An exploratory study on post-merger performance and accrual of benefits in the Wayne Rubber merger

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1. INTRODUCTORY CHAPTER

This chapter provides an introduction to the study, a definition of the problem statement and objectives, a background to the problem, and the research design and methodology with three sub-hypotheses and an overall hypothesis, and a synopsis of subsequent chapters.

1.1 INTRODUCTION TO THE STUDY

Mergers and acquisitions have long played an important role in the growth of firms (Mandelker, 1974:303) and recent years have seen increasing levels of merger activity in most developed countries. Some explanations given are those of tax considerations, inefficient management of target companies and synergy.

Phoenix Rubber (Proprietary) Limited was a company that was started by three shareholders, Messrs H.W.Schutz (German), L.T.Daniel and T.N.Harrington and commenced for business on 1 July 1981. It was a manufacturer of a wide range of industrial rubber components supplied mainly to the mining, construction, and automotive sectors. After consistently performing well with profits in excess of one million rands per annum, a minimum threshold at which an application for listing could

succeed, the company decided to initially list on the Development Capital Market (DCM) in October 1987 in order to raise additional capital for further expansion.

The 1985-1987 period witnessed share prices rising to record levels on the JSE. In particular, 1987 recorded the highest number of listings in the one hundred years of the stock exchange. A major feature of this year was that for the first time since its creation in 1984, investors showed interest in the DCM.

I was privileged to be associated with Phoenix Rubber Limited when it was listed on the DCM on 6 October 1987. A year later on 1 December 1988 the company promoted to the main board of the JSE under the Chemical and Oil sector. It was a highly successful company with good products, markets, and loyal and long serving personnel. It merged with Wayne Rubber (Pty) Ltd on 1 July 1989 and became Wayne Manufacturing Limited. The existing shareholders became minority shareholders of the enlarged company. Due to it's lack lustre share performance, which was somewhat of an embarrassment to its holding company Conshu Holdings Ltd, a subsidiary of SA Breweries, the company's shares were de-listed on 22 October 1993.

I have been intrigued by these chain of events, and ever since then, have been keen to establish the real reasons for merging Phoenix Rubber, a successful company, and whether benefits accrued to the acquiring shareholders of Phoenix Rubber i.e. to Conshu Holdings, in this corporate merger. The sad result of the merger was that the operations of Phoenix were closed down, with its resultant loss of many skilled personnel, which was a human tragedy in itself.

The procedure employed is to calculate the share valuation as at 1 July 1989 using Net Asset Value and Discounted Free Cash Flows techniques on actual free cash flows for financial years ended June 1990 to June 1993. These will be related to the market prices of the shares prevailing on the JSE at the time. This is to establish the post merger performance of the shares of Phoenix Rubber Limited. Our study will span some six years, from the company's listing to de-listing.

To confirm and illustrate these results the cumulative residuals under the market model are calculated and shown in graph form reflecting the abnormal returns effect of the share price behaviour before, during and

after the merger of Phoenix Rubber. The share price of Wayne was regressed against the All Share Index (ALSI).

Established literature is utilised extensively to correlate the company's performance to the hypothesis that the shareholders of acquiring firms do not benefit by the merger activity in the short term.

1.2 THE PROBLEM STATEMENT AND OBJECTIVES

My objective is to relate the share price performance of Phoenix Rubber Limited pre and post merger to the literature on the performance of acquired and acquiring companies.

The objective of the study is to establish whether the merger of Phoenix Rubber Limited resulted in greater benefits to the acquired shareholders than the acquiring shareholders.

1.3 THE BACKGROUND TO THE PROBLEM

Empirically, it has been found that stockholders of acquiring firms suffer a statistically significant wealth loss over the five years following the merger completion. The reason for the large negative returns after merger remains an anomaly. One possibility is that the market is slow to adjust to the merger event. If so, the long run performance reflects that part of the

negative net present value of the merger to the acquirer that is not captured by the announcement period return.

My own experience relates to my tenure as financial director at Phoenix Rubber Limited during its listing in October 1987 through to its merger on 1 July 1989 until my departure at the end of July 1992. During the period 1989-1992 the company changed its name to Wayne Manufacturing Limited. Sadly, it de-listed on 22 October 1993.

This leads us to the hypothesis that "benefits accrued to the acquiring shareholders of Phoenix Rubber in the corporate merger".

1.4 THE RESEARCH DESIGN AND METHODOLOGY

The following methods will be used to measure performance:-

1. The calculation of market to book ratios for the whole period i.e. 1987 to 1993
2. Calculation of value in 1989 under Net Asset Value, Discounted Free Cash Flows, and Dividend Growth Model.
3. The residuals under the market model: $Rj = a + \beta Rm + e$

Across a large sample of firms with acquisitions spread well over time, we can be fairly confident that random effects will cancel out, and that no one set of events, whether good or bad, will confound the analysis (Dodd, 1992). This study will not be attempting to do this as it is on one company and will include random effects.

The research approach is an exploratory case study on one company, Wayne Rubber. Phoenix Rubber merged in 1989 with Wayne Rubber, the combined company being renamed Wayne Manufacturing Limited.

Share prices at monthly intervals together with All Share Index (ALSI), have been obtained for the entire life of Phoenix Rubber (1987-1993) from the JSE. The ALSI indices are used later in our study using the market model (Bowman, 1983).

The objective of my study into post merger performance will be performed by the examination of the overall hypothesis that greater benefits accrued to the acquired shareholders of Phoenix Rubber in this corporate merger than to acquiring shareholders.

1. The first sub-hypothesis is concerned with the relationship between the closing share price of Wayne Manufacturing Limited, pre and post merger at 30 June each year to the net asset value per audited annual financial statements. The hypothesis is that the market to book ratio falls markedly in the post-merger period, reflecting a declining performance for both acquiring and acquired shareholders.
2. The second sub-hypothesis: The value of Phoenix is less than the price paid by Conshu, reflecting with hindsight. Thus the acquiring shareholders do not benefit from the merger.
3. The third sub-hypothesis: Residuals under the market model will reflect benefits to acquired shareholders prior to the merger, but declining abnormal returns thereafter.

These hypotheses are consistent with the literature surveyed in the following chapter.

1.5 SUBSEQUENT CHAPTERS

The contents of subsequent chapters are as follows.

Chapter 2 is a literature review of empirical studies conducted and literature written by various financial writers on new listings and post-merger performance.

Chapter 2.1 outlines that mergers and acquisitions are founded on the belief that the combination of two or more companies can provide significant advantages because of enhanced strategic leverage, which generates greater value in combined form than as separate entities.

In the case of mergers, two or more free-standing entities of equal standing are amalgamated during which the original entities disappear to a greater or lesser extent and a new single entity is formed.

In contrast, acquisitions pertain to the procurement of one or more free-standing organisations by another company where the latter plays the dominant role.

In the former case, both partners play an equal role in the marriage. In the latter case, the partners are of unequal standing.

Chapter 2.2 deals with the relationship between an acquiring and target firm. This chapter is considered to be at the heart of this study and covers growth maximisation as a common motive for corporate mergers albeit of a resultant decline in shareholder wealth of acquiring shareholders. The work of several leading researchers is outlined covering empirical results on recent event studies on abnormal returns earned around takeover announcement date.

Chapter 2.3 cites various reasons for the failure of corporate mergers, such as:

- failure to maintain focus on the customer;
- overestimation of synergies ;
- poor cultural fit;
- inability to transfer skills; and
- lack of vision and strong leadership

Chapter 3 discusses the rationale of the Phoenix/Wayne merger starting with the history of Phoenix Rubber in 1981, its listing in 1987, merger with Wayne in 1989, and Wayne's de-listing in 1993. Wayne was reversed into listed Phoenix and the intention was to use the expected increased scrip price of the new listed company Wayne Manufacturing to

make further acquisitions. The share price performed poorly after the Phoenix merger, and three years later, the shares were de-listed.

Chapter 4 discusses in detail the financial performance of Phoenix/Wayne Rubber with excerpts from the published annual reports. The chapter ends with empirical studies on share price behaviour, and the performance of new listings.

Chapter 5 discusses different valuation methods, and initially, the purpose of valuing a business. Four valuation methods are used and the writer favours the discounted free cash flow method. The CAPM calculation is shown with the beta derived from the regression.

Chapter 6 covers in detail the use of the market model to establish abnormal returns. Market effects are removed from the share price to derive the abnormal returns that show a declining trend after merger, consistent with literature.

Chapter 7 is a discussion of the conclusions derived from the study arising from the three hypotheses postulated in Chapter 1.4.

2. LITERATURE REVIEW

2.1 MERGERS AND ACQUISITIONS

In this chapter the distinction between a merger and an acquisition is examined. An aquisition generally requires funds whereas a merger is usually by an exchange of shares. Three motives classified as short-term financial, long-term financial, and operating are covered in some detail. These are synergistic motives and causes the value of the two firms when combined to be greater than the sum of the two parts i.e. 2+2=5. The chapter ends with an interesting study done on Japanese mergers that give some insight into the way their cultural differences dictate business.

Mergers and takeovers have played an important role in shaping the modern capitalistic economies. Until recently, economists did not attempt to develop a formal theory of mergers and takeovers, explaining the decision of one firm to merge with or take over another. Most writers distinguish between mergers and takeovers (or acquisitions) on a purely legal basis.

An acquisition or takeover of firm B by firm A occurs when company A acquires more than 50 per cent of the equity of company B; after the acquisition of the minority company B may cease to exist as a separate

legal entity and be regarded as a division of company A. There are many ways in which this may be done.

A merger between companies A and B occurs when the two companies amalgamate and form a new legal entity to take over the businesses of A and B which are dissolved.

This legal distinction between mergers and takeovers is of little interest from an economic point of view, since the legal form of the amalgamation has little to do with broader economic considerations, such as the motives for, or the effects of, the amalgamation.

A more meaningful distinction between mergers and takeovers is the way in which these two types of amalgamation occurs. A merger between two companies A and B takes place when the managers of A approach B's managers directly; they negotiate the conditions of the amalgamation and they agree upon a mutually satisfactory price; then B's managers use their influence and proxy to persuade their stockholders to approve the merger. In short, a merger takes place with the mutual agreement of the managements of the merging companies. A takeover (or acquisition) occurs when the shareholders of firm A directly make a tender offer and

buy the shares of the stockholders of firm B at a price, which is usually substantially higher than the current share price on the stock market. Such a takeover usually takes place with opposition from B's managers. In other words, a takeover involves a direct transaction between the managers of A, the acquiring firm, and the stockholders of firm B, the acquired firm.

Another difference between mergers and takeovers is that takeovers usually require funds for the acquisition of one firm by another, while mergers usually take place by an exchange of the shares of the merging firms with shares of the new legal entity. This could also be undertaken by an exchange of shares (Koutsoyiannis, 1982).

There appears to be a rationale for merging any firm with any other firm in the economy.

The first consists of those motives that deal with synergy, causing the value of the two firms combined to be greater than the sum of the two parts. "Synergistic" motives can be classified into three categories:

- short-term financial
- long-term financial and
- operating

The second group of motives is based on the "under-valuation" of the target company. Here value in the company is transferred from the selling to the buying firm from the acquisition of undervalued assets.

The third set of motives consists of special managerial motives for mergers, that self-interest of corporate managers may cause them to take actions that do not harmonise with stockholder interests.

An example of short-term financial motives was the use of acquisitions to boost EPS by acquiring companies with lower P/E ratios. The assumption underlying this strategy is that the market mechanically applies the buying firm's P/E ratio to the artificially increased EPS, thus increasing stock price.

A second short-term financial consideration is improved liquidity. Companies often acquire other firms with excess cash in order to improve their own liquidity. It may be argued that the same objective can be accomplished considerably more cheaply by going directly to capital markets to raise capital.

As a third short-term financial consideration there are often tax benefits associated with acquisitions. Tax loss carryforwards may provide a tax shield for the acquiring firm.

Turning to longer-term financial synergy another motive is to increase debt capacity. Presumably, the larger size of the combined entity provides lenders with greater protection, thus allowing the combined firm to have a larger debt-to-capital ratio. Also contributing to greater debt capacity is the diversification provided by conglomerates.

- That brings us to the second group of corporate motives for acquisitions – those assuming target undervaluation. This was undoubtedly among the most popular explanations offered for the merger wave of the late 1970's. Under certain capital market conditions, it is argued, the liquidation value of the firm's net assets could be considerably higher than the market value of the firm's common stock. You could buy the stock of the firm far more cheaply than by going on the market and buying directly the machines, land, capacity and so on. These arguments are premised on an identifiable, exploitable inefficiency in stock market pricing. Another explanation has to do with "inside information". This is often cited as a motive in "friendly" mergers, especially those in which besieged target

firms voluntarily provide information to "white knights". So, if the buyer has inside information which indicates that the stock of the target firm is undervalued then this seems a legitimate motive for an acquisition – one that can be reconciled with the premise of an efficient market.

A final explanation, is by far the most important and an interesting one. And this is that this undervaluation is caused by the failure of management to manage assets efficiently. Clearly management inefficiency would be reflected in relatively depressed stock prices, relative to stock prices of comparable firms run by more efficient managers. In such cases, there is thus an opportunity to acquire poorly managed firms at relatively low prices.

- This brings us to the third group of motives. It concerns the extent to which managers pursue their own interest at the expense of their companies' stockholders. This one was very popular in the literature of the 50's and 60's. Management sometimes deviates from the classical economic objective of maximization of stockholder's wealth. Instead it pursues private goals, growth, empire-building, power, prestige, and so on. The forms of executive compensation that now prevail may explain part of this divergence of managerial from stockholders interests.

There is one last managerial motive: acquisitions allow the buying firm's managers in effect to diversify the risk that attaches to their own human capital. The only way to diversify this risk is to diversify the firm. And again, this diversification benefits managers, often at the expense of stockholders (Baruch Lev, 1992).

