# CHAPTER 2

# LITERATURE REVIEW

Even though securities markets could be overall efficient, Graham (1974) believed that any conscientious investors could gain superior returns through pockets of inefficiencies by paying close attention to investment fundamentals and taking advantage of undervaluation and mispricing of individual securities. As to the semi-strong form of the efficient market hypothesis, Graham (1974) gave the following view:

> There are times when a researcher may unearth significant information about a stock, not generally known and reflected in the price. But I deny emphatically that because the market has all the information it needs to establish a correct price, the price it actually registers are in fact correct. Take as my example a fine company such as Avon Products. How can it make sense to say that its price of 140 was "correct" in 1973 and that its price of 32 was also "correct" in 1974? Could anything have happened – outside of stock market psychology – to reduce the value of that enterprise by 77% or nearly 6 billion dollars? The market may have had all the information it needed about Avon; what it has lacked is the right kind of judgement in evaluating its knowledge.

Graham (1974) also repudiated the elaborate techniques of security analysis to find superior value opportunities. Instead, he suggested a highly simplified approach which

applies one or perhaps 2 criteria to choose securities for portfolio formation. Graham (1976) revealed the following techniques and results:

i. Common stocks were purchased at less than their working-capital value or net-current-asset value, giving no weight to the plant and other fixed assets and deducting all liabilities in full from the current assets. This approach was used extensively in managing investment funds and over a 30 odd year period, an average return of 20% per year was earned.

ii. The stocks bought were those with 7 times the reported earnings for the past 12 months, current dividend return above 7%, book value more than 120% of price, etc. Performance studies of these approaches were performed from 1925 – 1975. They consistently showed results of 15% or better per annum or twice the record of the Dow Jones Industrial Average (DJIA) for this period.

Blustein (1977) reported the Graham-Rea approach to identify underpriced security. It involved examining the current financial statements of the firm under consideration as well as the relationship between certain items from these statements to the current security price and triple-A bond yield. This set of criteria was later known as Graham's stock selection criteria.

The criteria are:

i. An earnings-to-price yield at least twice the AAA bond yield.

ii. A price-earnings ratio less than 40% of the highest price-earnings ratio the stock had over the past five years.

iii.     A dividend yield of at least two-thirds of the AAA bond yield.

iv.     Stock price below two-thirds of the tangible book value per share.

v.      Stock price below two-thirds of the "net current asset value".

vi.     Total debt less than the book value.

vii.    Current ratio greater than two.

viii.   Total debt less than twice the "net current asset value".

ix.     Earnings growth of the prior 10 years at least at a 7% annual (compound) rate.

x.      Stability of growth of earnings in that no more than two declines of 5% or more in year-end earnings in the prior 10 years are permissible.

The first 5 criteria deal with 'rewards' and the second 5 deal with 'risks'. The aim is to identify stocks that have the highest reward to risk ratio. Only securities meeting at least one reward and 1 risk criteria are considered undervalued.

Oppenheimer (1984) used a naïve strategy that assumed an investor purchased securities simultaneously meeting 2 or more criteria to test Graham's stock selection criteria from 1974 to 1981. Tests were run separately on 3 sets of criteria; criteria 1 and 6, criteria 3 and 6 and criteria 1, 3 and 6. He screened the New York Stock Exchange (NYSE) and American Stock Exchange (AMEX) for securities meeting any of the 3 sets of criteria on 31st December of each year between 1973 and 1980.

Those securities meeting the criteria - a random sample of 35 - were purchased on the last business day of March in the year following the screen to form a portfolio. Each security

was held for either 2 years or until a 50% price appreciation occurred – whichever came first. In addition, tests were also performed to determine if any evidence of selective ability found might actually represent a small firm effect. Lastly, the efficacy of the selection criteria was examined before their publication (sample from 1973 – 76) and after their publication (sample from 1977 – 80).

