Fontainebleau

Pierre Michel
University of Liège

June 1986

The authors would like to thank Ms. Jayne Lockwood for typing the manuscript. Forthcoming in Stock Market Anomalies, E. Dimson (Ed), Cambridge University Press.

THE PRICING OF EQUITY ON THE LONDON STOCK EXCHANGE: SEASONALITY AND SIZE PREMIUM

Albert Corhay, Gabriel Hawawini and Pierre Michel

1. Purpose of the study

In this study we examine the relationship between average monthly returns and risk for portfolios of common stocks traded on the London Stock Exchange (LSE). We test the validity of the Capital Asset Pricing Model (Sharpe (1964), Black (1970)) using a methodology similar to that of Fama and MacBeth (1973). To the best of our knowledge, this is the first empirical test of the CAPM on the LSE that uses the Fama-MacBeth methodology.

Using the LSE data we also investigate two phenomena recently observed on the New York Stock Exchange (NYSE). The first is the size effect discovered by Banz (1981). He showed that small capitalization firms earn, on average, higher risk-adjusted returns than large capitalization firms[1]. The second phenomenon was documented by Tinic and West (1984, 1986). They showed that the estimated slope coefficient (risk premium) of the relationship between average returns and systematic risk on the NYSE is significantly positive only in January. During the rest of the year there is no significant relationship between average returns and systematic risk on the NYSE. In other words, the CAPM is valid only in January on the NYSE.

The rest of this paper is organized as follows. In section 2 we give a summary of our major findings. In section 3 we look at the evidence from countries other than the United Kingdom. In section 4 we describe the properties of our sample and outline the methodology we employ to perform our analysis. As pointed out earlier, we estimate the coefficient (risk premium) of the relationship between average monthly stock returns and their corresponding risk using a methodology similar to that of Fama and MacBeth (1973). We examine various specifications of the risk-return relationship. In section 5.1 we adopt the two-parameter capital asset pricing model in which the risk-measure is systematic risk (beta coefficients) and examine the seasonality of the average estimated monthly systematic risk-premia. In section 5.3 we examine the seasonality of the average estimated monthly risk premia when the risk-measure is total risk (variance of returns), unsystematic risk and skewness. In section 5.4 we look at the seasonality in the average estimated monthly coefficients of the Fama and MacBeth (1973) four-parameter model. In sections 6 and 7 we examine the size effect on the LSE. Concluding remarks are found in section 8.

2. Summary of major findings

(1) The relationship between average monthly returns and systematic risk over the entire test-period is not statistically significant (section 5.1 and table 1).

(2) The relationship between average monthly returns and systematic risk is significantly positive only in April and significantly negative only in May. An interpretation of this phenomenon is given in section 5.2 (table 1).

(3) When risk is measured by either total risk, unsystematic risk or skewness we found a significantly positive relationship between average monthly returns and risk. These relationships do, however, exhibit monthly seasonality (section 5.3 and table 2).

(4) The positive April seasonal in the systematic risk premium remains but the negative May seasonal disappears after controlling for unsystematic risk. It appears that the CAPM is valid on the LSE only in April (section 5.4 and table 3).

(5) There is a weak size effect on the LSE. This phenomenon is seasonal. May is the only month for which the size effect is significant. On the LSE most of the small size premium is earned during the month of May (section 6 and tables 4 and 5).

(6) After controlling for systematic risk, the size effect is significant over the entire period as well as over April and May. After controlling for size the systematic risk premium is significantly positive in April and June. It is significantly negative in May (section 7 and table 6).

3. Evidence from other countries

At the time of this writing the evidence on estimated risk-premia seasonality is limited to the United States, the United Kingdom, France and Belgium. The U.S. evidence was briefly presented in the introductory section. The U.K. evidence is presented in this paper. Evidence on French and Belgian common stocks can be found in Corhay, Hawawini and Michel (1985, 1986). They report a significantly positive January effect in the systematic risk premium of Belgian common stocks over the 15-year period from January 1969 to December 1983. Over that same period, the systematic risk premium of French common stocks is never significant.

4. Methodology

4.1 Data

The rates of return data used in the study are drawn from the London Business School monthly returns file (Smithers (1977) (1980)). Monthly returns are calculated as logarithms of price relatives including dividend payments $(\log(P_t + D_t)/P_{t-1})$. The data begin on January 1955 and end on December 1983. The number of firms in the sample varies from a minimum of 761 to a maximum of 1674.

The market index we employed is an equally-weighted portfolio of all the securities in the sample. We have also performed our tests with a value-weighted index. Since we found that the choice of the index does not affect the results significantly, we only report our findings based on the equally-weighted index[2].

4.2 Test design

The methodology employed to estimate monthly risk premia and examine the size effect on the LSE is similar to that found in Fama and MacBeth (1973) and Banz (1981). It is carried out in three steps. An initial period of one year of monthly data is used to construct portfolios on the basis of size and risk (construction period). The following year of monthly data is employed to estimate the risk of the portfolios (with estimation period). Finally, the estimation of the risk premia and the examination of the size effect are performed over the third year of monthly data (test period). The entire procedure is then repeated after dropping the first year of data. Details are given below.

4.3 Portfolio construction

The first year of monthly data (1955) is used to construct five equally-weighted portfolios ranked on the basis of the magnitude of their year-end market capitalization (size). Each of those five size-related portfolios are then divided into four portfolios ranked on the basis of the magnitude of their beta coefficients[3]. This procedure led to a total of twenty equally-weighted portfolios constructed on the basis of both market capitalization (size) and systematic risk (beta). The total number of securities with which we constructed the portfolios varied from 761 over the period 1971-1976 to 1674 over the period 1979-1983.

4.4 Risk estimation

The second year of monthly data (1956) is used to estimate the risk of each stock in the sample. Four measures of risk are considered in this study: systematic risk (beta coefficient), total risk (variance of total returns), unsystematic risk (standard error of the residuals of the single-index market model) and skewness (the ratio of the return distribution's third moment around its mean to the distribution's standard deviation cubed). Portfolios' betas (β_p) are obtained by calculating the arithmetic average of the betas of the individual stocks that make up the portfolio. The same averaging procedure is used to calculate portfolios' total risk or variance (V_p) , portfolios' unsystematic risk (U_p) and portfolios' skewness (SK_p).

