

An empirical study of the performance of South African conglomerates

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Existant financial theory is unable to explain whether on aggregate conglomeration is beneficial to either individual shareholders or to the economy. Both advantages and disadvantages can be listed for the conglomeration process and it is thus an empirical question as to whether or not shareholders really do benefit from conglomeration. In this paper the long-term profitability of conglomerates is examined in an attempt to determine whether or not such shareholders earn superior returns on aggregate. This is done by contrasting the stock market performance of a sample of South African (SA) conglomerates over a six-year period with the performance of the overall market. In addition, their performance is contrasted with that of a random portfolio of non-conglomerate companies. Finally, a pseudo-conglomerate portfolio was constructed for each conglomerate in such a way that each portfolio had the same asset structure as its matched conglomerate. The performance of the conglomerates was then contrasted with that of the pseudo-conglomerate portfolio using market returns, return on assets, and return on equity. The results indicate that on aggregate, the conglomerates significantly underperform non-conglomerates. This is consistent with the view that conglomeration is in the interest of management rather than that of the shareholders.

Beskikbare finansiële teorie kan nie verduidelik of die vorming van konglomerate, aggremaat beskou, 'n positiewe bydrae lewer aan die individuele aandeelhouer of die ekonomie as geheel nie. Beide voordele en nadele van konglomerasie kan genoem word en dit is dus 'n empiriese vraag of aandeelhouders werklik voordeel trek uit die proses. Hierdie studie ondersoek die langtermyn winsgewendheid van konglomerate in 'n poging om vas te stel of aandeelhouders wel beter ontvangste verkry. Dit word gedoen deur die prestasie van 'n monster van Suid-Afrikaanse konglomerate op die aandelemark te kontrasteer met die mark as geheel, oor 'n periode van ses jaar. Verder word hulle prestasie vergelyk met 'n ewekansige portfolio van nie-konglomeraat-maatskappye. Laastens, 'n pseudo-konglomeraat-portfolio is saamgestel vir elke konglomeraat, op so 'n wyse dat elke portfolio dieselfde batesstruktuur as die vergelykende konglomeraat gehad het. Die prestasie van die konglomerate is vergelyk deur middel van markopbrengs, opbrengs op bates en opbrengs op eienaarsbelang. Die resultate toon dat aggremaat beskou, konglomerate nie so goed vaar soos nie-konglomerate nie. Dit bevestig die beeld dat konglomerate in die belang van bestuur en nie die van aandeelhouders is nie.

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Introduction

Mergers and acquisitions have always played a major role in the growth of both individual firms and the economy as a whole. By enabling successful corporations to grow rapidly, mergers and acquisitions assist in the optimal allocation of economic resources to those managers and firms best able to utilize the resources in a productive manner, thereby resulting in benefits for all of society. It is, therefore, no surprise that in a growing economy such as the South African economy over the period 1960 to 1985, a considerable degree of merger activity has been evident.

The optimal allocation of resources and the ability of certain firms to utilize their assets more efficiently are clear and obvious reasons for the existence of both horizontal and vertical mergers. In addition, arguments such as differential efficiencies, synergy, market power, and strategic realignment (Copeland & Weston, 1983:562-568) all provide valid justification for this type of merger activity.

However, a third type of merger activity has been dominant in South Africa in recent years, namely conglomeration, which occurs when two unrelated business units combine or merge. Many possible advantages which can result from conglomeration have been suggested. These include *inter alia*, the financial

gains resulting from improved earnings per share (EPS) for the acquiring firm (Brigham & Gapenski, 1985: 857), synergy in the general management function (Copeland & Weston, 1983: 569), risk reduction through diversification (Brealey & Myers, 1985: 706), the reduced risk of financial distress with its accompanying benefit of cheaper debt (Lewellen, 1971: 522), and easier access to the capital markets resulting from the increased size of the corporation (Levy & Sarnat, 1970: 798). Subsequent research has shown, however, that many of these justifications may not be universally valid and indeed that in many conglomerate mergers they may actually prove disadvantageous (Brealey & Myers, 1985: 706). For example, Myers (1976:679) has shown that improvement in EPS without any other efficiency or synergistic benefits will not result in improved shareholder returns. Also, Galai & Masulis (1976) have shown that in the absence of synergy, the reduction in financial risk and cheaper debt do not eventuate. Indeed, they show that the equity is more risky as, in essence, each set of shareholders must now guarantee the other firm's debt in addition to their own debt. Thus, they argue that it is the bondholders and other debt providers and not the equity holders who receive the benefits of the reduction in financial risk. Shastri (1982) has extended the work of Galai & Masulis to show that

