

CHAPTER FOUR
THE FINDINGS

4.1 Gearing Ratio

Table 1 presents a summary of the mean gearing measures, mean return on equity and mean operating leverage over the 10 years period from 1984 to 1993 for each of the 60 sample firms. The average of the mean TD/TA ratios of all the 60 firms is 44 percent. Its standard deviation which is a measure of the degree of dispersion from the mean is 16.12 percent. The mean TD/TA ranges from 4.2 percent for Malayan Cement to 88.4 percent for FA Peninsular.

The average mean LTD/TA is only 8.2 percent with a standard deviation of 6.11 percent. It ranges from as low as zero percent in Cycle and Carriage Bintang to as high as 35 percent in Cement Industries of Malaysia. This implies that the sample firms have excess long-term debt capacity as the average mean LTD/TA is only 8.2 percent. However, this is not the case when total debt is considered as a measure of gearing.

4.2 Mean Return on Equity

The average of the mean return on equity is 5.1 percent and its standard deviation is 23.3 percent. The mean return on equity of the sample firms varies between negative 130.9 percent for Innovest to as high as 27 percent for Rothmans.

TABLE 1
MEAN GEARING MEASURES, MEAN RETURN ON EQUITY
AND MEAN OPERATING LEVERAGE OF SAMPLE FIRMS
(IN PERCENTAGES)