4.5 Model testing

Finally, the third year of monthly data (1957) is used to estimate the monthly risk-premia according to the following set of regressions:

$$R_{pt} = \gamma_{ot} + \gamma_{1t} \cdot \beta_{p,t-1} + \mu_{pt} \qquad (1)$$

$$R_{pt} = \gamma'_{ot} + \gamma_{2t} \cdot V_{p,t-1} + \mu'_{pt} \qquad (2)$$

$$R_{pt} = \gamma''_{ot} + \gamma_{3t} \cdot U_{p,t-1} + \mu''_{pt} \qquad (3)$$

$$R_{pt} = \gamma^{*}_{ot} + \gamma^{*}_{1t}\cdot\beta_{p,t-1} + \gamma^{**}_{1t}\cdot\beta^{2}_{p,t-1} + \gamma^{*}_{3t}\cdot U_{p,t-1} + \mu^{*}_{pt} \quad (4)$$

$$R_{pt} = \gamma'''_{ot} + \gamma_{4t}\cdot SK_{p,t-1} + \mu'''_{pt} \quad (5)$$

$$R_{pt} = \gamma^{**}_{ot} + \gamma_{5t}\cdot\log(SIZE)_{p,t-1} + \epsilon_{pt} \quad (6)$$

$$R_{pt} = \gamma^{s}_{ot} + \gamma^{s}_{1t}\cdot\beta_{p,t-1} + \gamma^{*}_{5t}\cdot\log(SIZE)_{p,t-1} + \epsilon^{s}_{pt} \quad (7)$$

in which:

R_{pt} = realized return of portfolio p in month t,

γ_{1t} = systematic risk premium in month t,

γ_{2t} = total risk premium in month t,

γ_{3t} = unsystematic risk premium in month t,

γ_{4t} = skewness premium in month t,

γ_{5t} = size premium in month t,

$\beta_{p,t-1}$ = beta of portfolio p estimated over a 12-month estimation period ending on the calendar year preceding month t and updated yearly,

$V_{p,t-1}$ = variance of portfolio p estimated over a 12 month estimation period ending on the calendar year preceding month t and updated yearly,

$U_{p,t-1}$ = unsystematic risk of portfolio p estimated over a 12-month estimation period ending on the calendar year preceding month t and updated yearly,

$SK_{p,t-1}$ = skewness coefficient (return distributions' third movement around the mean divided by the standard deviation cubed) of portfolio p estimated over a 12-month estimation period ending on the calendar year preceding month t and updated yearly,

$\log(SIZE)_{p,t-1}$ = logarithm of the market capitalization of portfolio p (market capitalization is given in units of ½ million pounds) at the end of the calendar year preceding month t and updated yearly.

Regression (1) is the standard two-parameter capital asset pricing model (Sharpe (1964), Black (1973) and Fama (1976)) according to which security holders are compensated only for bearing systematic risk. Regressions (2) and (3) are run on the theory that investors may not be fully diversified. In this case, both total risk (variance) and unsystematic risk may contribute to the pricing of securities (Levy (1978)).

Regression (4) is the Fama and MacBeth (1973) version of a four-parameter capital asset pricing model. With this specification we test for the linearity of the relationship between average returns and systematic risk (if the relationship is linear γ_{1t}^{**} should be statistically equal to zero) and for the marginal contribution of unsystematic risk to the pricing of securities (if unsystematic is diversified away it is not priced in the market and γ_{3t}^{*} should be statistically equal to zero).

Regression (5) is run to determine whether the skewness of return distributions is priced in the market. We should expect a negative relationship between average returns and skewness ($\gamma_{4t} < 0$) since investors should be willing to accept lower average returns on portfolios with positively skewed returns (Francis and Archer (1979), chapter 16).

Regression (6) is run to determine if there is a size premium on the LSE. If portfolios constructed on the basis of market capitalization at the end of the calendar year have different average returns over the following year then γ_{5t} will be different from zero. If portfolios of smaller firms outperform portfolios of larger firms then γ_{5t} will be negative. Finally, regression (7) allows us to examine the combined effect of systematic risk and size on average returns.

For each month of the 12-month test period we calculate the realized return of each one of the 20 portfolios (R_{pt}). These 20 portfolio returns are then cross-sectionally regressed on beta (regression (1)), variance (regression (2)), unsystematic risk (regression (3)), skewness (regression (5)), size(regression (6)) as well as on beta, beta squared and unsystematic risk (regression (4)) and beta and size (regression (7)). Recall that risk and size are estimated over the preceding calendar year (estimation period) and are updated every year. From the 12 cross-sectional regressions we obtain 12 monthly estimates of the market risk premia γ_1, γ_2, γ_3, γ_4, γ_1^*, γ_1^{**}, and γ_3^* and the coefficients of size γ_5 and γ_5^*.

The entire procedure is then repeated using the second year of monthly data (1956) to construct portfolios, the third year of monthly data (1957) to estimate risk and size and the fourth year of monthly data (1958) to estimate the monthly relationship between realized returns, risk and size. Dropping one year of early data and adding a new one to estimate the risk and size premia, we kept on repeating the entire procedure until we reached the year 1983. This approach provides a total of 324 monthly estimates of the risk and size premia γ_1, γ_2, γ_3, γ_4, and γ_5; 27 estimates for each of the 12 months of the year (from January 1957 to December 1983). Note that all the tests performed in this study are predictive tests since the set of independent or explanatory variables are estimated over a period that precedes the month over which portfolios' returns are calculated.

5. Evidence of monthly risk premia seasonality

5.1 Systematic risk premium seasonality (regression (1))

Evidence of seasonality in the monthly estimates of the systematic risk premia is reported in table 1. First, note that no relationship exists, on average, between monthly portfolio returns and systematic risk over the entire 27-year period from January 1957 to December 1983. Price behavior on the LSE is not consistent with the standard two-parameter capital asset pricing model.

Turning to the month-to-month results we see that April is the only month of the year in which the systematic risk premium is positive. It is equal to 1.84 percent. This is equivalent to 22 percent on an annual basis. If we remove the month of April from the data, the relationship between return and systematic risk is, on average, negative. This phenomenon is primarily the result

Table 1

Average values of the estimated coefficients of the regression

$$R_{pt} = \gamma_{ot} + \gamma_{1t} \cdot \beta_{p,t-1} + \mu_{pt}$$

based on monthly data from Jan. 57 to Dec. 83[a] using the Fama-MacBeth (1973) methodology with an equally-weighted market index.

Average over	Sample Size	$\bar{\gamma}_o$ (Intercept)	$\bar{\gamma}_1$ (Beta)
All months	324	0.0153[b] 7.59	- 0.0041 - 1.51
January	27	0.0282[b] 3.61	0.0094 0.61
February	27	0.0249[b] 5.44	- 0.0119 - 1.45
March	27	0.0087 1.49	0.0006 0.06
April	27	0.0177[b] 2.28	0.0184[b] 1.89
May	27	0.0204[b] 3.00	- 0.0207[b] - 2.84
June	27	0.0069 1.05	- 0.0148 - 1.40
July	27	0.0122 1.53	- 0.0106 - 1.10
August	27	0.0040 0.57	0.0118 1.64
September	27	0.0083 1.03	- 0.0091 - 1.35
October	27	0.0194[b] 3.19	- 0.0094 - 1.27
November	27	0.0189[b] 2.16	- 0.0153[b] - 1.91
December	27	0.0135[b] 2.96	0.0026 0.31

a. t statistics are below the average values of the estimated coefficients.

b. significant average values at the 0.05 level.

of a significantly downward sloping risk-return relationship in the month of May (the May risk premium is equal to minus 2.07 percent, that is, minus 24.84 percent on an annual basis). Clearly, the negative relationship between return and systematic risk in the month of May offsets the positive contribution of the month of April and yields a negative but statistically insignificant risk-return relationship over the entire 27-year test period.

5.2 Interpretation

The positive April effect reported above may be tax-induced. It is consistent with the tax-loss selling hypothesis. According to this hypothesis, as the end of the fiscal year approaches (March in the United Kingdom), investors can reduce their taxes by selling the stocks on which they lost money during the year. In doing so, they realize capital losses that are deductible from their taxable income. The sales of securities at the end of the fiscal year depresses prices which recover at the beginning of the next fiscal year (April) as stocks move back toward their equilibrium value. The linear and positive relationship between average returns and systematic risk in April is therefore consistent with the tax-loss selling hypothesis.