The problem faced by researchers is finding a method for evaluating the effect of a corporate merger or acquisition on stockholder wealth. At first glance, it might appear that the success of an acquisition could be judged only by observing the performance of the combined firm over a long period in time.

Modern finance theory says that the most reliable way of measuring the real economic performance of a company is to track its stock price against the performance of the market as a whole. In an "efficient market", the expected value of an acquisition will be estimated by the market and reflected in changes in stock prices immediately upon the announcement of the transaction (Dodd, 1992).

As this is a case study rather than an event study the abnormal returns in the Wayne case will include a lot of random effects ("noise") i.e. the share price will be reacting to all information about the company, not just the acquisition.

As a conclusion to this section a study by Pettway and Yamada (1986) on Japanese mergers is included. This has been done because of the major differences in management and environment between Japanese and American firms. Cultural differences such as lifetime employment, restricted labour mobility, seniority-based wages and company unions in Japan may have contributed to the lower level of merger activity there.
The acquiring firm rarely takes the initiative. The moving party in Japanese mergers is the selling firm, not the acquiring firm as is common in American mergers. These many differences may cause Japanese combinations to affect shareholders' wealth differently than American mergers.

Often, the acquired firm will seek business or financial assistance from the acquiring firm. Under such circumstances, The Japanese selling firm may not be able to command as large a price as its American counterpart. Additionally, if the selling firm is financially weaker than the buying

firm, there may be more abnormal returns to the acquiring firm in Japan than in the US.

Data for the period 1977 to 1984 covering 157 mergers were selected to study Japanese mergers and the standard market model used. The results indicate that, overall, information about the merger had a favourable though insignificant effect on shareholders' wealth. The study by Pettway et al, may indicate that the much larger acquiring firm that does not initiate the merger has sufficient market power to drive the price of the acquired firm below present value. In Japan, the acquiring firm's shareholders lost wealth (a significant loss of 7.7%) when the acquired firm was larger than 20% of the size of the acquiring firm. Thus, abnormal returns to shareholders of Japanese selling firms are well below the gain received by acquired-firm shareholders in American mergers.

2.2 THE RELATIONSHIP BETWEEN AN ACQUIRING AND TARGET FIRM

The pursuance of growth maximization has been a common motive for corporate mergers. Various studies and their findings suggest a decline in the wealth of acquiring shareholders. Jensen (1986) stated that the companies with large free cash flows are likely to undertake mergers, albeit of low-benefit or loss in value. Bhana (1987), used the market

model to establish that substantial abnormal returns are earned around the takeover announcement date. Van der Honert et al (1988), concluded in their empirical results that target companies experience significant gains around the announcement date. Affleck-Graves et al (1988), in their study indicated that the average premium on acquisition is around 30%. Agrawal, et al (1992) in a study conducted on the NYSE found that shareholders suffer a loss of about 10% over a five-year post-merger period.

Although the speeding up of growth has been suggested by various economists as a motive for mergers, according to Koutsoyiannis (1982:249) it was a Dennis Mueller who presented a formal model of mergers in which the merger activity is attributed to the growth-maximisation goal of managers. According to Mueller the utility functions of managers differ from those of stockholders. Stockholders are mainly interested in the profits of the firm, while managers want job security, power, status, high salaries and other perks. Empirical studies suggest that both the pecuniary and non-pecuniary goals of managers are relative to the growth rate of the firm. Managerial salaries, bonuses, stock options and promotions all tend to be more closely related to the growth of the firm than to its profits. Similarly, the prestige and power of

managers are directly relative to the size and the growth of the company, not to its profitability. Thus, managers are more interested in the size and growth of the firm than in its profits. The separation of ownership from management in the large corporations gives some discretion to managers in setting the goals of the firm and they may use it to maximise their own welfare. Given the close correlation between growth and the magnitudes in which managers are interested, they set as their goal the maximisation of the growth of the firm. This is a radical departure from the basic premise of the neoclassical theory of the firm, which assumes that the goal of managers is the maximisation of the profit or the welfare of stockholders.

The pursuance of growth maximisation by managers affects their investment policy in general, because their motivation for growth makes them apply a lower discount rate than that of stockholders in evaluating the future profitability of alternative investment opportunities open to the firm at any time. The findings of a study by Arthur Dewing suggest that the profitability of mergers is lower than that of non-merging firms, and it declines over time. This would have a negative effect on the share performance of merged companies (Koutsoyiannis, 1982)

Jensen (1986) stated that free cash flow theory predicts which mergers and takeovers are more likely to destroy, rather than to create, value; it shows how takeovers are both evidence of the conflicts of interest between shareholders and managers, and a solution to the problem. Acquisitions are a way managers spend cash instead of paying it out to shareholders. Therefore, the theory implies managers of firms with unused borrowing power and large free cash flows are more likely to undertake low-benefit or even value-destroying mergers.

Consistent with empirical evidence, free cash flow theory predicts that many acquirers will tend to have exceptionally good performance prior to acquisition. That exceptional performance generates the free cash flow of the acquirer for the acquisition. Targets will be of two kinds: firms with poor management that have done poorly prior to the merger, and firms that have done exceptionally well and these targets with large free cash flows refuse to pay to shareholders (Jensen, 1986)

A South African study by Bhana (1987) using the Market Model to estimate the required risk-adjusted return for the chosen security, has shown that shareholders of acquired companies earned fairly substantial abnormal returns around the time of the takeover announcement. Insiders

appear to take market positions on prospective takeovers approximately 40 trading days before the public announcement. Leakage of inside information occurs at a significant level in the 15 trading days preceding the public announcement of the proposed takeover. The results suggest that registered insiders were not responsible for the abnormal trading in the target companies during the three weeks before the public announcement of the takeovers, substantial insider trading is carried out through third parties in order to escape detection. The JSE appears to be inefficient in reacting to the public announcement of the takeover proposals: significant market reaction occurs in the five trading days immediately following the announcement date.

Van den Honert, Barr, Affleck-Graves and Smale (1988) conducted a study on the JSE over the period 1975 to 1985. They examine, in a cumulative average abnormal return (CAAR) framework, the effect of the following features that emerge from their empirical results: in the related mergers the acquiring firms on average do not lose value from merger while the targets show significant gains. In the case of unrelated mergers the acquirers lose, possibly due to the fact that they are unfamiliar with the business. In contrast, the target firms show massive gains. Similar results hold for the case where control is already held by an acquiring

firm, i.e. acquirers do not lose by merger if they held prior control, but their value is reduced if they did not have prior control. This may be due to the reason that acquirers who hold prior control are involved in the target firm and hence are familiar with the business. Van den Honert et al, used an extension of the market model referred to as the 2-factor market-industry model that allows for the removal of both market and sector effects.

When relative size was considered it was observed that acquirers on average lost value by merger regardless of whether the target was small or large. However, the target firms gained in both instances. An identical result held when medium of exchange was the variable under consideration – acquiring firms decreased in value, and targets gained.

A point that arises from van der Honert's study is that the acquiring firms involved in merger activity do not tend to benefit in the short term from the merger while the target firms do experience abnormal positive returns around the announcement date.

In an empirical evaluation done on the premium on acquisition in South African mergers, Affleck-Graves, Burt and Cleasby (1988), the results

indicated that in the South African context the average premium paid on acquisition is of the order of 30-40%. This is approximately the same as that paid on other major exchanges. Only the price/earnings ratio and relative size, to a lesser extent, significantly correlates with the premium. In both cases, the correlations were positive, indicating that a higher P/E ratio in the target company and/or a target company, which is large relative to the acquirer, will result in a higher premium on acquisition. The results in that study indicate that a cash payment remains the most popular method of payment in South African mergers, followed by an equity swap.

A recent US study was done by Franks, Harris and Titman (1991) on post-merger share-price performance of acquiring firms. Their paper investigates share-price performance following corporate takeovers. Over a long time period, postmerger performance should be zero in an efficient market and the entire valuation effect associated with the combination should occur, on average, at the time of the announcement.

They use multi-factor benchmarks from the portfolio evaluation literature that overcome some of the known mean-variance inefficiencies of more traditional single-factor benchmarks. Studying 399 US takeovers

transacted in the 1975-1984 period, Franks et al conclude that previous findings of poor performance after takeover are likely due to benchmark errors rather than mispricing at the time of the takeover.

In a US study done on Post-Merger Performance of Acquiring Firms by Agrawal, Jaffe and Mandelker (1992), the evidence on post-merger performance of companies over the period 1955 to 1987 on the New York Stock Exchange (NYSE) was examined. Two methodologies were employed each of which adjusts for both beta risk and market capitalisation. All stocks on the NYSE were ranked according to their market capitalisation. As there was a clustering in a certain size category, an explicit adjustment for firm size seemed to be important. The first method measures a stock's abnormal performance. This approach calculates a different beta for each security over the entire post-acquisition period. The second approach uses a methodology that combines an adjustment for firm size. In this method a different beta is calculated for each month relative to the event, assuming that this beta is identical for all acquiring firms.

Agrawal et al (1992), found that stockholders of acquiring firms suffer a statistically significant loss of about 10% over a five-year post-merger

period. Their evidence suggests that neither the firm size nor the beta estimation problems are the cause of the negative post-merger returns. The results were inconsistent with the hypothesis that the result is caused by a slow adjustment of the market to the merger event.

In a US study on Postacquisition Performance of Acquiring Firms Loderer and Martin (1992) conducted the experiment with a comprehensive sample of firms on the NYSE during the years 1966-1986. The crux of the experiment was to test whether modified market model measures of negative abnormal performance become insignificant when risk is appropriately accounted for. One possible scenario is that during times of intense acquisition activity, firms that want to fund their acquisitions drive up the risk-free rate. When the activity subsides, the risk-free rate could decline. Preacquisition estimates of the market model intercept could therefore be correspondingly too high, which could lead to downward bias in the computation of postacquisition abnormal returns.

Loderer and Martin found that there is some negative performance for the first three years, especially during the second and third years after the acquisition.

This section concludes with a discussion on the protection of stockholders or conversely, management entrenchment. In response to the wave of takeovers in the late 1970's, many corporations have adopted amendments that make it more difficult for potential acquirers to gain control. More recently, senior executives have also begun to grant themselves large bonus payments in the event their firm is acquired. These "porcupine amendments" and "golden parachutes" have become standard strategies designed by investment bankers.

The widespread adoption of such measures has further fuelled the debate about the genuineness of management's service to its stockholders. Such actions clearly increase the costs of changing corporate control, reducing the profitability and the probability of takeovers.

In defence of the practice of instituting "golden parachutes", it is argued that guaranteed compensation agreements strengthen the incentive for target managers to act in their stockholders' best interests when faced with an acquisition proposal. To the extent that potential bidding companies could be deterred by the additional cost of a "golden parachute", it may be worth less to stockholders as a correction of

management incentives, than the loss resulting from the reduced probability of takeover.

2.3 REASONS FOR FAILURE

This section discusses the reasons why corporate marriages fail. Information from two sources is drawn because of their relevance to our case study. McCarthy (1963) postulates five possible reasons and Arnold (1998) looks at three recurring themes, because mergers fail for a number of reasons.

This chapter will be concluded with the reasons for the failure of business combinations from the standpoint of the acquirer. The relevance to our case study is indicated where applicable.

In an article by McCarthy (1963:40), the following reasons are included:-

- "Lack of knowledge of the history and potential of the industry of the seller". This does not apply in the Wayne Rubber merger as both companies belonged in the rubber industry and were competitors.
- "Failure to fully investigate the seller's motives for selling and the contribution required in management and financing in order to

operate the successfully". This is not applicable in our case study as the offer to purchase was made by the acquirer.

- "Failure to determine how the acquisition will fit into the combined enterprise and its expected contribution in profits, management, marketing, and human resources".
- "Making sweeping changes in management, personnel, policies, and procedures after consummating the transaction but before determining what made the acquired company successful". In the process of merging the Phoenix and Wayne divisions under one management team in 1992 a prolonged strike culminated in the closure of the Phoenix plant, while the full rationalisation programme was being implemented. This severely impacted on the results for the year to 30 June 1992.
- "Being overeager to effect the deal and accordingly paying too high a price in terms of capital stock or cash for what is obtained".

In the Wayne merger the share price two weeks before announcement date (12 May 1989) was 75 cents per share. Phoenix issued shares to Conshu at 95 cents per share for 82% ownership. On 30 June 1989, a day before takeover, the net asset value per share stood at 44 cents per share.

Why do mergers fail to generate value for acquiring shareholders?

A definitive answer as to why mergers fail to generate value for acquiring shareholders cannot be provided, because mergers fail for a host of reasons. However, there appear to be three recurring themes (Arnold, 1998: 876-877):

- The strategy is misguided. The strategic plans turned out to be value destroying instead of wealth creating. In the Wayne Rubber merger two businesses with successful managements and products/product market segments were being brought under the control of a single management. This alienated the acquired management team and the two companies workforces.
- Over-optimism. Acquiring managers have to cope with uncertainty about the future-potential of their acquisition. They may underestimate the costs associated with the resistance to change they may encounter, or the reaction of competitors. A prolonged strike culminated in the closure of the Phoenix plant, while the full rationalisation programme of combining the two management teams was in progress and this destroyed shareholder value.
- Failure of integration management. One problem is the rigid adherence to prepared integration plans. Usually plans require

dynamic modification in the light of experience and altered circumstances. The integration programme may have been based on incomplete information and may need post-merger adaptation to the new perception of reality.

Common management goals and the engendering of commitment to those goals is essential. The morale of the workforce can be badly damaged at the time of a merger. The natural uncertainty and anxiety has to be handled with understanding, tact, integrity, and sympathy. Communication and clarity of purpose are essential as well as rapid implementation of change. Cultural differences need to be tackled with sensitivity and trust established.

The absence of senior management commitment to the task of successful integration severely dents the confidence of target and acquired managers.