| COMPANY | MEAN TD/TA | MEAN LTD/TA | MEAN ROE | MEAN FA/TA |
|-------------------------------|---------------|----------------|-------------|---------------|
| ACIDCHEM | 41.00 | 8.60 | 21.00 | 49.30 |
| AJINOMOTO | 23.00 | 5.20 | 6.30 | 67.10 |
| ALUMINIUM COMPANY OF MALAYSIA | 60.60 | 31.00 | (17.10) | 66.60 |
| AMSTEEL CORPORATION | 52.00 | 11.90 | 13.40 | 45.20 |
| AOKAM PERDANA | 26.40 | 8.10 | 18.40 | 8.30 |
| BERJAYA INDUSTRIAL | 60.90 | 14.40 | 10.90 | 16.20 |
| CARLSBERG BREWERY MALAYSIA | 30.00 | 4.00 | 18.50 | 51.20 |
| CEMENT INDUSTRIES OF MALAYSIA | 52.80 | 35.00 | 12.50 | 68.60 |
| CEMENT MANUFACTURERS SARAWAK | 24.10 | 6.10 | 16.70 | 53.90 |
| CHEMICAL COMPANY OF MALAYSIA | 40.50 | 6.20 | 13.00 | 31.30 |
| CHOCOLATE PRODUCTS | 71.10 | 6.90 | (29.40) | 36.80 |
| CI HOLDINGS | 50.10 | 8.20 | 14.10 | 44.90 |
| COLD STORAGE | 34.00 | 3.00 | 2.90 | 51.90 |
| CYCLE AND CARRIAGE BINTANG | 34.10 | 0.00 | 7.50 | 34.90 |
| DNP | 33.80 | 3.00 | 10.40 | 35.30 |
| DUNLOP MALAYSIA INDUSTRIES | 27.70 | 5.10 | 8.60 | 42.60 |
| DUTCH BABY MILK INDUSTRIES | 57.40 | 3.20 | 17.10 | 26.20 |
| ESSO | 59.80 | 14.10 | 24.90 | 63.60 |
| FA PENINSULAR | 88.40 | 11.40 | (57.40) | 22.30 |
| FEDERAL FLOUR MILL | 48.90 | 3.10 | 16.00 | 32.80 |
| GOH BAN HUAT | 32.80 | 6.60 | 9.40 | 71.00 |
| GOLD COIN | 61.90 | 7.10 | 11.60 | 26.60 |
| GOPENG | 32.50 | 8.50 | 9.50 | 31.00 |
| GUINNESS | 35.90 | 1.30 | 21.80 | 43.60 |
| HEXZA | 31.10 | 8.20 | 3.50 | 29.20 |
| HONG LEONG INDUSTRIES | 53.30 | 8.40 | 12.50 | 21.60 |
| HUME INDUSTRIES | 47.60 | 9.30 | 8.80 | 36.00 |
| INNOVEST | 72.50 | 18.10 | (130.90) | 38.70 |
| KANZEN | 31.20 | 6.30 | 9.60 | 49.50 |
| KHONG GUAN HOLDINGS MALAYSIA | 39.70 | 4.60 | 1.20 | 45.20 |
| KIAN JOO CAN FACTORY | 56.30 | 9.10 | 13.60 | 50.40 |
| LION CORPORATION | 49.00 | 11.20 | 6.90 | 14.90 |
| MALAYA GLASS | 40.70 | 12.80 | 12.20 | 63.80 |
| MALAYAN CEMENT | 4.20 | 0.10 | 10.10 | 1.00 |
| MALAYAN UNITED INDUSTRIES | 74.10 | 1.90 | 4.20 | 7.60 |
| MALAYAWATA STEEL | 65.80 | 13.80 | (56.80) | 48.60 |
| MALAYSIA AICA | 55.60 | 10.60 | 6.70 | 28.70 |
| MALAYSIAN OXYGEN | 31.20 | 7.70 | 17.70 | 68.70 |
| MALAYSIAN PACIFIC INDUSTRIES | 45.10 | 6.20 | 16.30 | 42.90 |
| MALAYSIAN TOBACCO COMPANY | 33.30 | 6.60 | 16.90 | 39.20 |
| MALEX INDUSTRIES | 20.60 | 5.40 | 7.30 | 45.80 |
| MUDA HOLDINGS | 56.80 | 15.30 | 11.20 | 57.20 |
| NESTLE | 41.90 | 1.50 | 24.80 | 21.60 |
| ORIENTAL HOLDING | 27.00 | 1.20 | 14.30 | 42.60 |
| OYL INDUSTRIES | 49.90 | 6.30 | 12.00 | 27.70 |
| PALMCO | 52.80 | 10.40 | (0.20) | 45.00 |
| PAN MALAYSIA CEMENT WORKS | 23.20 | 13.90 | 6.60 | 1.70 |
| ROTHMANS | 39.40 | 3.20 | 27.00 | 19.20 |
| SAMANDA HOLDINGS | 51.70 | 8.00 | 8.00 | 23.60 |
| SCIENTEX INDUSTRIES | 24.20 | 3.60 | 7.20 | 37.30 |
| SEAL INCORPORATED | 38.30 | 9.50 | (0.30) | 63.60 |
| SHELL REFINERY | 40.10 | 13.40 | 17.00 | 47.40 |
| SITT TATT | 31.90 | 7.30 | 5.20 | 50.40 |
| TASEK CEMENT | 28.90 | 7.70 | 11.50 | 50.10 |
| TONGKAH HOLDINGS | 50.80 | 8.60 | (10.00) | 58.30 |
| UMW HOLDINGS | 71.20 | 8.40 | (9.90) | 25.80 |
| UNITED ASBESTOS CEMENT | 31.40 | 9.70 | 11.40 | 48.60 |
| UNITED MALAYAN FLOUR MILLS | 38.60 | 4.60 | 8.50 | 31.10 |
| WING TEK HOLDINGS | 72.90 | 1.30 | 13.30 | 34.00 |
| YEO HIAP SENG | 37.30 | 5.20 | 7.10 | 47.90 |
| AVERAGE OF THE MEAN | 43.99 | 8.19 | 5.09 | 39.77 |
| STANDARD DEVIATION | 16.12 | 6.11 | 23.30 | 16.59 |

4.3 Mean Operating Leverage

The average mean FA/TA is 39.8 percent. The standard deviation of the average mean FA/TA is 16.59 percent.

The mean operating leverage figure is lowest for Malayan Cement (1%) and highest for Goh Ban Huat (71%).

4.4 Blume's Adjusted Beta

The corresponding Blume's adjusted beta for the sixty sample firms are presented in Table 2. The average beta is 1.08 with a standard deviation of 0.3 percent. FA Peninsular recorded the highest beta at 1.92 while Tasek Cement has the lowest beta of 0.34.