The negative May effect is consistent with the old LSE adage "sell in May and go away". According to the Investors Chronicle (1986), there is some logic behind this adage since the market winds down for the holiday season. Parliament goes quiet and many companies with March year-ends have published their final results by mid-June.

5.3 Other risk premia seasonality (regressions (2), (3) and (4))

The estimated risk premia when risk is measured by variance, unsystematic risk and skewness are reported in table 2. To save space, we do not report the estimated value of the intercepts[4]. Over the 27-year period, the three risk measures are significantly positively related to average return.

Turning to the month-to-month results, note that the total risk premium (variance) is significantly positive in January and significantly negative in August. Hence, the positive April effect in the systematic risk premium is replaced by a positive January effect

Table 2

Average values of the estimated slope coefficient of the regressions

$$R_{pt} = \gamma'_{ot} + \gamma_{2t} \cdot V_{p,t-1} + \mu'_{pt}$$

$$R_{pt} = \gamma''_{ot} + \gamma_{3t} \cdot U_{p,t-1} + \mu''_{pt}$$

$$R_{pt} = \gamma'''_{ot} + \gamma_{4t} \cdot SK_{p,t-1} + \mu'''_{pt}$$

based on monthly data from Jan. 57 to Dec. 83[a] using the Fama-MacBeth (1973) methodology with an equally-weighted market index.

Average over	Sample Size	$\bar{\gamma}_2$ (Total risk)	$\bar{\gamma}_3$ (Unsystematic Risk)	$\bar{\gamma}_4$ (Skewness)
All months	324	0.3038 [b] 1.89	0.0896 [b] 2.19	0.0338 [b] 2.36
January	27	1.4429 [b] 2.16	0.1860 1.01	0.1253 1.27
February	27	0.4746 1.09	0.1720 1.31	0.1244 [b] 2.41
March	27	- 0.3982 - 0.68	- 0.1048 - 0.73	- 0.0393 - 0.93
April	27	0.0643 0.14	- 0.0036 - 0.03	- 0.0514 0.94
May	27	0.6266 1.14	0.3338 [b] 2.57	0.0825 [b] 2.61
June	27	0.0300 0.06	0.1178 0.93	0.0104 0.19
July	27	0.9677 1.42	0.1953 1.34	0.0111 0.26
August	27	- 0.9614 [b] - 2.68	- 0.2115 [b] - 1.97	- 0.0379 - 0.96
September	27	0.2961 0.53	0.1376 1.03	0.0248 0.65
October	27	0.8932 1.49	0.2508 1.73	0.0080 0.28
November	27	- 0.0543 - 0.09	0.1317 0.82	0.0606 1.54
December	27	0.2639 0.52	- 0.1298 - 1.02	- 0.0151 - 0.43

a. t statistics are below the average values of the estimated slopes.

b. significant average values at the 0.05 level.

in the total risk premium. The unsystematic risk premium is significantly positive in May and significantly negative in August. The skewness premium is significantly positive in February and May.

A comparison of results in table 2 and table 1 indicates that unsystematic risk premia (table 2) and systematic risk premia (table 1) have opposite signs. This observation is consistent with the fact that portfolios' unsystematic risk is negatively correlated with portfolios' systematic risk on the LSE (low beta portfolios have higher unsystematic risk than high beta portfolios).

Finally, the significantly positive skewness premium reported in table 2 is not consistent with the hypothesis that investors should be willing to accept lower average returns on portfolios with positively skewed returns. A similar positive skewness effect has been observed in U.S. common stock data. See Francis and Archer (1979) for possible explanations of this phenomenon.

5.4 Seasonality in the risk premia of the four-parameter capital asset pricing model (regression (4))

Results are summarized in table 3. For the overall period unsystematic risk dominates with a significantly positive premium. This result is not consistent with security pricing according to the CAPM.

Turning to the month-to-month results we still observe a positive April effect in the systematic risk premium even after controlling for unsystematic risk. This result provides additional support to our earlier conclusion (section 4.1) that stock price behavior on the LSE is consistent with the standard CAPM only in April.

6. Evidence of a size effect (regression (6))

The relationship between average portfolio returns and the logarithm of market capitalization is given in table 4. Note first that over the 27-year period (from 1957 to 1983) the relationship is negative (indicating that small firms outperformed, on average, large firms) but it is not statistically significant.

Turning to the month-to-month results we can see that the size effect is a seasonal phenomenon. Indeed, May is the only month of the year for which there is a significant relationship

Table 3

Average values of the estimated coefficients of the regression

$$R_{pt} = \gamma^{*}_{ot} + \gamma^{*}_{1t}\cdot\beta_{p,t-1} + \gamma^{**}_{1t}\cdot\beta^{2}_{p,t-1} + \gamma^{*}_{3t}\cdot U_{p,t-1} + \mu^{*}_{pt}$$

based on monthly data from Jan. 57 to Dec. 83[a] using the Fama-MacBeth (1973) methodology with an equally-weighted market index.

Average over	Sample Size	$\bar{\gamma}^{*}_{o}$ (Intercept)	$\bar{\gamma}^{*}_{1}$ (Beta)	$\bar{\gamma}^{**}_{1}$ (Beta)^2	$\bar{\gamma}^{*}_{3}$ (Unsyst. risk)
All months	324	0.0102 [b] 3.17	- 0.0040 - 1.05	0.0001 0.10	0.0653 [b] 1.81
January	27	- 0.0003 - 0.02	0.0176 1.12	- 0.0012 - 0.28	0.3263 [b] 1.83
February	27	0.0112 0.94	- 0.0043 - 0.29	- 0.0036 - 0.58	0.2071 1.58
March	27	0.0136 1.047	- 0.0019 - 0.15	0.0016 0.29	- 0.1121 - 0.81
April	27	0.0137 1.35	0.0269 [b] 1.87	- 0.0061 - 1.24	0.0565 0.64
May	27	0.0079 0.63	- 0.0136 - 1.02	- 0.0026 - 0.47	0.1424 1.19
June	27	0.0066 0.81	- 0.0159 - 0.96	- 0.0008 - 0.15	0.0143 0.18
July	27	0.0149 1.40	- 0.0267 - 1.69	0.0076 1.40	0.0428 0.34
August	27	0.0099 1.15	0.0149 1.68	- 0.0032 - 1.11	- 0.0217 - 0.23
September	27	0.0060 0.57	- 0.0109 - 1.103	0.0002 0.61	0.0334 0.25
October	27	- 0.0052 - 0.43	0.0067 0.56	- 0.0061 - 1.21	0.2142 1.60
November	27	0.0201 1.54	- 0.0267 [b] - 2.22	0.0057 1.49	- 0.0305 - 0.22
December	27	0.0239 [b] 2.74	- 0.0147 [b] - 1.46	0.0100 [b] 2.34	- 0.0893 - 0.85

a. t statistics are below the average values of the estimated coefficients.

b. significant average values at the 0.05 level.

Table 4

Average values of the estimated coefficients of the regression

$$R_{pt} = \gamma^{**}_{ot} + \gamma_{5t}.\log(SIZE)_{p,t-1} + \epsilon_{pt}$$

based on monthly data from Jan. 57 to Dec. 83[a] using the Fama-MacBeth (1973) methodology with an equally-weighted market index.