3. THE PHOENIX RUBBER/WAYNE RUBBER MERGER

The chapter discusses the history of Phoenix Rubber from its incorporation in 1981, to its listing in 1987, the rationale behind the merger with Wayne Rubber in 1989, until the de-listing in 1993. Conshu had used Phoenix as a vehicle for the reverse listing of Wayne.

Phoenix Rubber (Proprietary) Limited was a company that was started by three shareholders, Messrs H.W.Schutz (German), L.T.Daniel and T.N.Harrington and commenced for business on 1 July 1981. It was a manufacturer of a wide range of industrial rubber components supplied mainly to the mining, construction, and automotive sectors. After consistently performing well with profits in excess of one million rands per annum, a minimum threshold at which an application for listing could succeed, the company decided to initially list on the Development Capital Market (DCM) in October 1987 in order to raise additional capital for further expansion.

Phoenix Rubber Limited was listed on the JSE on 6 October 1987. On the 12 May 1989 an announcement was made that Phoenix Rubber Limited was to acquire Wayne Rubber (Proprietary) Limited, wholly owned by

Conshu Holdings Limited (a listed subsidiary of South African Breweries Limited).

For the acquisition on 1 July 1989, Phoenix Rubber Limited had to issue 48.2 million shares to Conshu Holdings Limited. The purchase consideration was the business and assets of Wayne. By this additional issue of shares, Conshu Holdings acquired 82% of the enlarged share capital of Phoenix Rubber Limited. In effect, it was a reverse takeover.

After the merger, the name of Phoenix Rubber Limited was changed to Wayne Manufacturing Limited on 13 August 1989. A dormant company changed its name to the original Phoenix Rubber (Proprietary) Limited. Wayne Manufacturing Limited became the holding company of Phoenix Rubber (Proprietary) Limited and Wayne Rubber (Proprietary) Limited, both wholly owned subsidiaries

Figure 1 below shows the structure of the companies before and after the merger between Phoenix and Wayne in July 1989.

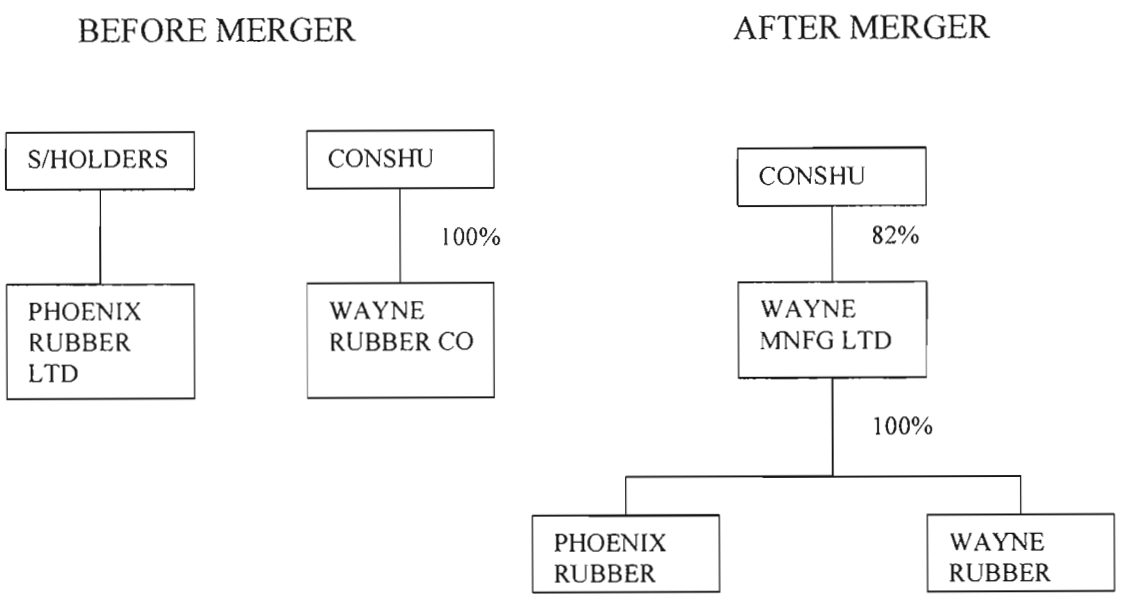


FIGURE 1 – COMPANY STRUCTURE

In the circular sent out to shareholders of Phoenix Rubber Limited in May 1989 the rationale for the merger with Wayne Rubber was stated:

"The acquisition by Phoenix of Wayne Rubber, in exchange for the issue to Conshu Holdings (Wayne's parent company) of 48.2 million ordinary shares, gives the enlarged group the strongest platform for expansion in the markets in which it operates".

"In addition, the combined resources of the new Phoenix present significant opportunities for growth into new markets, which would have proved too costly for either operation to contemplate individually.

The backing of Conshu, which will hold 82% of the enlarged share capital of Phoenix, brings another positive dimension and ensures the financial support that will be necessary to implement longer term strategies.

Phoenix, to be renamed Wayne Manufacturing Limited after the merger, will now be the country's dominant supplier in virtually every sector of the rubber processing market, with a customer base ranging from mining and industry to the medical and agricultural sectors".

"Once the merger has been successfully bedded down and the two operations are running smoothly, the enlarged Phoenix will also be in a stronger position to explore opportunities in the export markets in order to complement the growth in the local market".

"The retention of the listing of Phoenix on the JSE will also be an important factor in future plans, as acquisitions are expected to be an integral part of future growth and the use of equity adds another option to be considered in financing these opportunities".

4. FINANCIAL PERFORMANCE OF WAYNE RUBBER PRE AND POST ACQUISITION

Detailed financial statistics are provided in this chapter and this is complemented with excerpts from the company's annual reports and graphical illustrations of the earnings per share and the share price performance. The chapter ends with empirical studies by Bhana (1989), and Bradfield and Hampton (1989) on share price behaviour, and performance of new listings, respectively.

Prior to the Wayne Rubber merger on 1 July 1989, the company had traded as Phoenix Rubber since its listing on 6 October 1987.

The following are the performance indicators pre and post acquisition:-

Table 1 – Performance indicators pre and post acquisition

YEAR	Turnover (R'000)	EPS (cents)	E/Y (%)	P/E	NAV (cents)	D/Y (%)	Share Price (cents)
1988	16,035	9.1	13.1	7.7	37.1	5.3	70.0
1989	21,490	11.6	13.6	7.4	44.3	5.4	85.0
1990	110,634	13.1	21.7	4.6	99.3	8.7	60.0
1991	129,779	15.2	19.0	5.3	108.5	7.5	80.0
1992	129,438	10.2	12.8	7.8	113.5	6.5	80.0
1993	119,588	3.9	7.7	12.9	116.4	2.0	50.0

Explanation to abbreviations

EPS = Earnings per share (Earnings divided by the number of shares in issue)

E/Y = Earnings yield (Earnings per share divided by the market price per share)

P/E = Price earnings ratio (the inverse of E/Y)

NAV = Net asset value (Total shareholders funds divided by the number of shares in issue)

D/Y = Dividend yield (Dividend per share divided by the market price per share)

The earnings per share for Wayne is shown graphically on **Figure 2**

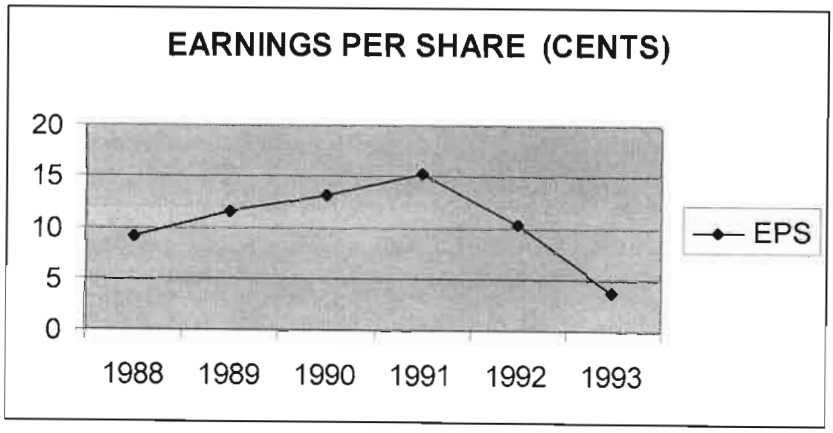


FIGURE 2 – EARNINGS PER SHARE

1989

The financial year ended 30 June 1989 was the first full year of trading after listing in October 1987. The Chairman's review to the 1989 Annual Report stated: "Phoenix Rubber achieved excellent results for the year 1988/1989. Net income after tax increased by 29.8% over the last year despite the higher tax rate and earnings per share increased to 11.6 cents. Turnover increased by 34.0% over the previous year with the economy remaining buoyant throughout the period. A good demand for our rubber products was felt in all our sections".

1990

The Chairman's statement in the Wayne 1990 Annual Report states, "the financial year ending 30 June 1990 has been challenging and exciting for both the company and its executives. The acquisition by Phoenix Rubber Ltd of Wayne's assets from Conshu Holdings and the change of name of your company to Wayne Manufacturing has proved to be worthwhile, despite the fact that the expected synergies are taking longer to achieve than originally anticipated. For the 12 months to June turnover rose to R111-million. A total dividend of 5.2 cents per share has been declared out of earnings of 13 cents a share. Shareholders equity has increased by

R56-million and now stands at R60-million which has had the effect of boosting the net asset value of the share to 99,3 cents".

1991

"During the year under review, Wayne Manufacturing maintained its position as a leading manufacturer of rubber and PVC products, despite the continuing downturn in the business cycle, and on-going social and industrial unrest. Demand declined in both the mining and industrial sectors of the economy, however the company still managed to achieve an increase in turnover – up 17,3% to R129,7 million, and earnings per share - up 16,9% to 15,2 cents", the Chairman's statement to the Wayne 1991 Annual Report concluded.

1992

In the Chairman's statement to the Wayne 1992 Annual Report it is stated that the "the difficult trading conditions were exacerbated by a prolonged strike, which arose out of the merging of the Phoenix and Wayne divisions under one management team at the beginning year. The strike culminated in the closure of the Phoenix plant while the full rationalisation programme was implemented. The results for the year to 30 June 1992 do not reflect the full potential of the synergies to be gained from the above rationalisation. Earnings per share declined by 33 percent,

however they are considered to be satisfactory given the arduous business conditions and the industrial action during the period".

1993

Wayne did not produce an annual report for the year ended 30 June 1993 because of the company's impending de-listing. A document relating to a "scheme of arrangement" was issued in September 1993. This was an offer to minority shareholders for acceptance of a scheme consideration amounting to R71,00 per 100 scheme shares held in Wayne. Minority interests constituted 11,8% in Wayne. Wayne Rubber was to delist on the JSE on 22 October 1993. At the time of de-listing Conshu held an 88.12% interest in Wayne.

FIGURE 3 below illustrates the share performance of Wayne pre and post merger. In February 1989 the share price reached a low of 55 cents but progressively climbed to 90 cents at the end of June 1989, just before the merger. The share price reached a peak of 100 cents in September 1989. Lows were in July 1990 (48 cents), April 1991 (95 cents), August 1991 (100 cents), progressive drops to a low of 45 cents in July 1993 and a price of 63 cents in October 1993, the month of de-listing.

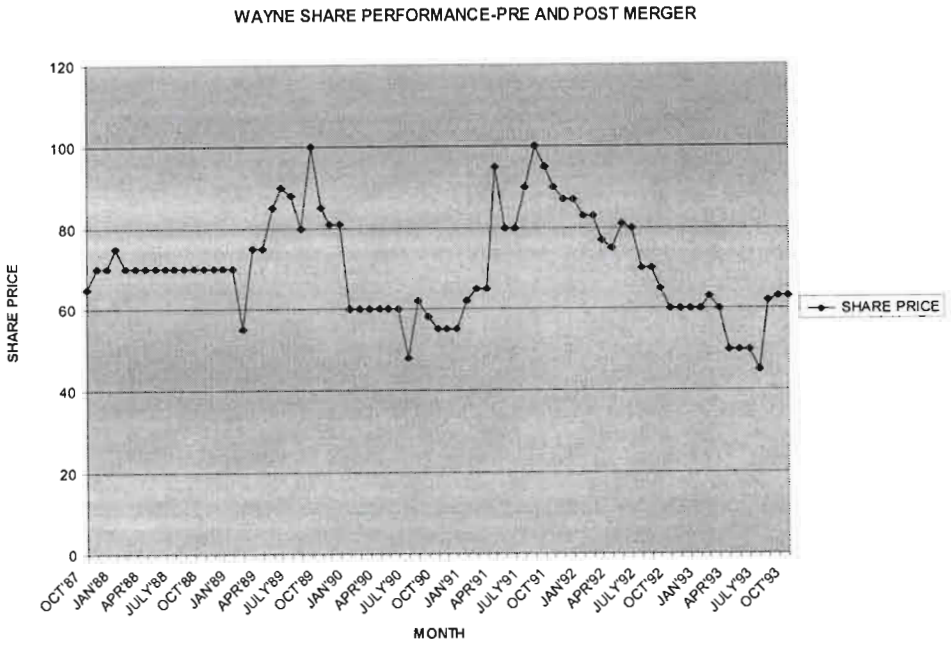


FIGURE 3 – SHARE PERFORMANCE
(An enlarged version is in Appendix 5)

The following explanation appeared in the scheme of arrangement document: "Control of Wayne (then Phoenix Rubber Company Limited) was acquired during 1989 when the Wayne Rubber division of Conshu was sold to Phoenix for an issue of ordinary shares. It was intended that the business of Wayne would be expanded and increased by way of growth both organically and, more probably, by acquisitions utilising share issues. For various reasons, sundry acquisitions sought by Wayne have not come to fruition and the directors of Conshu (the holding

company of Wayne) have accordingly resolved that, in view of the high percentage shareholding of Conshu in Wayne, the continued listing of Wayne is no longer justified".