Table 3 shows the summary statistic of the above variables.

TABLE 2
BLUME'S ADJUSTED BETA OF SAMPLE FIRMS

| COMPANY | BLUME'S ADJUSTED BETA |
|-------------------------------|----------------------------------|
| ACIDCHEM | 0.96 |
| AJINOMOTO | 1.00 |
| ALUMINIUM COMPANY OF MALAYSIA | 1.45 |
| AMSTEEL CORPORATION | N.A. |
| AOKAM PERDANA | 1.42 |
| BERJAYA INDUSTRIAL | 1.07 |
| CARLSBERG BREWERY MALAYSIA | 0.86 |
| CEMENT INDUSTRIES OF MALAYSIA | 1.29 |
| CEMENT MANUFACTURERS SARAWAK | 1.07 |
| CHEMICAL COMPANY OF MALAYSIA | 0.65 |
| CHOCOLATE PRODUCTS | 1.37 |
| CI HOLDINGS | 1.24 |
| COLD STORAGE | 1.11 |
| CYCLE AND CARRIAGE BINTANG | 1.49 |
| DNP | 1.26 |
| DUNLOP MALAYSIA INDUSTRIES | 1.15 |
| DUTCH BABY MILK INDUSTRIES | 0.67 |
| ESSO | 0.82 |
| FA PENINSULAR | 1.92 |
| FEDERAL FLOUR MILL | 0.48 |
| GOH BAN HUAT | 1.18 |
| GOLD COIN | 0.90 |
| GOPENG | 1.06 |
| GUINNESS | 0.97 |
| HEXZA | 1.45 |
| HONG LEONG INDUSTRIES | 1.22 |
| HUME INDUSTRIES | 1.27 |
| INNOVEST | 1.25 |
| KANZEN | 0.95 |
| KHONG GUAN HOLDINGS MALAYSIA | 0.55 |
| KIAN JOO CAN FACTORY | 1.07 |
| LION CORPORATION | 1.24 |
| MALAYA GLASS | 0.98 |
| MALAYAN CEMENT | 1.20 |
| MALAYAN UNITED INDUSTRIES | 1.22 |
| MALAYAWATA STEEL | 1.48 |
| MALAYSIA AICA | 1.41 |
| MALAYSIAN OXYGEN | 0.82 |
| MALAYSIAN PACIFIC INDUSTRIES | 1.00 |
| MALAYSIAN TOBACCO COMPANY | 0.77 |
| MALEX INDUSTRIES | 0.80 |
| MUDA HOLDINGS | 1.24 |
| NESTLE | 0.72 |
| ORIENTAL HOLDING | 1.17 |
| OYL INDUSTRIES | 0.82 |
| PALMCO | 1.20 |
| PAN MALAYSIA CEMENT WORKS | 1.53 |
| ROTHMANS | 0.90 |
| SAMANDA HOLDINGS | 1.37 |
| SCIENTEX INDUSTRIES | 0.60 |
| SEAL INCORPORATED | 1.40 |
| SHELL REFINERY | 1.01 |
| SITT TATT | 1.07 |
| TASEK CEMENT | 0.34 |
| TONGKAH HOLDINGS | 1.51 |
| UMW HOLDINGS | 1.58 |
| UNITED ASBESTOS CEMENT | 1.00 |
| UNITED MALAYAN FLOUR MILLS | 0.57 |
| WING TIEK HOLDINGS | 0.89 |
| YEO HIAP SENG | 0.87 |
| AVERAGE | 1.08 |
| STANDARD DEVIATION | 0.30 |

TABLE 3
SUMMARY STATISTIC OF MEAN GEARING MEASURES,
MEAN RETURN ON EQUITY, MEAN OPERATING LEVERAGE
AND BLUME'S BETA

| VARIABLES | AVERAGE | STD. DEVIATION | LOWEST | HIGHEST |
|------------------|----------------|-----------------------|---------------|----------------|
| MEAN TD/TA | 44% | 16.12% | 4.2% | 88.4% |
| MEAN LTD/TA | 8.2% | 6.11% | 0% | 35% |
| MEAN ROE | 5.1% | 23.3% | -130.9% | 27% |
| MEAN FA/TA | 39.8% | 16.59% | 1% | 71% |
| BLUME'S BETA | 1.08 | 0.3% | 0.34 | 1.92 |

4.5 Regression Analysis

4.5.1 Capital Structure And Return on Equity

The results of the regression analysis between the two types of gearing measures and mean return on equity are shown in Table 4.