under some conditions the value of equity in the conglomerate firm may be larger than the sum of the equities in the two pre-merger firms, even in the absence of synergy. However, Shastri's results also confirm that there are many circumstances when this will not be the case and, in the absence of synergy, the value of the combined firm will be less than the sum of the pre-merger values of the component firms.

Additional arguments against the benefits of conglomerate mergers to the shareholders of the acquiring company can be made in terms of Agency Theory (Jensen & Meckling, 1976). In terms of this theory, an agency problem arises when managers own only a fraction of the firm. This may cause them to act in their own interests rather than in those of the shareholders. While compensation arrangements in the market for managers may overcome some of these agency problems (Fama, 1980), incentives still exist for managers to enter conglomerate mergers in the absence of synergistic benefits. For example, Mueller (1969) has argued that managers are motivated to increase the size of the corporation since their compensation is a function of size. While this has not been empirically validated in the US (Lewellen & Huntsman, 1970), Naude & Hipkin (1985) showed that in the SA context, size was a more significant predictor of management compensation than was profitability. Additional arguments in favour of management's desire for conglomeration would include the desirability for diversification in order to reduce their indivisible personal employment risk.

From the above, it is apparent that theoretical arguments can be made both for and against the benefits of conglomeration from the ordinary shareholder's perspective. It thus remains an empirical question to ascertain whether, on aggregate, conglomeration has, *ex post*, resulted in benefits for the ordinary shareholder. This paper contributes to the debate by providing evidence on the profitability of conglomerate companies in the SA context over the period 1977 to 1983.

Background

Numerous studies of the performance of conglomerates have been conducted using US data. These studies can be roughly divided into two groups: those that examined the performance of conglomerates in terms of their accounting performance and other operating characteristics, and those that examined conglomerate performance in terms of stock market performance.

Studies in the former group have focused on variables such as return on assets, earnings per share, total assets, debt capacity, etc. For example, Reid (1968) showed that in the US, conglomeration did not result in increased EPS although total asset size was increased; Weston & Masingha (1971) showed that conglomeration resulted in increased return on asset (ROA), while Melicher & Rush (1974) demonstrated that conglomerate acquirers made greater use of latent debt capacity than did non-conglomerate acquirers. On the other hand, Mason & Goudzwaard (1976) found that their sample of 22 conglomerates had significantly

poorer performance in terms of both ROA and return on equity (ROE) when compared to unmanaged portfolios of similar industry investments.

The second group of studies examined the performance of conglomerates in terms of stock market performance. For example, Weston, Smith & Schrieves (1972) compared the performance of conglomerates with that of mutual funds over the period 1960 – 1969. They concluded that on a risk-adjusted basis the conglomerates earned higher returns. This result was confirmed in a later study (Smith & Weston, 1977). On the other hand, Melicher & Rush (1973) compared the performance of conglomerates with a matched sample of non-conglomerates over the period 1965 – 1971, concluding that there were no significant differences in the returns earned by shareholders in either group. In a similar vein, Joehnk & Nielsen (1974) found no significant differences when comparing 21 conglomerates with a sample of 23 non-conglomerates over the period 1962 – 1969. Finally, Mason & Goudzwaard (1976) found that their sample of 22 conglomerates underperformed a group of randomly selected portfolios having similar asset structures.

As can be seen from the above, the evidence from the US is unclear as to the actual benefits resulting from conglomeration. Evidence that conglomerates have both higher accounting returns and stock market returns has been presented as has evidence to the contrary (i.e., lower accounting returns and lower stock market returns). In this study, an attempt is made to examine the performance of conglomerates in the SA context, thereby enabling comparison to be made between the SA and US environments. In addition, the paper contributed by establishing a well-matched pseudo-conglomerate portfolio which permits an unambiguous evaluation of the potential synergistic benefits of conglomeration. The methodology by which this is accomplished is discussed in the following section.