As stated earlier, the share price two weeks before announcement date (12 May 1989) was 75 cents per share. Phoenix issued shares to Conshu at 95 cent per share for 82% ownership. On 30 June 1989, a day before takeover, the net asset value per share stood at 44 cents per share. This meant that the market value as indicated by the price per share (85,00 cents) on the JSE, exceeded the book value as expressed by the net asset value per share (44,34 cents), by 1,92 times.

From **Table 1**, the EPS for the two years after merger, years 1990 and 1991, increased from 11.6 cents in 1989 to 13.1 and 15.2 in years 1990 and 1991 respectively. The P/E ratios correspondingly decreased because of the higher earnings per share and a share price trading between a band of 60 cents and 80 cents.

In year 1992, the EPS dropped to 10.2 cents (from 15.2 in 1991) because of the strike and higher costs attributable to rationalisation coupled with a

drop in turnover. The share price stood at a level of 80 cents at 30 June 1992 probably because of the share being tightly-held, 82% by Conshu.

The full impact of the rationalisation, effects of industrial action, coupled with business downturn, resulted in the turnover plummeting by 7.6% from R129-million to R120-million in June 1993. EPS dropped from 10.2 cents to 3.9 cents. In June 1993 the share price stood at 50 cents per share on the JSE, NAV was 116.4 cents, and the Market/Book ratio was down to 0.43. In June 1989, this was 1.92.

The share prices during the final months of listing were as follows;-

Table 2 – Prices for final 5 months of listing

Month	**Share Price (cents)**	**NAV (cents)**
June 1993	50,00	116,40
July	45,00	not available
August	62,00	not available
September	63,00	not available
October 1993	63,00	not available

Clearly, the benefits of a merger were not reflected in the share price nor did it translate in the financial performance of the company post merger.

The continued listing of Wayne on the JSE under the Chemicals and Oils sector no longer became justifiable, firstly from the continued adverse public exposure and secondly from the onerous reporting requirements imposed on listed companies. Conshu decided to de-list Wayne on 22 October 1993.

Two studies done on new listings, share price behaviour on the JSE (Bhana, 1989), and post-listing performance of new listings on the same bourse (Bradfield and Hampton, 1989), are summarized below.

Bhana (1989) presented a paper to determine the price behaviour of new listings on the JSE during the period 1985-1987. This is pertinent to our case study as Phoenix listed in October 1987. The year 1987 recorded the highest number of new listings in a single year during the 100-year history of the stock exchange.

A major feature of the 1985-1987 new issue market was that for the first time since its creation in August 1984, investors showed interest in the Development Capital Market (DCM). The DCM was specifically established to give the smaller, entrepreneurial companies, which could

not meet the stringent rules for listing, an opportunity to raise capital for new development. This, in turn, attracted a new type of investor who was prepared to accept higher risks for the possibility of large returns. Phoenix listed on the DCM in 1987.

Most new issues during the 1985-1987 period opened at a huge premium over their issue price. Bhana suggests that many new listings were priced too low. Many companies that listed during this period were small (high-risk) companies in the early stages of their development. These companies had to offer investors adequate risk premiums for the uncertainty during the post-listing period. Bhana used the Sharpe-Lintner-Mossin capital asset pricing model developed by Bowman (1983) to calculate the residual in each period, i.e. the 'abnormal return' for a security.

The underperformance of new listings on the DCM was evident due to the high-risk nature of companies on this sector. During the buoyant market conditions preceding the 19 October 1987 stock market crash, prices of new listings on the DCM rose more steeply than the rest of the market. However, after the market crash the DCM underperformed the rest of the market.

Phoenix shares opened on 6 October 1987 at 80 cents on an offer price of 60 cents per share before dropping at month end to 65 cents as per Figure 3 and Appendix 5. In December 1988 Phoenix was promoted to the main sector of the JSE. The share was never regarded as a high-risk security.

No plausible explanation can be offered by Bhana for the poor performance of the sample of new issues during the one-year period immediately after the listing. Phoenix was not part of the sample selected. A common belief among several market observers is that investors often overreact to the announcement of major corporate events. The huge premiums accompanying a listing during the study period can be regarded as an over reaction to the favourable news associated with the market listing.

Bradfield and Hampton (1989), examine the post-listing performance of new issues on the JSE. On the basis of an empirical study conducted over the 1975-1986 period comprising 77 listings, evidence is presented indicating that abnormal returns do occur during the post-listing period. The excess return model was used to estimate returns that were

higher/lower than expected on the basis of the systematic risk of the security. Betas for each security were estimated using the well-known market model, i.e. monthly returns regressed against the corresponding returns on the JSE Overall index for one year subsequent to the listing date.

The existence of hot and cold issue periods were found by Bradfield and Hampton (1989) to be evident on the JSE and the performance in the aftermarket is found to differ substantially in these periods. In hot issue periods abnormal returns are found in almost the entire 12-month period subsequent to listing, with excess returns reaching as much as 7% per month during the subsequent year.

In the Wayne Rubber merger higher share prices occurred during two periods, the 10 months March 1989 to December 1989, and the 15 months April 1991 to June 1992. It should be noted that between March 1988 and January 1989 the share price remained at 60 cents, as there were no trades.

The first period is before and after the merger in July 1989. An indication of insider trading is evident as the announcement was made on 12 May

1989. The share stood at 55 cents per share in February 1989. Appendix 6 illustrates how the share price moved to 75 cents in March 1989 and moved in an average band of 84 cents before falling to 60 cents in January 1990. The average return on the share price was 59.52% as against the market's return of 29.64%. This is an indication that the abnormal effect was over by the end of December 1990.

The second period of higher share prices occurred between April 1991 and June 1992 during the period of rationalisation of Phoenix Rubber and the expectation of continued good performance; which did materialise in June 1991. Appendix 6 illustrates how the share price moved to 95 cents in April 1991 and moved in an average band of 85.5 cents before falling to 70 cents in July 1992. The average return on the share price was 26.18% as against the market's return of 20.22%. Subsequent to this, a period of prolonged strike culminated in the full closure of the Phoenix Rubber plant while the full rationalisation programme was being implemented.

5. DIFFERENT VALUATION METHODS

The purpose of valuing a business is to establish how much is a business worth. Four valuation methods are used namely, net asset value, discounted free cash flows, dividend growth model, and price earnings ratio. For the CAPM calculation, the beta was derived from the regression in Chapter 6 and this was assumed as constant throughout the period. The favoured method is the discounted free cash flow method because of its conceptual and theoretical content.

One of the vital, decisive factors in corporate marriages is the relatively simple issue of the valuation of businesses. How much is a business worth at a given time? A glib answer is the amount of money a buyer is prepared to pay for it. But how does the buyer arrive at the proper price? Putting in an offer for a company should not be too contrived on the face of it, but proper pricing of a business can give rise to numerous difficulties. The price to the vendor is an entirely different matter from the price the buyer is prepared to pay. The value of a business depends upon the economic and industrial climate, on whether or not the business activity is considered 'fashionable', on the location of the activity, on the company's research and development programme, on the quality of management, on

the assumed economies accruing from closer integration of the two firms and on many other factors.

The purchase of a company, for instance, on past considerations alone is nothing more or less than retreat into history. Past financial achievements are not necessarily indicative of future earnings, much less of future performance. Nor is it possible to access the real benefits of a proposed integration until consultants have examined the feasibility of gearing the two companies' operations to each other. The market for the products made by the firm to be acquired should be carefully examined and evaluated since yesterday's sales are not indicative of tomorrow's demand. Only when all these considerations have been examined can the value of a business be assessed - a value which is fair to buyer as well as to the seller.

A purchase price or exchange ratio for securities of two companies in a business combination is generally arrived at as the result of negotiation. In reaching an agreement on price, a number of factors should be considered, some of which are readily susceptible to evaluation, and some not. If it were possible to precisely determine the future earnings contribution and dividend-paying capacity to the combined enterprise of a company to be acquired, return on investment should be the sole criterion of present

value, and every other factor discarded. Unfortunately, one cannot foretell the future; and, therefore, historical and current data traditionally have been as indicative of future earnings and dividend prospects.

Nevertheless, experts recognise prospective earnings to be the most important factor in valuing operating companies whose worth is largely dependent on continuance as a going concern. On the other hand, for companies with substantial holdings of disposable assets, such as securities or real estate, or operating companies that have been sustaining losses for several years or more, overall valuation might be related more closely to the fair market or liquidating values of the underlying assets.

In addition to potential earnings and net assets, which are acknowledged factors, dividend-paying capacity; market prices of capital stocks, in relevant cases; and other considerations such as the acquisition of management and technical know-how are important in valuing a company.

Four valuation methods will be used:-

1. Net Asset Value (NAV)

   Purpose: To calculate market to book ratio and thus establish whether the market to book ratio falls markedly in the post-merger period thus either confirming or negating the first sub-hypothesis.

2. Discounted Free Cash Flows (with hindsight)

   Purpose: To compare with 95 cents paid by Conshu

3. Dividend Growth Model (DGM)

   Purpose: To compare with 95 cents paid by Conshu

4. Price Earnings Ratio (P/E)

   Purpose: To compare the valuation with the 95 cents paid by Conshu

Overall, the purpose of methods 2, 3, and 4 is to establish whether the second sub-hypothesis - that the value of Phoenix is lower than the price paid by Conshu - is true.

Net Asset Value (NAV)

The balance sheet seems an obvious place to start when faced with the task of valuation. In this method the company is viewed as being worth the sum of the value of its net assets. The balance sheet is regarded as providing objective facts concerning the company's ownership of assets and responsibilities to creditors. Fixed assets are recorded along stocks, debtors, cash and other liquid assets. With the deduction of long-term and short-term creditors from the total asset figure we arrive at the NAV, which is often called equity shareholders funds.

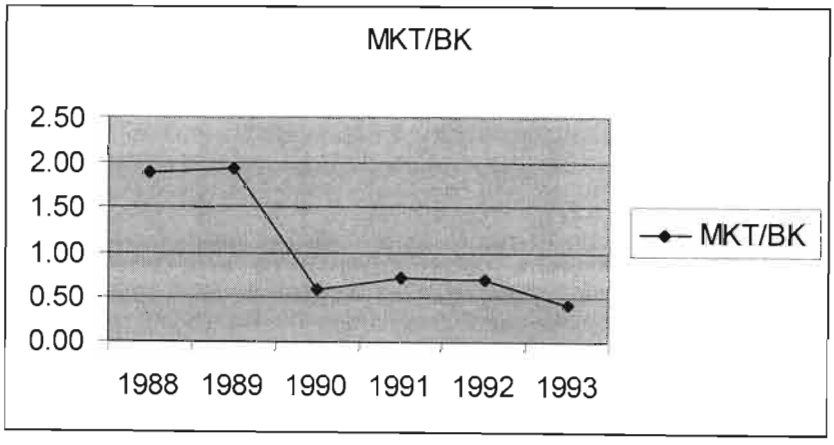
Many stockholders regard book "net worth" as a minimum valuation of their company. Accordingly, net book equities, giving effect sometimes to investment replacement costs, should be considered in valuing a company for acquisition or merger purposes.

Audited balance sheets and income statements for financial years 1988 to 1993 are tabulated as per Annexure 1 and 2. This is the entire period of listing. It includes the financial years 1988 and 1989, which were pre acquisition. The NAV for each year will be divided by the number of shares in issue, to arrive at the NAV per share.

Table 3 below shows the summarized data: -

Table 3 – Salient financial data for years ended 30 June

Description	1988	1989	1990	1991	1992	1993
Shareholders funds (Rm)	3,9	4,7	60,3	65,9	69,0	70,7
No of shares in issue (m)	10,4	10,7	60,7	60,7	60,7	60,7
Net asset value (cents)	37,1	44,3	99,3	108,5	113,5	116,4
Share price (cents)	70,0	85,0	60,0	80,0	80,0	50,0
Market/book ratio	1.9	1.9	0,6	0,7	0,7	0,4



The market to book ratio is depicted graphically on **Figure 4**

FIGURE 4 – MARKET/BOOK RATIO

Since acquisition on 1 July 1989, Wayne has under performed relative to the pre-merger period as the book value is below the market value whereas it was previously above. In other words, the share is trading at a huge and increasing discount to the net asset value per share whereas it previously traded at a large premium. The situation improved slightly in 1991 and 1992 when the share traded at 80 cents. Four months before it de-listed in June 1993, Wayne's share traded at 43% of its net asset value.

Thus the first hypothesis is established to be true.

Discounted Free Cash Flows (with hindsight)

An income-based valuation method is cash flow. In business it is often said that 'cash is king'. From the shareholder's perspective the cash flow relating to a share is crucial - they hand over cash and are interested in the ability of the business to return cash to them.

The cash flow approach involves the discounting of future cash flows, that is, the cash generated by the business after capital investment in fixed assets, working capital increases and tax payments. To derive the cash

flow attributable to shareholders, any interest paid in a particular period is deducted. These future cash flows are discounted at the required rate of return i.e. the discount rate. In the case of Wayne, CAPM was used for the cost of equity capital.

Free cash flows are calculated using information from the audited financial statements of Wayne for the four years 1990 to 1993, after merger. Year 1 is 1990 through to year 4 as 1993. The full workings are shown on Appendix 3.