Average over	Sample Size	$\bar{\gamma}^{**}_{o}$ (Intercept)	$\bar{\gamma}_{5}$ (Size)
All months	324	0.0244 3.70	- 0.0009 - 1.74
January	27	0.0246 0.67	0.0008 0.26
February	27	0.0402 1.81 [b]	- 0.0018 - 1.05
March	27	0.0025 0.11	0.0005 0.32
April	27	0.0213 0.94	0.0009 0.56
May	27	0.0690 3.92 [b]	- 0.0045 - 3.51 [b]
June	27	0.0249 1.21	0.0021 - 1.31
July	27	0.0363 2.01 [b]	- 0.0023 - 1.69
August	27	- 0.0146 - 0.74	0.0020 1.35
September	27	0.0337 1.88 [b]	- 0.0022 - 1.54
October	27	0.0487 2.20 [b]	- 0.0026 - 1.56
November	27	0.0267 1.10	- 0.0014 - 0.82
December	27	- 0.0201 - 0.87	0.0024 1.54

a. t statistics are below the average values of the estimated coefficients.

b. significant average values at the 0.05 level.

between average returns and size. The relationship is negative indicating that most of the small size premium is earned during the month of May. These results are consistent with the earlier findings of Levis (1985).

7. The risk-adjusted size-effect and risk-premia seasonality (regression (7))

What is the relationship between average returns and size after controlling for systematic risk? If small firms were riskier than large firms the risk differential would explain the difference in returns. This is not the case. On the contrary, the results in table 5 indicate that on the LSE smaller firms have smaller systematic risk than larger firms. Similar findings are also reported by Levis (1985).

The relationship between average returns and size after controlling for systematic risk can also be examined with the estimated coefficients of regression (7) given in table 6. Over the 27-year period the size effect is significantly negative after controlling for systematic risk. Recall that the size effect without risk adjustment was found negative but not statistically significant (regression (2)).

Turning to the month-to-month results we note the following: (1) after adjusting for size, the systematic risk premium is significantly positive only in April and significantly negative in May and June. These results are consistent with those reported in section 4.1, table 1 where no adjustment for size was made; (2) after adjusting for systematic risk, the size effect is significant only in May and it is negative. This result is consistent with that reported in section 5 table 4 where no adjustment for systematic risk was made.

Note that in May we have both a negative systematic risk premium and a negative size effect. As a result, small firms have, on average, positive returns in May (see table 5). As pointed out by Levis (1985), the city's old saying "sell in May and go away" seems to be applicable only to larger firms. This conclusion is supported by the results given in the last column of table 5.

Table 5

Characteristics of the five size-portfolios over the period Jan. 57 to Dec. 83[a]

Portfolio size	Average market value in £ million	Average monthly beta	Average monthly return (all months)	Average return in May
Largest	99.59	1.09	0.0095 (3.02)[b]	- 0.0060 (- .67)
2	14.30	0.97	0.0114 (3.82)[b]	- 0.0002 (- 0.02)
3	5.14	0.82	0.0110 (4.06)[b]	- 0.0020 (- .26)
4	2.03	0.68	0.0122 (5.24)[b]	- 0.0029 (- .46)
Smallest	0.66	0.51	0.0144 (7.04)[b]	0.0096 (1.96)[b]

a. t statistics are below the average returns.

b. significant average values at the 0.05 level.

Table 6

Average values of the estimated coefficients of the regression

$$R_{pt} = \gamma^{s}_{ot} + \gamma^{s}_{1t} \cdot \beta_{p,t-1} + \gamma^{*}_{5t} \cdot \log(\mathrm{SIZE})_{p,t-1} + \epsilon^{s}_{pt}$$

based on monthly data from Jan. 57 to Dec. 83[a] using the Fama-MacBeth (1973) methodology with an equally-weighted market index.

Average over	Sample Size	$\bar{\gamma}^{s}_{o}$ (Intercept)	$\bar{\gamma}^{s}_{1}$ (Beta)	$\bar{\gamma}^{*}_{5}$ (Size)
All months	324	0.0270 4.26	- 0.0032 - 1.44	- 0.0008 [b] - 1.96
January	27	0.0628 [b] 1.98	0.0169 1.52	- 0.0028 - 1.32
February	27	0.0388 [b] 1.96	- 0.0067 - 1.16	- 0.0013 - 0.89
March	27	0.0093 0.40	- 0.0008 - 0.10	0.0001 0.04
April	27	0.0258 1.25	0.0157 [b] 2.10	- 0.0004 [b] - 2.13
May	27	0.0538 [b] 2.95	- 0.0150 [b] - 2.61	- 0.0025 [b] - 2.14
June	27	0.0098 0.54	- 0.0190 [b] 2.55	0.0001 0.08
July	27	0.0286 1.27	- 0.0129 - 1.54	- 0.0009 - 0.68
August	27	- 0.0058 - 0.32	0.0037 0.68	0.0012 0.97
September	27	0.0269 1.33	- 0.0064 - 0.96	- 0.0014 - 1.03
October	27	0.0439 [b] 1.88	- 0.0023 - 0.33	- 0.0021 - 1.26
November	27	0.0314 1.31	- 0.0123 - 1.52	- 0.0009 - 0.57
December	27	- 0.0012 - 0.06	0.0012 0.18	0.0010 0.77

a. t statistics are below the average values of the estimated coefficients.

b. significant average values at the 0.05 level.

8. Concluding remarks

We reported evidence of seasonality in the estimated coefficients of the relationship between average returns and risk on the LSE. We also reported the presence of a size effect which is itself seasonal. We can conclude from this evidence that the capital asset pricing model does not provide an adequate description of the historical relationship between average returns and risk on the LSE over the 27-year period covered by this study (1957-1983).

This conclusion can be interpreted either as a failure of the two-parameter capital asset pricing model to provide an accurate representation of how securities are priced on the LSE over the sample period or, according to Roll (1977), as a proof that the capital asset pricing model cannot be tested unambiguously without knowing (and using) the exact composition of the true market portfolio.

Footnotes

1. See also Keim (1983) and Roll (1983).

2. Results based on the value-weighted index are available on request from the second author.

3. The beta coefficient of individual securities was estimated with the single-index market model (Sharpe (1963), Fama (1976)) using 12 monthly security returns and the corresponding 12 monthly returns on the equally-weighted index.

4. Complete results are available on request from the second author.

References

1. BANZ, R. (1981) "The relationship between return and market value of common stock", Journal of Financial Economics, 9 (June), 3-18.

2. BLACK, F. (1970) "Capital market equilibrium with restricted borrowing", Journal of Business, 45 (July), 445-455.

3. CORHAY, A., G. HAWAWINI and P. MICHEL (1985) "Seasonality in the risk-return relationship: Some international evidence", working paper (November), INSEAD, Fontainebleau (France).

4. CORHAY, A., G. HAWAWINI and P. MICHEL (1986) "Risk-premia seasonality in U.S. and European equity markets", working paper (February), INSEAD, Fontainebleau (France).

5. FAMA, E. (1976) Foundations of Finance, Basic Books: New York.

6. FAMA, E. and J. MACBETH (1973) "Risk, return and equilibrium: Empirical tests", Journal of Political Economy, 71 (May/June), 607-636.