TABLE 4
REGRESSION OF TWO MEASURES OF GEARING
ON RETURN ON EQUITY OF SAMPLE FIRMS (N = 60)

GEARING RATIO = c - m MEAN ROE

| Dependent Variable (gearing ratios) | Intercept (c) | Slope (m) | R ² |
|--|------------------|------------------|----------------|
| TD/TA | 45.65 | -0.33* (4.07) | 0.22 |
| LTD/TA | 8.60 | -0.08* (2.53) | 0.099 |

t-statistics are in parentheses

*** significant at 5% level**

When TD/TA is regressed on mean return on equity, the vertical intercept, 45.65 percent, is interpreted as when return on equity is zero, the mean gearing ratio for the sample firms is approximately 45.6 percent. The slope coefficient of -0.33 is **significant** at 5% significant level. This suggests that there exists an inverse relationship between gearing and the mean return on equity. However, the value of R-squared of 0.22 indicates that mean return on equity only explains the variation in gearing in about 22 percent of the instances. This is expected as there are many other factors that will also influence the

level of gearing in a firm. Other studies have found that the level of gearing is also influenced by factors such as assets types and non-debt tax shield. For example, Scott (1977) found that gearing is positively related to the amount of tangible assets. DeAngelo and Masulis (1980) findings indicate that firms with large non-debt tax shield have lower gearing.

When the mean LTD/TA is regressed against mean ROE, the vertical intercept is 8.6 percent. This means that when return on equity is zero, the mean gearing ratio for the sample manufacturing firms is approximately 8.6 percent. The slope coefficient of -0.08 is also **significant** at 5% significant level. This again suggests that there is an inverse relationship between mean gearing ratio and mean return on equity. R-squared has a value of 0.099 which indicates that the mean return on equity only manage to explain 9.9 percent of the variation in gearing ratio.

The above two regression equations show that both gearing measures are inversely related to mean return on equity. However, the relationship is stronger when we include both current liabilities as well as long-term liabilities in the gearing formula. This could be due to the manner in which financial managers perceive current liabilities. Indirectly, current liabilities such as accounts payable and bank overdrafts may be considered a source of long-term funds as it is unlikely to be revoked.

First, in accordance with the theory of capital structure, the more debt a firm has (the higher the gearing), the higher the return on equity, *ceteris paribus*. This is because the presence of debts will magnify the return on equity due to gearing or leverage effect. Hence, we would expect gearing ratio to be positively related to return on equity.

The second school of thought is the pecking order theory, that is put forward by Donaldson (1961). The pecking order theory states that firms prefer internal finance and will first finance investment out of internally generated funds. If external finance is required, firms will issue the safest security which is debt, then possibly hybrid securities such as convertible bonds and equity as a last resort. Since internally generated funds such as retained earnings are only available when firms are profitable, it follows that a high return on equity (a measure of profitability) will lead to lesser use of debt and hence a lower gearing ratio. We would therefore expect to see a negative relationship between return on equity and gearing.

The above two regression results appear to support the evidence that the pecking order theory is being practiced by management within the manufacturing industries. This finding is consistent with another study conducted by George W. Kester and Mansor Md Isa (1993). In the survey using questionnaire that was mailed to the chief executive

officers of 361 companies listed on the Kuala Lumpur Stock Exchange, they found that 77.9 percent of the respondents expressed a preference for a financing hierarchy. In another survey of 176 Fortune 500 firms in the United States, Pinegar and Wilbricht (1989) found that the pecking order hypothesis is more descriptive of actual practice than the static trade-off model. Similar results were also obtained in Hong Kong by Kester and Chang (1992) and in Singapore by Kester and Tsui (1993).