The discount rate was calculated as hereunder: -

RISK FREE RATE (RSA 13% 2005) = 17.17%

(see page 60)

OVERALL MARKET RETURN (1.422 x 12) = 17.06%

(The average of 1.422 is derived from Appendix 6)

BETA (FROM REGRESSION) = -0.039339 (LEVERED BETA)

(The beta is obtained from the regression in Appendix 7)

Calculation of cost of equity

For this purpose the Capital Asset Pricing Model (CAPM) will be used and the basis of arrival of the constituents of this formula will be discussed below:-

$$CAPM = Rj\ (Ke) = Rf + \beta\ (Rm - Rf)$$

CAPM is the dominant model for estimating the cost of equity. The great advantage claimed for using the CAPM over other methods of estimating the cost of equity is that the finance manager can calculate a cost that reflects investors' perceptions of the riskiness of his company's shares. When combined with the cost of other sources of finance, this can be used to calculate the weighted average cost of capital that can then be used as a cut-off rate to discount cash flows and determine the acceptability of capital investment proposals.

Ke = cost of equity

Rf = interest rate available on a risk free bond

Rm = return required to attract investors to hold the broad market portfolio of risky assets

β = the relative risk of the particular asset

Rf = for risk free rate the long bond RSA 2005 as June 26 1989 was used as this is a gilt rate (Financial Mail, June 30 1989).

Rm = the monthly return achieved on the ALSI index was averaged over the 72 months period.

β = as the beta was not available for Phoenix Rubber, the beta for the whole period that Phoenix was listed was obtained from the regression of the market model. Assumption: that it stayed the same throughout the period of study.

The beta is a levered beta (βe) for a company with debt. Beta is broadly measured by comparing the change in share price for a period, usually one month, with that of a general stock market index. If this process is repeated a number of times its results can be plotted on a graph. When a share appears insensitive to market price changes, as in the case of Wayne, this attributes to it an unrealistic low beta.

Rj = 17.17 - 0.039339 (17.06-17.17)

= 17.17 - 0.039339 (-0.11)

= 17.17 + 0.004

= 17.17%

The discount factors were computed as follows-

For year 1 it was 1/(1.0+0.1717) = 0.8535

For year 2 it was 1/(1.0+0.1717)(1.0+0.1717) = 0.7284

For year 3 it was 1/(1.0+0.1717)(1.0+0.1717)(1.0+0.1717) = 0.6217

For year 4, it was 1/(1.0+0.1717)(1.0+0.1717)(1.0+0.1717)(1.0+0.1717) = 0.5306

The cumulative net present value at year 4 (in 1993) was R20,533 m. To arrive at the terminal value in 1993, the earnings for that year of R2,349 was multiplied by the P/E of 12.9 to arrive at the value for the firm of R30,302. The latter was multiplied by the discount rate of 0.5306 to arrive at a discounted terminal value of R16,078.

The value arrived at of R16,078m, plus the cumulative net present value of R2,330m summed up to a total value for the company of R18,408m

A value per share of 30 cents is arrived at by dividing the total value for the company, by the number of shares in issue of 60,732m.

Dividend Growth Model (DGM)

When dividend-paying capacity is a factor, it should be based on indicated potential rather than the historical record. Dividends paid in the past may have no relation to the potential in this regard, particularly in a

closely held company like Wayne where here is every tax incentive to hold down dividend payments. Further, a company embarked on a substantial program of capital expansion or improvement may have financed a large part of such costs by the retention of more than a normal share of current earnings.

The dividend valuation model is based on the premise that the market value of ordinary shares represents the sum of the expected future dividend flows, to infinity, discounted to present value.

If the annual rate of growth in dividends tracks that of earnings at an average 7%, over four years, and the cost of capital remains constant at 17.17%, cost of equity per CAPM, then the expected share price can be estimated using the dividend growth model. It is to be noted that the average earnings growth would be higher had there not been zero growth during the last two years.

With the assistance of the CAPM to determine the required rate of return, the dividend growth model is probably the most widely used as one of the methods to assist in establishing the value of an ordinary share. The

model is based on the assumption that earnings growth is at a constant rate and that the dividend policy is to pay dividends in a fixed proportion to earnings. The valuation formula is as follows:

$$Po = \frac{Do(1+g)}{k-g} = \frac{D1}{Ke-g}$$

Do = the dividend paid now

D1 = expected dividend in year 1 (1990) = 5.2 cents

Ke = cost of equity (rate of return) = 17.17%

g = constant growth rate = 7%

$$Po = \frac{5.2}{0.1717-0.07} = 51 \text{ cents}$$

The 7% rate of growth was calculated using the average for four years dividends declared (with hindsight) per table 4 as follows: -

Table 4 – Dividends per share declared and growth

Year	Period	Dividends (cents)	Growth (%)
1989	Yr 0	4.6	n/a
1990	Yr 1	5.2	13.04
1991	Yr 2	6.0	15.39
1992	Yr 3	5.2	zero
1993	Yr 4	1.0	zero

The valuation arrived at is with hindsight as the price is based on future actual financial data that was available. If these were not available and an assumed higher growth rate was used the valuation would be higher. This is because the higher the growth rate deducted from discount factor used as the divisor, the higher the computation of the quotient (share value).

It is felt that the value of 51 cents for Wayne is reasonable in relation to the two valuations arrived at using the other two valuation methods.

Price Earnings Ratio (P/E)

The most popular approach to valuing a share is to use the price-to-earnings ratio. This compares a firm's share price with its latest earnings

per share. Investors estimate a share's value as the amount they are willing to pay for each unit of earnings

The increase in share price and resulting capital gain is one of the main attractions of investing in shares. The P/E ratio measures the multiple of earnings for which the shares of a company are selling and is calculated as follows:

$$P/E = \frac{\text{Market price of share}}{\text{Earnings per share}}$$

Table 1 shows the P/E ratios for Wayne for the financial years 1988 to 1993.

The ratio is considered as a yardstick for investor sentiment with regard to a share. It is a fairly crude measure, but should be included when valuing the shares of a company. It is usual to take the P/E of a similar listed company and by applying it to a company, a reasonable estimate of the share price can be obtained. To arrive at the projected share price for Wayne the P/E for the Chemicals, Oils and Plastics sector for June 1989 of 12.65 was multiplied by the Phoenix earnings per share for June 1989 of 11.6 cents, per Table 1 in Chapter 4. (The P/E of 12.65 was obtained

from Econometrix and is according to JSE data stored on their time series data base for the Chemicals and Oil board in June 1989.)

This implies that the value of a share may be determined using the following formula:

Po = P/E x EPS i.e. 12,65 x 11.6 = 147 cents

where Po = the value of an ordinary share

P/E = the price earnings ratio of the Chemicals, Oils and Plastics sector in June 1989

EPS = the earnings per share for Wayne in June 1989

Shares that are expected to perform well tend to have high P/E ratios because investors expect the future profits to be high and are therefore prepared to pay more for the shares. A company which has poor future prospects will reflect a low P/E ratio.

Valuations are necessary whenever an investor wishes to purchase a business or shares in a business. Valuations relate only to future expectations and all valuation decisions require predictions about anticipated future events. Once a valuation has been performed the value

is compared with the price. Only if the value is greater than the price will the purchase transaction take place.

The favoured method is to discount all future cash flows by the required rate of return. This is fundamental in all aspects of finance and is conceptually sound and theoretically correct. It is made difficult however by the uncertainty surrounding the predictions of future cash flows and the necessity of determining an appropriate rate of return with which to discount the stream of predicted cash flows to arrive at an appropriate valuation.

The results under the four methods may be summarised as follows:

Method 1: Net Asset Value (June 1989)	44 cents
Method 2: Discounted FCF's	30 cents
Method 3: Dividend Growth Model	51 cents
Method 4: Price Earnings Ratio (June 1989)	147 cents

The price paid by Conshu in 1989, of 95 cents was in excess of the value of 30 cents calculated under favoured method 2, being the Discounted Free Cash Flows, and under method 3. However, under method 4, the Price Earnings Ratio, the actual price paid by Conshu was at a discount to this valuation. (This valuation uses only information available at the time, whereas methods 2 and 3 include subsequent events.)

It is assumed that Conshu used the prevailing share price of 75 cents in March/April 1989, at the time of negotiations, and applied an expected growth factor of 1.25, in arriving at the purchase price of 95 cents. In June 1989 the share price in fact reached 90 cents and peaked to 100 cents in September 1989 before falling to lower levels. History has shown that the share price averaged 70 cents per share from date of merger to de-listing.

In conclusion, the share was overvalued in terms of method 2 and 3. This means that the acquiring shareholders did not benefit from the merger, thus confirming sub-hypothesis 2 of an overpayment for Phoenix shares by Conshu.

6. USE OF MARKET MODEL TO ESTABLISH ABNORMAL RETURNS

In order to see the effects of events including the merger announcement with Wayne Rubber, market effects have to be removed from the share price by running a simple regression through the data. This is known as the market model. What is derived from the equation is the abnormal return (residuals). The graph of the monthly cumulative average residuals show positive abnormal returns prior to announcement date, increasing returns eight months after merger but declining abnormal returns thereafter.

There is always clearly some factor in the marketplace that affects all stocks to a greater or lesser extent. The market model is predicated on the fact that most stocks tend to go up and down together. In mathematical terms, it is expressed simply as a linear equation, which measures the degree of co-movement between an individual stock and the market.

The important things about the market model are that: -

(a) It is based on the observable fact that most stocks tend to go up and down with "the market" to a greater or lesser extent, and

(b) It gives us a practical way of measuring the risk of an individual security or portfolio of securities.

Some form of the market model, is invariably used to measure investment risk. By comparing the behaviour of a stock against the behaviour of the market, we can measure the degree to which that particular asset tends to move with the market ("systematic" risk, as measured by beta), and the extent to which it tends to move independently (error term or "residuals"). Residuals are "unsystematic" risk and can be diversified away. We may also determine whether a price movement is an exaggerated or a subdued version of the general stock; that is, whether an individual stock has a "systematic" risk that is greater or less than the average "systematic" risk of the market (MacQueen, 1992).

In the Wayne Rubber case, in order to see the effects of specific events, including the merger with Wayne Rubber, on Phoenix Rubber, we will have to remove the market effects from the share price data by running a simple regression through the data using the equation:

$Rj = \alpha + \beta.Rm + e$

α = alpha term is a constant, derived from the regression, that indicates the abnormal return for the entire period that Phoenix was listed

Rm = the returns on the All share index for a time interval, in our case monthly

e = error term, i.e. the residuals, derived from the regression, which shows the effect of the events of each time interval (in our case, month).

This is the market model – a single index model of share price behaviour – often used in event studies – the beta (β) is calculated from the model and applies for the whole period. This is not the CAPM so one does not need a risk-free rate or an equity market premium.

What you derive from the regression is the abnormal return:

The alpha (α) term (a constant that indicates the abnormal return for the period as a whole - in our case the entire period during which Phoenix was listed)

And the error (e) term or 'residuals', which shows the effect of the events of each time interval (in our case month)

The monthly returns on the share and on the market were calculated using the formula (P1- Po)/Po from the data in Appendix 4 and are reflected in Appendix 6.

A linear regression was done on the above data, the results of which are shown in Appendix 7. The Regression analysis, is for the entire period of the listing with the monthly returns (CAR) regressed against the returns for ALSI for the entire period from listing to delisting i.e. October 1987 to October 1993.

The following results emerge from the regression:-

Seventy two observations were made. The alpha is 0.01446, the student t-stat of 1.910 is close to 2 which indicates that the alpha is significant, i.e. the result is reliable. The regression analysis indicates that there is no relationship whatsoever between the ALSI and the Wayne share price as the Beta is negative (-0.03934) and not significant with a t-statistic of –0.621.

The following results were produced:-

Table 5 – Regression results using ALSI

Period	Constant (alpha)	t-stat	Beta	t-stat
Oct87/93	0.01446	1.910	-0.03934	-0.621

(Extract from Appendix 7)

While the removal of the market effects is thus not particularly meaningful, the subsequent focus on non-market residuals can nevertheless be meaningfully done.

It must be borne in mind, however, that these residuals will reflect all company specific risk and not only that relating to the merger (the beta being insignificant also means that there may be some market effects in the residuals.)

The cumulative average residuals (CAR) are reflected in Appendix 8 and graphically illustrated in Figure 5 and Appendix 9.

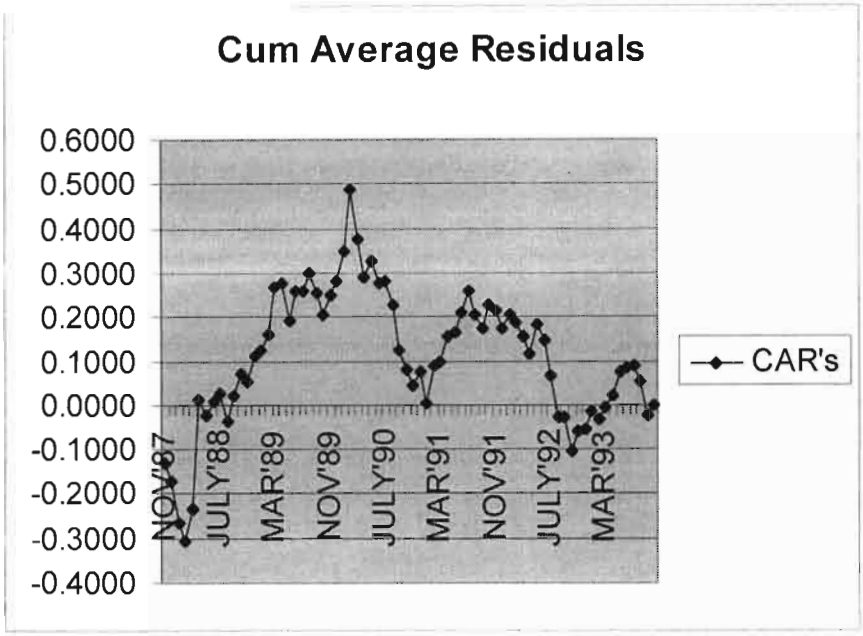


FIGURE 5 – CUMULATIVE AVERAGE RESIDUALS
(An enlarged version is in Appendix 9)

In the Wayne Rubber merger positive abnormal returns occurred prior to merger and declining returns thereafter. Two significant periods are evident when negative abnormal returns prevailed. The first of such periods started as from the time of listing in October 1987 and continued until April 1988. This correlates with the study by Bhana (1989) when it was found that the DCM sector underperformed the rest of the market after the stock market crash of October 1987. The second instance of significant negative abnormal returns occurred during the period August 1992 to March 1993. This coincides with the period of upheaval when there was industrial action and a rationalization programme was being

implemented during which earnings declined by 33%. Such a situation is regarded as unsystematic risk but because Conshu owned 88.12% of the shareholdings at that stage, the risk could not be diversified away and this lead to negative abnormal returns. An indication of insider trading is evident in the trend line showing increasing abnormal returns before the merger announcement date of 12 May 1989.