7. FRANCIS, J. and S. ARCHER (1979) Portfolio Analysis, Prentice-Hall, Inc. New Jersey.

8. HAWAWINI, G. (1984) European Equity Markets: Price Behavior and Efficiency, Salomon Brothers Center for the Study of Financial Institutions, Graduate School of Business Administration, New York University, Monograph 4/5.

9. Investors Chronicle (1986) "Charts, theories and systems", 75 (3-9 January), 58.

10. KEIM, D. (1983) "Size-related anomalies and stock return seasonality: Further empirical evidence", Journal of Financial Economics, 12 (June), 13-22.

11. LEVIS, M. (1985) "Are small firms big performers?", Investment Analyst, 76 (April), 21-27.

12. LEVY, H. (1978) "Equilibrium in an imperfect market: A constraint on the number of securities in the portfolio", American Economic Review, 68 (September), 643-658.

13. ROLL, R. (1977) "A critique of the asset pricing theory's test", Journal of Financial Economics, 4 (March), 129-176.

14. ROLL, R. (1983) "The turn-of-the-year effect and the return premia of small firms", Journal of Portfolio Management, 9 (Winter), 18-28.

15. SHARPE, W. (1963) "A simplified model for portfolio analysis", Management Science, 9 (January), 277-293.

16. SHARPE, W. (1964) "Capital asset prices: A theory of market equilibrium under conditions of risk", Journal of Finance, 19 (September), 425-442.

17. SMITHERS, P. (1977) "London Share Price Data base", London Business School, February.

18. SMITHERS, P. (1980) "LBS financial database manual", London Business School, March.

19. TINIC, S. and R. WEST (1984) "Risk and return: January versus the rest of the year", Journal of Financial Economics, 13 (December), 561-574.

20. TINIC, S. and R. WEST (1986) "Risk, return, and equilibrium: A revisit", Journal of Political Economy), 94 (February), 126-147

LIST OF INSEAD RESEARCH WORKING PAPERS

80/01 **"Identifying cognitive style determinants of retail patronage,** by Christian PINSON, Arun K. JAÏN and Naresh K. MALHOTRA, January 1980.

80/02 **"Dimensions culturelles des conceptions de management - une analyse comparative internationale"**, par André LAURENT, Février 1980.

80/03 **"Cognitive style and effective communication"**, by Arun K. JAÏN, Naresh K. MALHOTRA and Christian PINSON, December 1979.

80/04 **"Accomodative cognitive style differences in consumer reduction of alternatives"**, by Naresh K. MALHOTRA, Christian PINSON and Arun K. JAÏN, October 1979.

80/05 **"Stability and reliability of part-worth utility in conjoint analysis: a longitudinal investigation"**, by Arun K. JAÏN, Naresh K. MALHOTRA and Christian PINSON, September 1979.

80/06 **"The expected future spot exchange rate, the forward rate, and the trade balance"**, by Charles A. WYPLOSZ, March 1980.

80/07 **"Decline and adjustment: public intervention strategies in the European clothing industries"**, by José de la TORRE, July 1980.

80/08 **"The uncommon market: European policies towards a crisis industry - clothing in the 1970's"**, by José de la TORRE and Michel BACCHETTA, May 1980.

80/09 **"STRATPORT: a decision support system for strategic planning"**, by Jean-Claude LARRECHE and V. SRINIVASAN, April 1980, Revised October 1980.

80/10 **"A new approach to market segmentation strategy: a banking application"**, by Arun K. JAÏN, Christian PINSON and Naresh K. MALHOTRA, March 1980.

80/11 **"The exchange and interest rate term structure under risk aversion and rational expectations"**, by Charles A. WYPLOSZ, Revised Version, September 1980.

80/12 **"Individual cognitive differences in MDS analysis of perceptions"**, by Arun K. JAÏN, Naresh K. MALHOTRA and Christian PINSON, July 6-12, 1980.

80/13 **"STRATPORT: A model for the evaluation and formulation of business portfolio strategies"**, by Jean-Claude LARRECHE and V. SRINIVASAN, April 1980, Revised November 1980.

80/14 **"Les styles cognitifs : une nouvelle approche de la segmentation des marchés"**, par Christian PINSON, Naresh K. MALHOTRA and Arun K. JAÏN, Septembre 1980.

80/15 **"Cognitive styles: a new approach to market segmentation"**, by Christian PINSON, Naresh K. MALHOTRA and Arun K. JAÏN, March 1980.

81/01 **"Eurobanking, open market operations and the monetary base"**, by Herwig M. LANGOHR, August 1980.

81/02 **"Alternative approaches to the theory of the banking firm: a note"**, by Herwig M. LANGOHR, September 1980.

81/03 **"Why does beta shift when the length of securities returns varies?"**, by Gabriel A. HAWAWINI, December 1980.

81/04 **"Forward market and the cooperative firm"**, by Gabriel A. HAWAWINI, January 1981.

81/05 **"On some propositions regarding the behavior of the labor-managed firm under uncertainty"**, by Gabriel A. HAWAWINI, January 1981.

81/06 **"Impact of the investment horizon on the association between securities' risk and return: theory and tests"**, by Gabriel A. HAWAWINI and Ashok VORA, February 1981.

81/07 **"New evidence on beta stationarity and forecast for Belgian common stocks"**, by Gabriel A. HAWAWINI and Pierre A. MICHEL February 1981.

81/08 **"Industrial policy in the European Economic Community: crisis and change"**, by Kenneth S. COURTIS, June 1980.

81/09 **"Dogmatism as a moderator of banking behavior and attitudes"**, by Arun K. JAÏN, Christian PINSON and Naresh K. MALHOTRA, March 1981.

81/10 **"Investment horizon, diversification, and the efficiency of alternative beta forecasts"**, by Gabriel A. HAWAWINI and Ashok VORA, March 1981.

81/11 **"Organizational development & change"**, by Claude FAUCHEUX, Gilles AMADO and André LAURENT, April 1981.

81/12 **"The pricing of risky assets on the Belgian stock market"**, by Gabriel A. HAWAWINI and Pierre A. MICHEL, May 1981.

81/13 **"A test of the generalized capital asset pricing model"**, by Gabriel A. HAWAWINI and Ashok VORA, May 1981.

81/14 **"On the history of yield approximations"**, by Gabriel A. HAWAWINI and Ashok VORA, May 1981.

81/15 **"Pitfalls of the global product structure"**, by William H. DAVIDSON and Philippe C. HASPESLAGH, May 1981.

81/16 **"Adjusting beta estimates: real gains or illusions?"**, by Gabriel A. HAWAWINI and Ashok VORA, June 1981.

81/17 **"Do European industrial marketers budget differently? an international comparison via the advisor model"**, by David WEINSTEIN and Gary L. LILIEN, June 1981.

81/18 **"The internationalisation of manufacturing in the automobile industry - some recent trends"**, by Yves L. DOZ, April 1981.

81/19 **"Portfolio planning: use and usefulness"**, by Philippe C. HASPESLAGH, May 1981.

81/20 **"Production decisions in the mixed firm"**, by Claude J. VIALLET, October 1981.

81/21 **"Foreign investment and economic development: conflict and negotiation"**, by José de la TORRE, April 1981.

81/22 **"Forecasting country political risk"**, by José de la TORRE and David H. NECKAR, March 1981.