The following results were obtained for the NYSE stocks:

i.    The performance estimate using criteria 1 and 6 indicated positive excess returns that were statistically significant prior to publication. The smallest of the four – 1.32% per month – annualized to an excess return of 17% per year. After publication, only the 1979 screen provided statistically significant excess return. Significant pre and post publication excess returns were also observed after adjustment for size effect.

ii.   For criteria 3 and 6 and criteria 1, 3 and 6, large significant excess returns were obtained prior to publication. However, after publication, mixed results were obtained. The results were similar after adjustment for size effect.


In addition, raw returns of the AMEX firms indicated a large advantage over the market portfolio that did not seem to decrease either after publication or after adjustment for risk. The excess returns for each screen for each year prior to publication were statistically significant. The smallest, 0.89% per month, gave an excess return of 10% per year. Similar results were observed after adjustment for firm size.

Oppenheimer (1986) conducted a study to test Graham's criterion 5, that is, the Net Asset Value criterion (NAV) from 1970 – 1982. He screened the entire December *Security Owner's Guide* and a security was purchased if its November closing price was no more than two-thirds of its NAV. Equally weighted portfolios were purchased on the last business day of December of each year. Depending on the analysis, each security was held for either 12 or 30 months. For each analysis, the mean monthly returns for the NAV portfolios were compared to various market benchmarks such as the NYSE-AMEX index and the small- firm index.

The following results were obtained for portfolio with 12 months holding period:

i.   During the 1970 – 1983 period, the mean monthly return of NAV portfolios was 2.45%. By contrast, the mean monthly returns for the NYSE-AMEX and small firm indices were much lower, that is, 0.96% and 1.75%, respectively.

ii.  Over the 13 year period, the NAV portfolios, on average, outperformed the NYSE-AMEX index by approximately 19% annually after adjusting for risks. Compared to the small firm index, the NAV portfolios, on average, earned an excess return of approximately 8% per year.

For portfolios with a 30 month holding period, the results obtained are as follow:

i.   After adjusting for risk, 11 of the 13 excess returns obtained by the NAV portfolios were greater than 12% per year compared to the NYSE-AMEX index. However, only 4 out of 13 excess returns were statistically significant.

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ii.     11 out of 13 of the risk adjusted excess returns for the NAV portfolios were greater than 8% per year compared to the small firm index. However, only 2 out of 13 excess returns were statistically significant.

Graham's selection criteria were tested in the KLSE by Chia (1987). There were altogether 6 screens: screen A – criteria 1 and 6, screen B – criteria 3 and 6, screen C – criteria 3 and 8, screen D – criteria 1 and 8, screen E – criteria 1, 3 and 6 and screen F – criteria 1, 3 and 8. Screens E and F were used to test if the returns of portfolios with more stringent criteria were statistically different compared to those with less stringent criteria. The study was similar to the one conducted by Oppenheimer (1984).

The period of study was from 1978 – 1985 and all the securities listed on the KLSE at 31$^{st}$ December each year were screened. A sample of 30 securities was randomly selected to form a portfolio. In cases where the eligible securities were less than 30 but more than 8, all were chosen to form a portfolio. The selected securities were purchased on the last business day of March in the year following the screen. Each security was held for either 2 years or until a 50% price appreciation occurred – whichever came first.

It should be noted that, however, at the time of study, the Kuala Lumpur Composite Index (KLCI) was not available. As a proxy to the market portfolio, Chia (1987) constructed a weighted index that combines all the KLSE sectoral indices using numbers of counters traded for each sector at the end of each month as weights.

The results of the analysis were as follow:

i.    The use of any of the 6 screens almost invariably provided raw returns in excess of the market returns. An investor, on the average, would earn a mean return from 28% to 38% per year. By contrast, the market return was about 18% per year. Close examination of the results indicated that an investor using criteria 3 and 8 would earn a mean annual return of about 38%.

ii.   After adjusting for risk, all the screens indicated positive excess returns. About 54% of these excess returns were statistically different from zero at the 10% level.

iii.  Comparisons were made between screens A and E, screens B and E, screens C and F and screens D and F to test the effect of more stringent criteria. It was found that the returns of the sampled portfolios were not affected by including additional selection criterion in the screen.

iv.   There was no evidence of the presence of firm size effect. Hence, superior performance of the portfolios was not due to firm size effect.