The abnormal returns peaked in February 1990 on the back of sparkling results of the target company for June 1989, but declining thereafter and is consistent with established literature. This is an indication of a decline in shareholder value to acquiring shareholders.

In a study by Affleck-Graves, Flach and Jacobson (1988) using the market model, they found that using sector indices in conjunction with the market index does not significantly alter the interpretation of the results. This similarity can possibly be explained by the fact that the sector indices show a high degree of co-movement with the market and is consistent with the absence of any significant 'industry' effects on the JSE as found by Visser and Affleck-Graves in a study in 1983.

Their study also indicated definite positive abnormal returns to the shareholders of the acquired companies in the period preceding the announcement, in the case of Wayne, 1 July 1989.

In general, therefore, the results in the Affleck et al (1988) study indicate that the overall conclusion that shareholders of the acquired companies gain from merger activity and that shareholders of the acquiring companies do not, is unaffected by the methodology used; market index or sector/industry index.

7. CONCLUSION

It is not known what valuation method Conshu used in arriving at an acquisition price of 95 cents per share for Wayne in 1989. A P/E ratio of nearly 8 was implied, on a share price of 95 cents and a projected earnings in the first year (1990) of 12 cents i.e. 20% onto the 10 cents per share expected/forecast for 1989.

The financial performance of Wayne since merger was lack-lustre and profitability deteriorated from 1992 until de-listing in 1993. Although the P/E rose to 7.8 times earnings multiple in 1992 this was attributable to the lower earnings (EPS 10.2) and higher share price (80 cents). In 1993 the EPS was 3.9 and the share price 50 cents resulting in a P/E of 12.9.

In the linear regressions that were conducted using the market model to see the effects of the merger by removing the market effects from the share price data the results proved that there is no relationship whatsoever between the Wayne share price and the market (ALSI). The abnormal returns, although declining, were mainly positive with the exception of the two periods October 1987 to April 1988 and August 1992 to March 1993. From past studies carried out a common belief held among several market observers is that investors often overreact to the favourable news

associated with the market listing, Bhana (1989). The abnormal positive effect from March to December 1989 period was during this hot issue period. The effect should have been over by the end of 1989.

In this study it has been established beyond any doubt that benefits did not accrue to the acquiring shareholders of Phoenix Rubber. With one exception, neither set of shareholders benefited, but the original shareholders of Phoenix suffered less than the Wayne Rubber shareholders, in other words they gained more in relation to their proportionate share of the enlarged company.

The founder of Phoenix, Mr H.W.Schutz, took advantage of a "golden parachute" clause in the agreement of merger dated 13 May 1989 relating to restraints of trade, within the first three years of signing the agreement. A 'golden parachute' is an 'escape' clause that is a guaranteed compensation agreement. It has been argued that this strengthens the incentive for target managers to act in their shareholders' best interests when faced with an acquisition proposal.

According to the agreement negotiated by the controlling shareholders of Phoenix and Conshu, Schutz was to have total control of the Phoenix division that operated out of the Jacobs factory. A strike price of R1.20

per share was embodied in the agreement for Conshu to honour the agreement regarding Schutz's total involvement (control). In turn, Conshu would not have to pay out the premium price as the shares of Schutz would be retained in his hands to strengthen the incentive for him to act in the interests of the shareholders.

Due to internal politics regarding control of Phoenix, this did not pan out that way and in March 1992 Conshu paid Schutz the premium price of R1.20 per share, in terms of the agreement, on his shareholding of over 2 million shares. The share was then trading at a price of between 70 and 75 cents. Although it was not envisaged that it should conclude that way, Schutz benefited significantly from the merger.

It is easy to make recommendations with hindsight which is the best foresight but the following may be learnt from this exploratory study:-

(a) The market to book ratio declined markedly after merger reflecting declining company performance for both acquiring and acquired shareholders. The rationalisation of two companies should not be prescribed hastily as no synergy is attained in the short term. A gradual programme of integration would have increased shareholder value and resulted in a contented workforce.

(b) The price paid by Conshu was too high in relation to the value of Phoenix. From an economic standpoint you should not merge unless there is value adding. There should be synergies and this is generally of a financial aspect. This did not prevail in the Wayne merger and the acquiring shareholders did not benefit from the merger.

(c) There were benefits to acquired shareholders prior to merger, but declining abnormal returns thereafter consistent with literature. It was not beneficial to force the acquired company management, who had already been successful in their business, to be foisted with the corporate culture of the acquiring company. This is what happened at Wayne after the Phoenix merger.

In the case of Wayne, it is evident that the failure to integrate management into a cohesive unit led to the collapse of the merger.

Neither sets of shareholders benefited, but the original shareholders of Phoenix suffered less than the Wayne Rubber shareholders i.e. more than a proportionate share of enlarged company.

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9. APPENDICES

APPENDIX 1 – WAYNE BALANCE SHEETS

APPENDIX 2 – WAYNE INCOME STATEMENTS

APPENDIX 3 – WAYNE FREE CASH FLOWS

APPENDIX 4 – WAYNE SHARE PRICES AND ALSI

APPENDIX 5 – GRAPH OF WAYNE SHARE PERFORMANCE

APPENDIX 6 – MONTHLY SHARE AND ALSI RETURNS

APPENDIX 7 – SUMMARY OF REGRESSION ANALYSIS

APPENDIX 8 – CUMULATIVE AVERAGE RESIDUALS

APPENDIX 9 – GRAPH OF RESIDUALS

WAYNE MANUFACTURING LIMITED

BALANCE SHEETS FROM JUNE 1988 TO JUNE 1993 AND SALIENT STATISTICS

Description	R'000 YTD Actual Jun-88	R'000 YTD Actual Jun-89	R'000 YTD Actual Jun-90	R'000 YTD Actual Jun-91	R'000 YTD Actual Jun-92	R'000 YTD Actual Jun-93
EMPLOYMENT OF CAPITAL						
FIXED ASSETS	3,596	4,791	49,495	49,895	52,843	50,969
LOAN TO HOLDING COMPANY				8,200		
LOAN TO SHARE TRUST & LOAN LEVY	247	247	246	282	123	124
TOTAL NON CURRENT ASSETS	3,843	5,038	49,741	58,377	52,966	51,093
CURRENT ASSETS						
INTER-GROUP LOANS					2,352	11,495
STOCK	1,713	1,858	12,978	14,115	20,771	19,651
DEBTORS	2,280	3,600	21,186	22,756	25,837	21,531
CASH	854	282	217	74	21	12
	4,847	5,740	34,381	36,945	48,981	52,689
CURRENT LIABILITIES						
CREDITORS	1,708	1,858	15,167	15,484	18,524	18,921
BANK OVERDRAFT & SHORT TERM BORROWINGS	502	502	1,801	2,362	741	3,062
TAXATION	719	1,022		377	2,068	3,315
SHAREHOLDERS FOR DIVIDENDS	229	332	2,247	2,581	2,095	607
	3,158	3,714	19,215	20,804	23,428	25,905
NET CURRENT ASSETS	1,689	2,026	15,166	16,141	25,553	26,784
TOTAL EMPLOYMENT OF CAPITAL	5,532	7,064	64,907	74,518	78,519	77,877
CAPITAL EMPLOYED						
CAPITAL AND PREMIUM	2,009	2,143	46,964	46,964	46,964	46,964
NON-DISTRIBUTABLE RESERVES	735	770	6,087	6,017	5,643	5,287
DISTRIBUTABLE RESERVES	1,126	1,830	7,274	12,932	16,346	18,444
TOTAL SHAREHOLDERS FUNDS	3,870	4,743	60,325	65,913	68,953	70,695
OUTSIDE INTEREST IN SUBSIDIARIES		(36)				
DEFERRED TAXATION	992	1,303	3,941	7,453	9,059	7,182
LONG-TERM BORROWINGS	670	1,054	641	1,152	507	
TOTAL CAPITAL EMPLOYED	5,532	7,064	64,907	74,518	78,519	77,877
NO OF SHARES IN ISSUE	10,420,000	10,697,608	60,732,294	60,732,294	60,732,294	60,732,294
NET ASSET VALUE PER SHARE (CENTS)	37.14	44.34	99.33	108.53	113.54	116.40
SHARE PRICE (CENTS)	70.00	85.00	60.00	80.00	80.00	50.00
MARKET/BOOK RATIO	1.88	1.92	0.60	0.74	0.70	0.43

WAYNE MANUFACTURING LIMITED

INCOME STATEMENT AND SALIENT STATISTICS

	1988 R'000	1989 R'000	1990 R'000	1991 R'000	1992 R'000	1993 R'000
TURNOVER	16,035	21,490	110,634	129,779	129,438	119,588
INCOME BEFORE TAXATION	1,967	2,598	10,568	13,475	9,864	3,965
TAXATION	1,015	1,393	2,673	4,243	3,666	1,616
ATTRIBUTABLE TO OUTSIDE SHAREHOLDERS		31				
INCOME ATTRIBUTABLE TO SHAREHOLDERS	952	1,236	7,895	9,232	6,198	2,349
DIVIDENDS	386	492	3,158	3,644	3,158	607
RETAINED INCOME FOR THE YEAR	566	744	4,737	5,588	3,040	1,742
TFR FROM/(TO) NON-DISTRIBUTABLE RESERVE		(40)	707	70	374	356
RETAINED INCOME AT BEGINNING OF YEAR	560	1,126	1,830	7,274	12,932	16,346
RETAINED INCOME AT END OF YEAR	1,126	1,830	7,274	12,932	16,346	18,444
EARNINGS PER SHARE (CENTS)	9.14	11.55	13.00	15.20	10.21	3.87
SHARE PRICE (CENTS) - AT YEAR END	70.00	85.00	60.00	80.00	80.00	50.00
EARNINGS YIELD	13.1%	13.6%	21.7%	19.0%	12.8%	7.7%
P/E RATIO	7.7	7.4	4.6	5.3	7.8	12.9
DIVIDEND YIELD	5.3%	5.4%	8.7%	7.5%	6.5%	2.0%
DIVIDEND COVER	2.5	2.5	2.5	2.5	2.0	3.9
RETENTION RATIO	59%	60%	60%	61%	49%	74%
DIVIDEND PER SHARE	0.037	0.046	0.052	0.060	0.052	0.010

WAYNE MANUFACTURING LIMITED

WAYNE MANUFACTURING LIMITED

CALCULATION OF FREE CASH FLOW - 1989

	1990 R'000 (Yr 1)	1991 R'000 (Yr 2)	1992 R'000 (Yr 3)	1993 R'000 (Yr 4)
INCOME AFTER TAX	7,895	9,232	6,198	2,349
ADD BACK DEPRECIATION	4,284	4,718	6,056	6,000
	12,179	13,950	12,254	8,349
(INCREASE)/DECREASE IN WORKING CAPITAL	(13,140)	(975)	(9,412)	(1,231)
	(961)	12,975	2,842	7,118
DEDUCT CAPEX (FROM AFS)	(2,632)	(5,205)	(5,500)	(4,500)
FREE CASH FLOW	(3,593)	7,770	(2,658)	2,618
DISCOUNT RATE	17.17%	17.17%	17.17%	17.17%
DISCOUNT FACTOR	0.8535	0.7284	0.6217	0.5306
NET PRESENT VALUE	(3,066)	5,660	(1,652)	1,389
CUMULATIVE NET PRESENT VALUE	(3,066)	2,593	941	2,330

TERMINAL VALUE	
EARNINGS IN 1993	2,349
P/E RATIO (JUNE 1993)	12.9
VALUE OF COMPANY (= EARNINGS x P/E)	30,302
TERMINAL VALUE (30,302 x 0.5306)	16,078

VALUATION OF COMPANY	R'000
CUMULATIVE NET PRESENT VALUE (YR 4)	2,330
TERMINAL VALUE - YR 4	16,078
TOTAL VALUE	18,408
NUMBER OF SHARES IN ISSUE	60,732,294
VALUE PER SHARE (CENTS)	30.31
PRICE PER SHARE IN 1989 (CENTS) - PAID	95.00