81/23 **"The impact of inflation on real variables: a general equilibrium approach"**, by Antonio M. BORGES, November 1981.

81/24 **"An assessment of the risk and return of French common stocks"**, by Gabriel A. HAWAWINI, Pierre A. Michel and Claude J. VIALLET, November 1981.

81/25 **"Mode de vie et style de vie : quatre observations sur le fonctionnement des termes"**, par Jean-François BERNARD-BECHARIES et Christian PINSON.

81/26 **"Simulating an oil shock with sticky prices"**, by Francesco GIAVAZZI, Mehmet ODEKON and Charles A. WYPLOSZ, November 1981.

81/27 **"Decomposing the impact of higher energy prices on long-term growth"**, by Antonio M. BORGES and Lawrence H. GOULDER.

81/28 **"Forecasting for industrial products"**, by David WEINSTEIN.

82/01 **"Estimating and adjusting for the intervalling-effect bias in beta"**, by Kalman J. COHEN, Gabriel A. HAWAWINI, Steven F. MAIER, Robert A. SCHWARTZ and David K. WHITCOMB, February 1980, Revised October 1981.

82/02 **"Friction in the trading process and the estimation of systematic risk"**, by Kalman J. COHEN, Gabriel A. HAWAWINI, Steven F. MAIER, Robert A. SCHWARTZ and David K. WHITCOMB, November 1981.

82/03 **"On the mathematics of Macaulay's duration: a note"**, by Gabriel A. HAWAWINI, December 1981.

82/04 **"Systematic risk, the investment horizons and the market index: an analytical examination"**, by Gabriel A. HAWAWINI and Ashok VORA, December 1981.

82/05 **"Why beta estimates depend upon the measurement interval"**, by Gabriel A. HAWAWINI, January 1982.

82/06 **"Nationalization, compensation and wealth transfer: an empirical note about the French experience"** by Herwig M. LANGOHR and Claude J. VIALLET, 1981/1982.

82/07 **"The Keynesian and classical determination of the exchange rate"**, by Emil-Maria CLAASSEN, May 1982.

82/08 **"The real exchange rate, the current account and the speed of adjustment"**, by Francesco GIAVAZZI and Charles A. WYPLOSZ, April 1982.

82/09 **"Simulation: a complementary method for research on strategic decision making processes"**, by Danielle NEES, May 1982.

82/10 **"The zero-root problem: dynamic determination of the stationary equilibrium in linear models"**, by Francesco GIAVAZZI and Charles A. WYPLOSZ, August 1982.

82/11 **"The theory of risk aversion and liquidity preference: a geometric exposition"**, by Gabriel A. HAWAWINI.

82/12 **"The effect of production uncertainty on the labor-managed firm"**, by Gabriel A. HAWAWINI and Pierre A. Michel.

82/13 **"On the independence between deposit and credit rates"**, by Jean DERMINE, September 1982.

82/14 **"Entrepreneurial activities of INSEAD MBA graduates"**, by Lister VICKERY, October 1982.

82/15 **"Proportional vs. logarithmic models of asset pricing"**, by Gabriel A. HAWAWINI, July 1982.

82/16 **"Capital controls: some principles and the French experience"**, by Emil-Maria CLAASSEN and Charles A. WYPLOSZ, October 1982.

82/17 **"The third world's campaign for a new international economic order"**, by Jan MURRAY, October 1982.

82/18 **"Extremity of judgment and personality variables: two empirical investigations"**, by Naresh K. MALHOTRA, Arun K. JAIN and Christian PINSON, April 1982. Revised July 1982.

82/19 **"Managerial judgment in marketing: the concept of expertise"**, by Jean-Claude LARRECHE and Reza MOINPOUR, Revised September and December 1982.

82/20 **"Uncertainty and the production decisions of owner-managed and labor-managed firms"** by Gabriel A. HAWAWINI, September 1982.

82/21 **"Inflation, taxes and banks' market values"**, by Jean DERMINE, January 1983.

82/22 **"Bank regulation and deposit insurance: adequacy and feasibility"**, by Jean DERMINE, February 1983 (second draft).

82/23 **"Pour une étude critique du différentiel sémantique"**, par Christian PINSON, Avril 1982.

83/01 **"Comparative financial structures: the impact of equity in bank portfolios"**, by Herwig M. LANGOHR, September 1983.

84/01 **"A technological life-cycle to the organisational factors determining gatekeeper activities"**, by Arnoud DE MEYER, November 1983.

84/02 **"La politique budgétaire et le taux de change réel"**, par Jeffrey SACHS et Charles A. WYPLOSZ, Novembre 1983.

84/03 **"Real exchange rate effects of fiscal policy"**, by Jeffrey SACHS and Charles A. WYPLOSZ, December 1983.

84/04 **"European equity markets: a review of the evidence on price behavior and efficiency"**, by Gabriel A. HAWAWINI, February 1984.

84/05 **"Capital controls and balance of payments crises"**, by Charles A. WYPLOSZ, February 1984.

84/06 **"An uncertainty model of the professional partnership"**, by Gabriel A. HAWAWINI, November 1983.

84/07 **"The geometry of risk aversion"**, by Gabriel A. HAWAWINI, October 1983.

84/08 **"Risk, Return and equilibrium of the NYSE: update, robustness of results and extensions"**, by Gabriel A. HAWAWINI, Pierre MICHEL and Claude J. VIALLET, December 1983.

84/09 **"Industry influence on firm's investment in working capital: theory and evidence"**, by Gabriel A. HAWAWINI, Claude J. VIALLET and Ashok VORA, January 1984.

84/10 **"Impact of the Belgian Financial Reporting Act of 1976 on the systematic risk of common stocks"**, by Gabriel A. HAWAWINI and Pierre A. MICHEL, January 1984.

84/11 **"On the measurement of the market value of a bank"**, by Jean DERMINE, April 1984.

84/12 **"Tax reform in Portugal: a general equilibrium analysis of the introduction of a value added tax"**, by Antonio M. BORGES, December 1984.

84/13 **"Integration of information systems in manufacturing"**, by Arnoud DE MEYER and Kasra FERDOWS, December 1984.

85/01 **"The measurement of interest rate risk by financial intermediaries"**, by Jean DERMINE, December 1983, Revised December 1984.

85/02 **"Diffusion model for new product introduction in existing markets"**, by Philippe A. NAERT and Els GIJSBRECHTS.

85/03 **"Towards a decision support system for hierarchically allocating marketing resources across and within product groups"**, by Philippe A. NAERT and Els GIJSBRECHTS.

85/04 **"Market share specification, estimation and validation: towards reconciling seemingly divergent views"**, by Philippe A. NAERT and Marcel WEVERBERGH.

85/05 **"Estimation uncertainty and optimal advertising decisions"**, by Ahmet AYKAC, Marcel CORSTJENS, David GAUTSCHI and Ira HOROWITZ, Second draft, April 1985.

85/06 **"The shifting paradigms of manufacturing: inventory, quality and now versatility"**, by Kasra FERDOWS, March 1985.

85/07 **"Evolving manufacturing strategies in Europe, Japan and North-America"**, by Kasra FERDOWS, Jeffrey G. MILLER, Jinchiro NAKANE and Thomas E. VOLLMANN.

85/08 **"Forecasting when pattern changes occur beyond the historical data"**, by Spyros MAKRIDAKIS and Robert CARBONE, April 1985.