However, there might also be other reasons to explain why there exists an inverse relationship between gearing and return on equity. One reason could be attributed to the differences in issue costs. Financing investment out of retained earnings do not incur issuance costs. Issuing shares on the other hand, will incur substantial issuance costs in the form of underpricing, registration fee, legal fee, advertising and accountancy fee. Firms that issue equity capital are also subjected to the discipline of the capital market. Another reason is that firms want to build up financial slack or unused debt capacity in the form of cash and marketable securities. The third reason could be that firms want to avoid the monitoring costs of financial institutions. It could also be due to a lack of varieties of debt instruments as the Malaysian bond market is still in its developing stage.

A LTD/TA of 8.6 percent also reflects a relatively low

level of gearing. This implies that long-term debt is not a major source of financing among the sample firms. This could be attributed to the absence of a matured long-term debt market or the conservative attitude of bankers.

4.5.2 Capital Structure And Operating Leverage

The regression results are presented in Table 5.

TABLE 5

REGRESSION OF TWO MEASURES OF GEARING

ON OPERATING LEVERAGE OF SAMPLE FIRMS (N = 60)

GEARING RATIO = c + m MEAN OPERATING LEVERAGE

| Dependent Variable (gearing ratios) | Intercept (c) | Slope (m) | R ² |
|--|------------------|------------------|----------------|
| TD/TA | 47.54 | -0.089 (0.71) | 0.0087 |
| LTD/TA | 3.49 | 0.118* (2.62) | 0.106 |

t-statistics are in parentheses

* significant at 5% level

The regression results show that there is **no significant relationship between TD/TA and operating leverage**. The calculated actual t-value of 0.71 is less than critical t-value of 2. R-squared is also too low to suggest any meaningful relationship between the two variables.

However, when mean LTD/TA is regressed against mean operating leverage, there is a **significant positive relationship between these two variables**. R-squared has a value of 0.10. **The positive relationship between gearing as measured by LTD/TA and operating leverage can be explained by the fact that as the use of fixed assets increases the amount of long-term debt financing must also increase**. This reflects the relationship between asset mix and debt composition. This is consistent with the idea of matching principle which states that firms will finance working capital with a mixture of current liabilities and long-term debts while fixed assets are financed only with long-term debts. Hence, as the amount of fixed assets increases, the amount of long-term debts must also increase accordingly. More fixed assets mean a higher degree of operating leverage. And the higher the degree of operating leverage the higher the amount of long-term loans. So gearing (LTD/TA) also increases. This is similar to the result of Toy et al. (1974). Toy found that companies with high operating risk tend to have higher amount of debt financing.

4.5.3 Capital Structure And Systematic Risk

Hamada (1972) suggests that gearing is positively related to systematic risk. The higher the gearing, the more risky is the firm's earning and therefore the higher is the firm's beta. The regression result of gearing on systematic risk of Malaysian firms are given in Table 6.

TABLE 6
REGRESSION OF TWO MEASURES OF GEARING
ON SYSTEMATIC RISK OF SAMPLE FIRMS (N = 60)

GEARING RATIO = c + m BLUME'S BETA

| Dependent Variable (gearing ratios) | Intercept (c) | Slope (m) | R² |
|--|--------------------------|----------------------|----------------------|
| Mean TD/TA | 25.9 | 16.72* (2.54) | 0.099 |
| Mean LTD/TA | .77 | 6.85* (2.77) | 0.116 |

t-statistics are in parentheses

*** significant at 5% level**

The finding indicates that **there is a statistically significant positive relationship between both gearing measures and systematic risk**. This is so as higher gearing creates financial risk. The increase in financial risk should be reflected in the stock's beta. However, R-squared only managed to account for 9.9 and 11.6 percent of the changes in TD/TA and LTD/TA respectively.

In another study by Annuar and Shamsher (1993), they found that there exists a positive but **not statistically**

significant relationship between both gearing measures and systematic risk. R-squared was even smaller at 0.001 and 0.053 respectively. They concluded that the model does not hold as R-squared is too low to suggest any meaningful relationship.