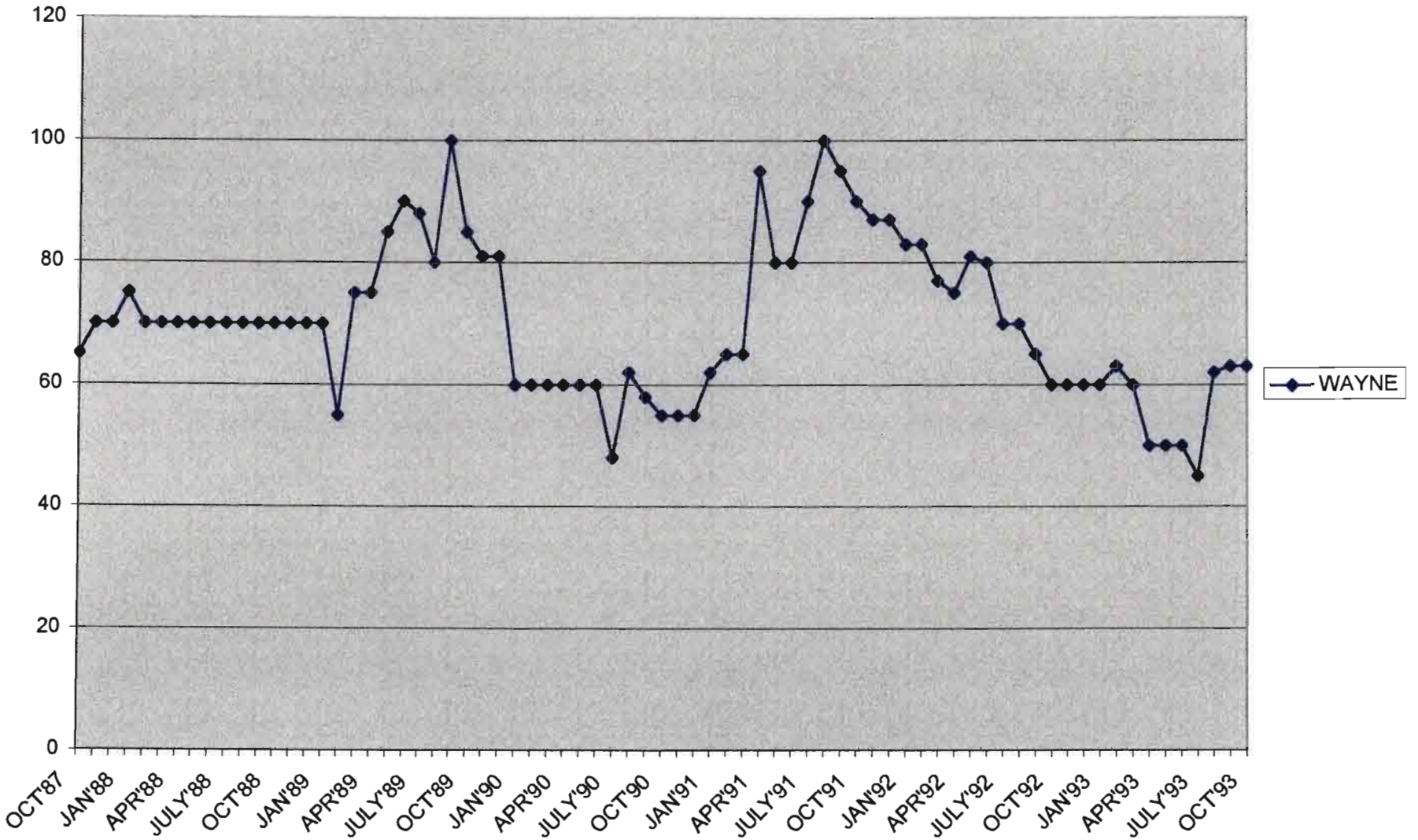
WAYNE SHARE PRICES AND ALSI

MONTH	WAYNE	MONTH	ALSI
OCT'87	65	OCT'87	1,627
NOV'87	70	NOV'87	1,432
DEC'87	70	DEC'87	1,396
JAN'88	75	JAN'88	1,281
FEB'88	70	FEB'88	1,248
MAR'88	70	MAR'88	1,360
APR'88	70	APR'88	1,715
MAY'88	70	MAY'88	1,676
JUNE'88	70	JUNE'88	1,755
JULY'88	70	JULY'88	1,812
AUG'88	70	AUG'88	1,724
SEPT'88	70	SEPT'88	1,849
OCT'88	70	OCT'88	1,968
NOV'88	70	NOV'88	1,961
DEC'88	70	DEC'88	2,105
JAN'89	70	JAN'89	2,158
FEB'89	55	FEB'89	2,285
MAR'89	75	MAR'89	2,533
APR'89	75	APR'89	2,594
MAY'89	85	MAY'89	2,398
JUNE'89	90	JUNE'89	2,590
JULY'89	88	JULY'89	2,629
AUG'89	80	AUG'89	2,775
SEPT'89	100	SEPT'89	2,667
OCT'89	85	OCT'89	2,589
NOV'89	81	NOV'89	2,751
DEC'89	81	DEC'89	2,875
JAN'90	60	JAN'90	3,135
FEB'90	60	FEB'90	3,621
MAR'90	60	MAR'90	3,261
APR'90	60	APR'90	3,032
MAY'90	60	MAY'90	3,188
JUNE'90	60	JUNE'90	3,077
JULY'90	48	JULY'90	3,151
AUG'90	62	AUG'90	2,993
SEPT'90	58	SEPT'90	2,744
OCT'90	55	OCT'90	2,667
NOV'90	55	NOV'90	2,601
DEC'90	55	DEC'90	2,720
JAN'91	62	JAN'91	2,556
FEB'91	65	FEB'91	2,803
MAR'91	65	MAR'91	2,877
APR'91	95	APR'91	3,033
MAY'91	80	MAY'91	3,115
JUNE'91	80	JUNE'91	3,306
JULY'91	90	JULY'91	3,491
AUG'91	100	AUG'91	3,349
SEPT'91	95	SEPT'91	3,297
OCT'91	90	OCT'91	3,526
NOV'91	87	NOV'91	3,542
DEC'91	87	DEC'91	3,440
JAN'92	83	JAN'92	3,605
FEB'92	83	FEB'92	3,597

WAYNE SHARE PRICES AND ALSI

MONTH	WAYNE	MONTH	ALSI
MAR'92	77	MAR'92	3,550
APR'92	75	APR'92	3,454
MAY'92	81	MAY'92	3,732
JUNE'92	80	JUNE'92	3,655
JULY'92	70	JULY'92	3,431
AUG'92	70	AUG'92	3,150
SEPT'92	65	SEPT'92	3,211
OCT'92	60	OCT'92	3,017
NOV'92	60	NOV'92	3,192
DEC'92	60	DEC'92	3,259
JAN'93	60	JAN'93	3,433
FEB'93	63	FEB'93	3,418
MAR'93	60	MAR'93	3,560
APR'93	50	APR'93	3,733
MAY'93	50	MAY'93	3,992
JUNE'93	50	JUNE'93	4,078
JULY'93	45	JULY'93	4,177
AUG'93	62	AUG'93	4,034
SEPT'93	63	SEPT'93	3,770
OCT'93	63	OCT'93	3,916

WAYNE SHARE PERFORMANCE-PRE AND POST MERGER



APPENDIX 5

WAYNE AND ALSI RETURNS, AND REGRESSION TABLE

	WAYNE		ALSI				
OCT'87	65		1627				
NOV'87	70	0.0769	1432	-0.1199	NOV'87	0.0769	-0.1199
DEC'87	70	0.0000	1396	-0.0251	DEC'87	0.0000	-0.0251
JAN'88	75	0.0714	1281	-0.0824	JAN'88	0.0714	-0.0824
FEB'88	70	-0.0667	1248	-0.0258	FEB'88	-0.0667	-0.0258
MAR'88	70	0.0000	1360	0.0897	MAR'88	0.0000	0.0897
APR'88	70	0.0000	1715	0.2610	APR'88	0.0000	0.2610
MAY'88	70	0.0000	1676	-0.0227	MAY'88	0.0000	-0.0227
JUNE'88	70	0.0000	1755	0.0471	JUNE'88	0.0000	0.0471
JULY'88	70	0.0000	1812	0.0325	JULY'88	0.0000	0.0325
AUG'88	70	0.0000	1724	-0.0486	AUG'88	0.0000	-0.0486
SEPT'88	70	0.0000	1849	0.0725	SEPT'88	0.0000	0.0725
OCT'88	70	0.0000	1968	0.0644	OCT'88	0.0000	0.0644
NOV'88	70	0.0000	1961	-0.0036	NOV'88	0.0000	-0.0036
DEC'88	70	0.0000	2105	0.0734	DEC'88	0.0000	0.0734
JAN'89	70	0.0000	2158	0.0252	JAN'89	0.0000	0.0252
FEB'89	55	-0.2143	2285	0.0589	FEB'89	-0.2143	0.0589
MAR'89	75	0.3636	2533	0.1085	MAR'89	0.3636	0.1085
APR'89	75	0.0000	2594	0.0241	APR'89	0.0000	0.0241
MAY'89	85	0.1333	2398	-0.0755	MAY'89	0.1333	-0.0755
JUNE'89	90	0.0588	2590	0.0801	JUNE'89	0.0588	0.0801
JULY'89	88	-0.0222	2629	0.0148	JULY'89	-0.0222	0.0148
AUG'89	80	-0.0909	2775	0.0558	AUG'89	-0.0909	0.0558
SEPT'89	100	0.2500	2667	-0.0390	SEPT'89	0.2500	-0.0390
OCT'89	85	-0.1500	2589	-0.0291	OCT'89	-0.1500	-0.0291
NOV'89	81	-0.0471	2751	0.0623	NOV'89	-0.0471	0.0623
DEC'89	81	0.0000	2875	0.0451	DEC'89	0.0000	0.0451
JAN'90	60	-0.2593	3135	0.0904	JAN'90	-0.2593	0.0904
FEB'90	60	0.0000	3621	0.1551	FEB'90	0.0000	0.1551
MAR'90	60	0.0000	3261	-0.0995	MAR'90	0.0000	-0.0995
APR'90	60	0.0000	3032	-0.0702	APR'90	0.0000	-0.0702
MAY'90	60	0.0000	3188	0.0515	MAY'90	0.0000	0.0515
JUNE'90	60	0.0000	3077	-0.0349	JUNE'90	0.0000	-0.0349
JULY'90	48	-0.2000	3151	0.0243	JULY'90	-0.2000	0.0243
AUG'90	62	0.2917	2993	-0.0502	AUG'90	0.2917	-0.0502
SEPT'90	58	-0.0645	2744	-0.0832	SEPT'90	-0.0645	-0.0832
OCT'90	55	-0.0517	2667	-0.0283	OCT'90	-0.0517	-0.0283
NOV'90	55	0.0000	2601	-0.0247	NOV'90	0.0000	-0.0247
DEC'90	55	0.0000	2720	0.0458	DEC'90	0.0000	0.0458
JAN'91	62	0.1273	2556	-0.0604	JAN'91	0.1273	-0.0604
FEB'91	65	0.0484	2803	0.0970	FEB'91	0.0484	0.0970
MAR'91	65	0.0000	2877	0.0264	MAR'91	0.0000	0.0264
APR'91	95	0.4615	3033	0.0541	APR'91	0.4615	0.0541
MAY'91	80	-0.1579	3115	0.0269	MAY'91	-0.1579	0.0269
JUNE'91	80	0.0000	3306	0.0613	JUNE'91	0.0000	0.0613
JULY'91	90	0.1250	3491	0.0561	JULY'91	0.1250	0.0561
AUG'91	100	0.1111	3349	-0.0409	AUG'91	0.1111	-0.0409
SEPT'91	95	-0.0500	3297	-0.0154	SEPT'91	-0.0500	-0.0154
OCT'91	90	-0.0526	3526	0.0693	OCT'91	-0.0526	0.0693
NOV'91	87	-0.0333	3542	0.0046	NOV'91	-0.0333	0.0046
DEC'91	87	0.0000	3440	-0.0287	DEC'91	0.0000	-0.0287
JAN'92	83	-0.0460	3605	0.0478	JAN'92	-0.0460	0.0478
FEB'92	83	0.0000	3597	-0.0021	FEB'92	0.0000	-0.0021
MAR'92	77	-0.0723	3550	-0.0132	MAR'92	-0.0723	-0.0132
APR'92	75	-0.0260	3454	-0.0270	APR'92	-0.0260	-0.0270
MAY'92	81	0.0800	3732	0.0805	MAY'92	0.0800	0.0805

WAYNE AND ALSI RETURNS, AND REGRESSION TABLE

	WAYNE		ALSI				
JUNE'92	80	-0.0123	3655	-0.0205	JUNE'92	-0.0123	-0.0205
JULY'92	70	-0.1250	3431	-0.0613	JULY'92	-0.1250	-0.0613
AUG'92	70	0.0000	3150	-0.0819	AUG'92	0.0000	-0.0819
SEPT'92	65	-0.0714	3211	0.0195	SEPT'92	-0.0714	0.0195
OCT'92	60	-0.0769	3017	-0.0606	OCT'92	-0.0769	-0.0606
NOV'92	60	0.0000	3192	0.0582	NOV'92	0.0000	0.0582
DEC'92	60	0.0000	3259	0.0208	DEC'92	0.0000	0.0208
JAN'93	60	0.0000	3433	0.0534	JAN'93	0.0000	0.0534
FEB'93	63	0.0500	3418	-0.0043	FEB'93	0.0500	-0.0043
MAR'93	60	-0.0476	3560	0.0415	MAR'93	-0.0476	0.0415
APR'93	50	-0.1667	3733	0.0486	APR'93	-0.1667	0.0486
MAY'93	50	0.0000	3992	0.0695	MAY'93	0.0000	0.0695
JUNE'93	50	0.0000	4078	0.0214	JUNE'93	0.0000	0.0214
JULY'93	45	-0.1000	4177	0.0242	JULY'93	-0.1000	0.0242
AUG'93	62	0.3778	4034	-0.0341	AUG'93	0.3778	-0.0341
SEPT'93	63	0.0161	3770	-0.0654	SEPT'93	0.0161	-0.0654
OCT'93	63	0.0000	3916	0.0387	OCT'93	0.0000	0.0387
AVERAGE		0.006088		0.014223			

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.073985712
R Square	0.005473886
Adjusted R Square	-0.00873363
Standard Error	0.064160396
Observations	72

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.001586031	0.001586031	0.385281	0.536806238
Residual	70	0.288158952	0.004116556		
Total	71	0.289744983			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.014462689	0.007571212	1.910221165	0.060202	-0.000637604	0.029563	-0.0006376	0.02956298
Beta	-0.03933919	0.063377729	-0.62071006	0.536806	-0.165741984	0.0870636	-0.16574198	0.0870636