85/09 **"Sampling distribution of post-sample forecasting errors"**, by Spyros MAKRIDAKIS and Robert CARBONE, February 1985.

85/10 **"Portfolio optimization by financial intermediaries in an asset pricing model"**, by Jean DERMINE.

85/11 **"Energy demand in Portuguese manufacturing: a two-stage model"**, by Antonio M. BORGES and Alfredo M. PEREIRA.

85/12 **"Defining a manufacturing strategy - a survey of European manufacturers"**, by Arnoud DE MEYER.

85/13 **"Large European manufacturers and the management of R & D"**, by Arnoud DE MEYER.

85/14 **"The advertising-sales relationship in the U.S. cigarette industry: a comparison of correlational and causality testing approaches"**, by Ahmet AYKAC, Marcel CORSTJENS, David GAUTSCHI and Douglas L. MacLACHLAN.

85/15 **"Organizing a technology jump or overcoming the technological hurdle"**, by Arnoud DE MEYER and Roland VAN DIERDONCK.

85/16 **"Commercial bank refinancing and economic stability: an analysis of European features"**, by Herwig M. LANGOHR and Antony M. SANTOMERO.

85/17 **"Personality, culture and organization"**, by Manfred F.R. KETS DE VRIES and Danny MILLER.

85/18 **"The darker side of entrepreneurship"**, by Manfred F.R. KETS DE VRIES.

85/19 **"Narcissism and leadership: an object relations perspective"**, by Manfred F.R. KETS DE VRIES and Dany MILLER.

85/20 **"Interpreting organizational texts"**, by Manfred F.R. KETS DE VRIES and Dany MILLER.

85/21 **"Nationalization, compensation and wealth transfers: France 1981-1982"**, by Herwig M. LANGOHR and Claude J. VIALLET 1, Final version July 1985.

85/22 **"Takeover premiums, disclosure regulations, and the market for corporate control. A comparative analysis of public tender offers, controlling-block trades and minority buyout in France"**, by Herwig M. LANGOHR and B. Espen ECKBO, July 1985.

85/23 **"Barriers to adaptation: personal, cultural and organizational perspectives"**, by Manfred F.R. KETS DE VRIES and Dany MILLER.

85/24 **"The art and science of forecasting: an assessment and future directions"**, by Spyros MAKRIDAKIS.

85/25 **"Financial innovation and recent developments in the French capital markets"**, by Gabriel HAWAWINI, October 1985.

85/26 **"Patterns of competition, strategic group formation and performance: the case of the US pharmaceutical industry, 1963-1982"**, by Karel O. COOL and Dan E. SCHENDEL, October 1985.

85/27 **"European manufacturing: a comparative study (1985)"**, by Arnoud DE MEYER.

86/01 **"The R & D/Production interface"**, by Arnoud DE MEYER.

86/02 **"Subjective estimation in integrating communication budget and allocation decisions: a case study"**, by Philippe A. NAERT, Marcel WEVERBERGH and Guido VERSWIJVEL, January 1986.

86/03 **"Sponsorship and the diffusion of organizational innovation: a preliminary view"**, by Michael BRIMM.

86/04 **"Confidence intervals: an empirical investigation for the series in the M-Competition"**, by Spyros MAKRIDAKIS and Michèle HIBON.

86/05 **"A note on the reduction of the workweek"**, by Charles A. WYPLOSZ, July 1985.

86/06 **"The real exchange rate and the fiscal aspects of a natural resource discovery"**, by Francesco GIAVAZZI, Jeff R. SHEEN and Charles A. WYPLOSZ, Revised version: February 1986.

86/07 **"Judgmental biases in sales forecasting"**, by Douglas L. MacLACHLAN and Spyros MAKRIDAKIS, February 1986.

86/08 **"Forecasting political risks for international operations"**, by José de la TORRE and David H. NECKAR, Second Draft: March 3, 1986.

86/09 **"Conceptualizing the strategic process in diversified firms: the role and nature of the corporate influence process"**, by Philippe C. HASPESLAGH, February 1986.

86/10 **"Analysing the issues concerning technological de-maturity"**, by R. MOENART, Arnoud DE MEYER, J. BARBE and D. DESCHOOLMEESTER.

86/11 **"From "Lydiametry" to "Pinkhamization": misspecifying advertising dynamics rarely affects profitability"**, by Philippe A. NAERT and Alain BULTEZ.

86/12 **"The economics of retail firms"**, by Roger BETANCOURT and David GAUTSCHI, Revised April 1986.

86/13 **"Spatial competition à la Cournot"**, S.P. ANDERSON and David J. NEVEN.

86/14 **"Comparaison internationale des marges brutes du commerce"**, par Charles WALDMAN, Juin 1985.

86/15 **"How the managerial attitudes of firms with FMS differ from other manufacturing firms: survey results"**, by Mihkel TOMBAK and Arnoud DE MEYER, June 1986.

86/16 **"Les primes des offres publiques, la note d'information et le marché des transferts de contrôle des sociétés"**, par B. Espen ECKBO et Herwig M. LANGOHR.

86/17 **"Strategic capability transfer in acquisition integration"**, by David B. JEMISON, May 1986.

86/18 **"Towards an operational definition of services"**, by James TEBOUL and V. MALLERET, 1986.

86/19 **"Nostradamus: a knowledge-based forecasting advisor"**, by Rob R. WEITZ.

EURO-ASIA CENTRE
CAMPUS INSEAD

Boulevard de Constance
77309 Fontainebleau Cedex, France
Telephone (1) 60 72 40 40
Telecopy (1) 60 72 40 49
Telex 690389

EAC PUBLICATIONS LIST

January 1980 - October 1985

EAC RESEARCH PAPERS

(Academic papers based on the research of EAC faculty and research staff)

n° 1 LASSERRE Philippe
A contribution to the study of entrepreneurship development in Indonesia. 1980.

n° 2 BOISOT Max and LASSERRE Philippe
The transfer of technology from European to ASEAN enterprises: strategies and practices in the chemical and pharmaceutical sectors. 1980.

n° 3 AMAKO Tetsuo
Possibilité d'un transfert à l'étranger des techniques japonaises de gestion du personnel: le cas français. 1982.

n° 4 LEHMANN Jean-Pierre
Japanese management in Germany. 1982.

n° 5 LEHMANN Jean-Pierre
La gestion japonaise en Allemagne. 1982.

n° 6 AHMAD Reyaz
Japanese investments in ASEAN. 1983.

n° 7 SCHUTTE Hellmut
Unternehmensstrategische Aspekte der internationalen Expansion mittel ständischer Unternehmen. 1983.

n° 8 SCHUTTE Hellmut
Wirtschaftliche Kooperation zwischen den ASEAN - Ländern und Nordrhein-Westfalen - Hemmungsfaktoren und Chancen für die deutsche wirtschaft. 1983.

n° 9 RABU Patrick
La présence française en Thaïlande. 1983.

n° 10 SPRECKLEY Bridget
South Korean chemical industry opportunities for foreign firms. 1983.

n° 11 SCHMITLIN Anne
La population active chinoise non-agricole. 1983.

n° 12 CUNNINGHAM Marc
Marketing and distribution for multinational companies in Indonesia: an overview. 1983.

n° 13 CHAPON Marie-Claude
Conditions de travail en Corée du Sud. 1984.

n° 14 ISHIYAMA Yoshihide
The political economy of liberalisation of the financial system in Japan. 1984.

n° 15 CHAPON Marie-Claude
Education in Korea. 1984.

n° 16 SCHÜTTE Hellmut
Exportfreihandelszonen - schwindende Attraktivität durch neue Produktionstechnologien. 1984.

n° 17 LASSERRE Philippe
Singapour comme centre régional. L'experience d'entreprises françaises. 1985.

n° 18 Von KIRCHBACH Friedrich
Patterns of export channels to developing Asia. 1984.

n° 19 MITTER Rajan
A survey of European business in India. 1984.

n° 20 SCHMITLIN Anne
Biens de production et biens de consommation en Chine. 1984.

n° 21 SCHMITLIN Anne
Les investissements étrangers en Chine. 1985.