RESIDUAL OUTPUT

Observation	*Predicted*	*Residuals*	*Standard Residuals*
1	0.011436597	-0.131289086	-2.060827981
2	0.014462689	-0.039602354	-0.621633078
3	0.011652747	-0.094030970	-1.475992099
4	0.017085302	-0.042846426	-0.672554864
5	0.014462689	0.075280901	1.181674660
6	0.014462689	0.246566723	3.870326279
7	0.014462689	-0.037203214	-0.583974084
8	0.014462689	0.032673349	0.512869379
9	0.014462689	0.018015943	0.282793958
10	0.014462689	-0.063027810	-0.989339471
11	0.014462689	0.058043111	0.911095289
12	0.014462689	0.049896424	0.783217780
13	0.014462689	-0.018019600	-0.282851348
14	0.014462689	0.058969233	0.925632508
15	0.014462689	0.010715458	0.168199176
16	0.022892516	0.035958272	0.564432384
17	0.000157528	0.108376389	1.701170305
18	0.014462689	0.009619427	0.150994915
19	0.009217463	-0.084749460	-1.330301425
20	0.012148619	0.067969977	1.066916020
21	0.015336893	-0.000542669	-0.008518205
22	0.018038979	0.037749069	0.592542298
23	0.004627891	-0.043587806	-0.684192217
24	0.020363568	-0.049448246	-0.776182790
25	0.016313945	0.045980656	0.721752465
26	0.014462689	0.030622705	0.480680679
27	0.024661739	0.065713243	1.031492368
28	0.014462689	0.140653896	2.207826205
29	0.014462689	-0.113972747	-1.789015625
30	0.014462689	-0.084650665	-1.328750644
31	0.014462689	0.037036810	0.581362059
32	0.014462689	-0.049364393	-0.774866552
33	0.022330528	0.001982420	0.031117796
34	0.002988758	-0.053227544	-0.835505945
35	0.017000702	-0.100183964	-1.572574856
36	0.016497475	-0.044747586	-0.702397129
37	0.014462689	-0.039165112	-0.614769755
38	0.014462689	0.031321667	0.491652190
39	0.009455883	-0.069810916	-1.095813018
40	0.012559180	0.084424296	1.325197362
41	0.014462689	0.011890648	0.186645984
42	-0.003693862	0.057841471	0.907930173
43	0.020674141	0.006265117	0.098342733

PROBABILITY OUTPUT

Percentile	
0.694444444	-0.1198525
2.083333333	-0.0995101
3.472222222	-0.0831833
4.861111111	-0.0823782
6.250000000	-0.0818743
7.638888889	-0.0755320
9.027777778	-0.0701880
10.416666667	-0.0654212
11.805555556	-0.0613169
13.194444444	-0.0606180
14.583333333	-0.0603550
15.972222222	-0.0502388
17.361111111	-0.0485651
18.750000000	-0.0409139
20.138888889	-0.0389599
21.527777778	-0.0349017
22.916666667	-0.0340822
24.305555556	-0.0290847
25.694444444	-0.0286604
27.083333333	-0.0282501
28.472222222	-0.0269805
29.861111111	-0.0257611
31.250000000	-0.0251397
32.638888889	-0.0247024
34.027777778	-0.0227405
35.416666667	-0.0205320
36.805555556	-0.0154182
38.194444444	-0.0132106
39.583333333	-0.0042735
40.972222222	-0.0035569
42.361111111	-0.0020917
43.750000000	0.0046263
45.138888889	0.0147942
46.527777778	0.0194725
47.916666667	0.0208412
49.305555556	0.0214002
50.694444444	0.0240821
52.083333333	0.0242133
53.472222222	0.0243129
54.861111111	0.0251781
56.250000000	0.0263533
57.638888889	0.0269393
59.027777778	0.0324786

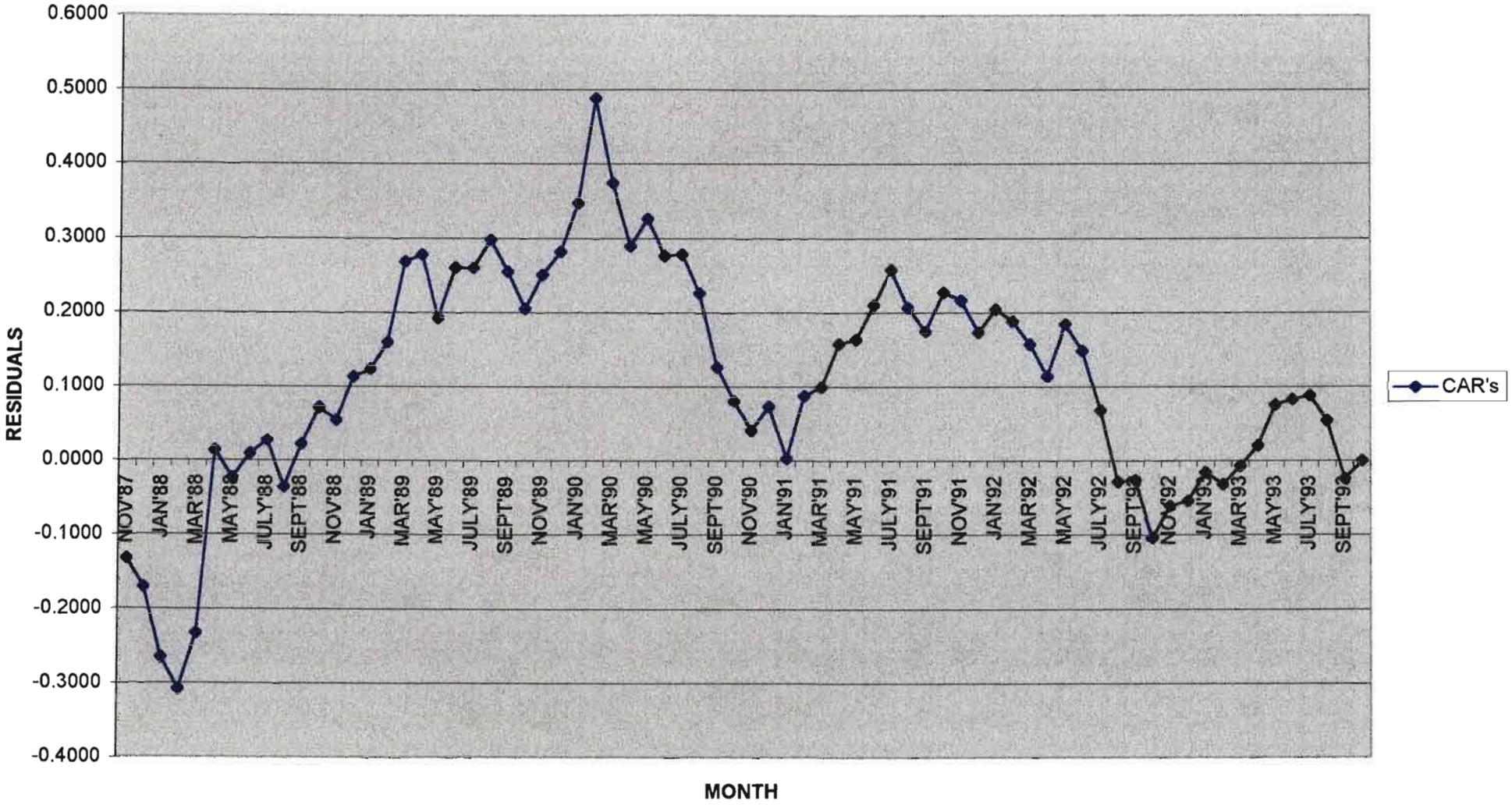
44	0.014462689	0.046882553	0.735909431	60.416666667	0.0386803
45	0.009545290	0.046587515	0.731278255	61.805555556	0.0414933
46	0.010091668	-0.051005549	-0.800627577	63.194444444	0.0450854
47	0.016429649	-0.031847894	-0.499912321	64.583333333	0.0457844
48	0.016533173	0.052775289	0.828406960	65.972222222	0.0471360
49	0.015773995	-0.011147714	-0.174984247	67.361111111	0.0477719
50	0.014462689	-0.043123095	-0.676897705	68.750000000	0.0486015
51	0.016271388	0.031500470	0.494458848	70.138888889	0.0514995
52	0.014462689	-0.016554426	-0.259852703	71.527777778	0.0534099
53	0.017306486	-0.030517055	-0.479022299	72.916666667	0.0541476
54	0.015484486	-0.042464991	-0.666567529	74.305555556	0.0557880
55	0.011315554	0.069145847	1.085373512	75.694444444	0.0561328
56	0.014948358	-0.035480390	-0.556931141	77.083333333	0.0581686
57	0.019380088	-0.080696984	-1.266690231	78.472222222	0.0588508
58	0.014462689	-0.096337017	-1.512189819	79.861111111	0.0613452
59	0.017272631	0.002199890	0.034531390	81.250000000	0.0622946
60	0.017488781	-0.078106825	-1.226032835	82.638888889	0.0643591
61	0.014462689	0.043705870	0.686045444	84.027777778	0.0693085
62	0.014462689	0.006378541	0.100123143	85.416666667	0.0695153
63	0.014462689	0.038947197	0.611349164	86.805555556	0.0725058
64	0.012495729	-0.016769196	-0.263223927	88.194444444	0.0734319
65	0.016335984	0.025157343	0.394891589	89.583333333	0.0801186
66	0.021019221	0.027582312	0.432956018	90.972222222	0.0804614
67	0.014462689	0.055052632	0.864154124	92.361111111	0.0897436
68	0.014462689	0.006937490	0.108896889	93.750000000	0.0903750
69	0.018396608	0.005816657	0.091303315	95.138888889	0.0969835
70	-0.000398784	-0.033683391	-0.528723882	96.527777778	0.1085339
71	0.013828186	-0.079249372	-1.243967248	97.916666667	0.1551166
72	0.014462689	0.024217660	0.380141504	99.305555556	0.2610294

MONTHLY CUMULATIVE AVERAGE RESIDUALS

	Residuals	CAR's
NOV'87	-0.1313	-0.1313
DEC'87	-0.0396	-0.1709
JAN'88	-0.0940	-0.2649
FEB'88	-0.0428	-0.3078
MAR'88	0.0753	-0.2325
APR'88	0.2466	0.0141
MAY'88	-0.0372	-0.0231
JUNE'88	0.0327	0.0095
JULY'88	0.0180	0.0276
AUG'88	-0.0630	-0.0355
SEPT'88	0.0580	0.0226
OCT'88	0.0499	0.0725
NOV'88	-0.0180	0.0545
DEC'88	0.0590	0.1134
JAN'89	0.0107	0.1241
FEB'89	0.0360	0.1601
MAR'89	0.1084	0.2685
APR'89	0.0096	0.2781
MAY'89	-0.0847	0.1933
JUNE'89	0.0680	0.2613
JULY'89	-0.0005	0.2608
AUG'89	0.0377	0.2985
SEPT'89	-0.0436	0.2549
OCT'89	-0.0494	0.2055
NOV'89	0.0460	0.2515
DEC'89	0.0306	0.2821
JAN'90	0.0657	0.3478
FEB'90	0.1407	0.4885
MAR'90	-0.1140	0.3745
APR'90	-0.0847	0.2898
MAY'90	0.0370	0.3269
JUNE'90	-0.0494	0.2775
JULY'90	0.0020	0.2795
AUG'90	-0.0532	0.2263
SEPT'90	-0.1002	0.1261
OCT'90	-0.0447	0.0813
NOV'90	-0.0392	0.0422
DEC'90	0.0313	0.0735
JAN'91	-0.0698	0.0037
FEB'91	0.0844	0.0881
MAR'91	0.0119	0.1000
APR'91	0.0578	0.1578
MAY'91	0.0063	0.1641
JUNE'91	0.0469	0.2110
JULY'91	0.0466	0.2576
AUG'91	-0.0510	0.2066
SEPT'91	-0.0318	0.1747
OCT'91	0.0528	0.2275
NOV'91	-0.0111	0.2163

MONTHLY CUMULATIVE AVERAGE RESIDUALS

	Residuals	CAR's
DEC'91	-0.0431	0.1732
JAN'92	0.0315	0.2047
FEB'92	-0.0166	0.1882
MAR'92	-0.0305	0.1576
APR'92	-0.0425	0.1152
MAY'92	0.0691	0.1843
JUNE'92	-0.0355	0.1488
JULY'92	-0.0807	0.0682
AUG'92	-0.0963	-0.0282
SEPT'92	0.0022	-0.0260
OCT'92	-0.0781	-0.1041
NOV'92	0.0437	-0.0604
DEC'92	0.0064	-0.0540
JAN'93	0.0389	-0.0151
FEB'93	-0.0168	-0.0318
MAR'93	0.0252	-0.0067
APR'93	0.0276	0.0209
MAY'93	0.0551	0.0760
JUNE'93	0.0069	0.0829
JULY'93	0.0058	0.0887
AUG'93	-0.0337	0.0550
SEPT'93	-0.0792	-0.0242
OCT'93	0.0242	0.0000


WAYNE - Cumulative Average Residuals (CAR's)
RESIDUALS
0.6000
0.5000
0.4000
0.3000
0.2000
0.1000
0.0000
-0.1000
-0.2000
-0.3000
-0.4000
NOV'87
JAN'88
MAR'88
MAY'88
JULY'88
SEPT'88
NOV'88
JAN'89
MAR'89
MAY'89
JULY'89
SEPT'89
NOV'89
JAN'90
MAR'90
MAY'90
JULY'90
SEPT'90
NOV'90
JAN'91
MAR'91
MAY'91
JULY'91
SEPT'91
NOV'91
JAN'92
MAR'92
MAY'92
JULY'92
SEPT'92
NOV'92
JAN'93
MAR'93
MAY'93
JULY'93
SEPT'93
MONTH
CAR's

APPENDIX 9