EAC BRIEFING PAPERS

(Short synopses by EAC faculty and research staff)

n° 1 BOISOT Max and LASSERRE Philippe
Strategies and practices of transfer of technology from European to ASEAN enterprises. 1980.

n° 2 HEADLEY Stephen
The partners of foreign investors in Indonesia: the tip of the ethnic iceberg. 1980.

n° 3 HEADLEY Stephen
Foreword to government-business relations in Indonesia. 1980.

n° 4 HEADLEY Stephen
Personnel management in Indonesia: How ?. 1980.

n° 5 HEADLEY Stephen
Can you work for Honda and remain yourself ? The cultural dimension of Indonesian management. 1980.

n° 6 CONWAY Bryony
The context of management development in Malaysia. 1980.

n° 7 CONWAY Bryony
Racial balance in management in Malaysia. 1980.

n° 8 CONWAY Bryony
Appropriate education for management in Malaysia. 1981.

n° 9 CONWAY Bryony
Foreign enterprise and management development in Malaysia. 1981.

n° 10 CONWAY Bryony
The Chinese Malaysian enterprise. 1982.

EAC REPRINTS

(Reprints of major articles published by EAC faculty and research staff)

n° 1 de BETTIGNIES Henri-Claude
Japanese organizational behaviour: a psychocultural approach. 1973.

n° 2 de BETTIGNIES Henri-Claude
The transfer of management know-how in Asia: an unlearning process. 1980.

n° 3 de BETTIGNIES Henri-Claude
Korean management in the 1980's: the international challenge. 1980.

n° 4 de BETTIGNIES Henri-Claude
La sociologie des organisations: le cas du Japon. 1980.

n° 5 de BETTIGNIES Henri-Claude
Analyse des craintes françaises. 1980.

n° 6 LASSERRE Philippe
L'Indonésie et ses potentiels. 1981.

n° 7 LASSERRE Philippe
Transferts de technologie: des mariages difficiles. 1981.

n° 8 LASSERRE Philippe
The new industrializing countries of Asia: perspectives and opportunities. 1981.

n° 9 de RUGY Jacques
Le Japon prépare ses managers de demain à l'école de l'Occident. 1981.

n° 10 AMAKO Tetsuo
Quand les entreprises japonaises intègrent la gestion américaine. 1982.

n° 11 LASSERRE Philippe
Training: key to technological transfer. 1982.

n° 12 de BETTIGNIES Henri-Claude
Can Europe survive the Pacific century ?. 1982.

n° 13 LASSERRE Philippe
Strategic planning in South-East Asia: does it work ?. 1983.

n° 14 LEHMANN Jean-Pierre
Japan and the world economy: international accountability vs national interests. 1982.

n° 15 LEHMANN Jean-Pierre
Mutual images. 1982.

n° 16 LASSERRE Philippe
Technology transfer from a business policy point of view. 1982.

n° 17 LASSERRE Philippe
Co-ordinative practices in technology transfer. 1982.

n° 18 ESMEIN Jean
Le Japon et l'Asie. 1982.

n° 19 LASSERRE Philippe et Sé-Jung YONG
La modalité de l'acquisition de technologie dans les entreprises de pays en voie de développement. 1982.

n° 20 de BETTIGNIES Henri-Claude
Stratégies japonaises: conséquences pour les firmes européennes. 1982.

n° 21 SCHÜTTE Hellmut
Drehscheibe aller Auslandsaktivitäten. 1983.

n° 22 LEHMANN Jean-Pierre
International competition and the Japanese benchmarks of success: what has the West learned so far ?. 1983.

n° 23 AHMAD Reyaz
Coping with Japan: Japanese investments in ASEAN and the need for rapid change. 1983.

n° 24 de BETTIGNIES Henri-Claude
The challenge of management training in Asia. 1983.

n° 25 LASSERRE Philippe
Strategic assessment of international partnership in ASEAN countries. 1983.

n° 26 LEHMANN Jean-Pierre
Prospects for development in the current international environment - the issue of free trade vs protectionism. 1983.

n° 27 LEHMANN Jean-Pierre
Perspectives de développement dans l'environnement international actuel. La question du libre commerce contre le protectionnisme. 1983.

n° 28 CHAPON Marie-Claude
Labour conditions in South Korea - new needs, new directions. 1984.

n° 29 SCHÜTTE Hellmut
Micro-electronics versus cheap labour: questionmarks behind Asia's export successes. 1984.

n° 30 de BETTIGNIES Henri-Claude
Introduction of the book, <u>Le management est-il un art japonais?</u>. 1984.

EAC FORUM AND CONFERENCE PAPERS

(Papers presented at the EAC's annual forum or by EAC teaching or research staff at academic conferences).

n° 1 LASSERRE Philippe
Robots and flexible manufacturing systems: their contribution to the productivity dilemna. London, 1981.

n° 2 HUGUENIN Patrick and DEBROUX Philippe
European, Japanese and American investment in ASEAN. Singapore, 1981.

n° 3 PIGOSSI Richard
American investment in ASEAN: present situation and perspectives. Singapore, 1981.

n° 4 TAMAO Toyomitsu - Edited by DEBROUX Philippe
Japan's direct investments in ASEAN - current situation and prospects. Singapore, 1981.

n° 5 LASSERRE Philippe
Euro-ASEAN transfer of technology: some experiences and their implications for training. Kuala Lumpur, 1981.

n° 6 AMAKO Tetsuo
Relations entre les structures d'entreprises et les technologies au Japon - passé et avenir. Paris, 1982.

n° 7 AMAKO Tetsuo
Transférabilité de la gestion japonaise et cercles de qualité en France. Paris, 1982.

n° 8 DURHAM Kenneth
Protectionism, trade distortion and Euro-Asian relationships. Frankfurt, 1982.

EAC DOCUMENTATION SERIES

nº 1 A bibliography on Japan
Resources of the Euro-Asia Centre and INSEAD Library.
July 1982. 108 pages.

nº 2 A bibliography on ASEAN and ASEAN countries
Resources of the Euro-Asia Centre and INSEAD Library.
February 1983. 103 pages.

nº 3 A bibliography on the People's Republic of China
Resources of the Euro-Asia Centre and INSEAD Library.
August 1982. 18 pages.

nº 4 A bibliography on Asia
Resources of the Euro-Asia Centre and INSEAD Library.
February 1982. 25 pages.

nº 5 A bibliography on South Korea, Hong Kong and Taiwan
Resources of the Euro-Asia Centre and INSEAD Library.
January 1982. 22 pages