Finally, it should be pointed out that this study examines the long-term effects of conglomeration. It is therefore not concerned with either the short-term effects of take-overs or with mergers in general. The vast body of literature dealing with these two aspects is well summarized in Jensen & Ruback (1983) and is not discussed further in this paper. For results on the short-term reaction in the South African context, the reader is referred to Affleck-Graves, Flach & Jacobson (1988).

Methodology and Data

The hypothesis tested in this study can be stated as:

H_0 : Management control confers advantages to the conglomerate firm and hence return to shareholders will be higher for conglomerate firms than for non-conglomerate firms.

This hypothesis is tested over the period January 4, 1977 to January 4, 1983. This period was selected as it is reasonably representative of the different phases of the business cycle. The study was restricted to companies quoted on the Johannesburg Stock Exchange (JSE) over the entire period.

Bisotto (1980) identified 31 companies quoted on the JSE as conglomerates. These 31 companies (see Appendix A) comprised the sample of conglomerates studied in this paper and are referred to as the CONGLOMERATE group. The performance of each conglomerate was compared to that of three benchmark portfolios, namely:

1. A randomly selected portfolio of single or dominant product companies (called the RANDOM portfolio);
2. The overall market as represented by the JSE Actuaries Industrial Index (called the MARKET portfolio); and
3. A group of portfolios where each portfolio was chosen to match one of the conglomerate portfolios in terms of asset composition (called the PSEUDO-CONGLOMERATE portfolio).

The randomly selected portfolio comprised 20 securities chosen at random from the Industrial Sector of the JSE. The only restrictions imposed on these twenty securities were that they were continuously traded over the six years of the study and that they were single or dominant product companies. The twenty selected securities are listed in Appendix B. This portfolio was constructed assuming equal random investments in each of the twenty securities.

The overall market was represented by the JSE Actuaries Industrial Index and provides an indication of the performance of the conglomerates relative to the market as a whole. It should be noted, however, that this does not provide an objective test of the hypothesis as the index includes both conglomerate and non-conglomerate companies. Indeed, since it is a value-weighted index and it is reasonable to assume that the conglomerate companies are, on average, larger than the non-conglomerate companies, it follows that the JSE Industrial Index will be biased towards the performance of the conglomerate portfolio.

The pseudo-conglomerate portfolio was constructed as follows. For each of the 31 conglomerates an attempt was made to determine the relative asset sizes of the divisions within the conglomerate. Because of differences in reporting standards, this was only possible for 15 of the 31 conglomerates. For each of these 15 conglomerates a pseudo-conglomerate portfolio was constructed by choosing single or dominant product firms to represent the different divisions of the conglomerate. The weights assigned to each of these single product firms was set equal to the proportion of that division's assets to the total assets of the conglomerate. Thus, 15 pseudo-conglomerate portfolios were constructed to match the 15 conglomerate firms for which asset size per division was known. These 15 pseudo-conglomerate portfolios indicate the returns that an investor could have achieved had he performed the diversification himself rather than relying on the conglomerate to perform the diversification on his behalf.

Comparisons between the conglomerate portfolio and the market and the random portfolio were done on both

an unadjusted and a risk-adjusted basis. The risk adjustment was performed using the Sharpe (1966) risk-adjusted performance measure:

$$S_p = (\bar{R}_p - R_f) / SD_p$$

where S_p = the Sharpe risk-adjusted performance measure; \bar{R}_p = the average annual return on the portfolio in the six-year period; and SD_p = the standard deviation of the annual returns on the portfolio over the six-year period.

Comparisons between the conglomerate and pseudo-conglomerate portfolios were also made on a risk-adjusted basis once again using the Sharpe risk-adjustment procedure. The comparisons were made by examining the differences between the risk-adjusted return earned by a shareholder in the conglomerate and the risk-adjusted return that would have been earned by an investor in the matched pseudo-conglomerate portfolio. This was done for each of the 15 pairs analysed and the hypothesis tested using the familiar paired t test to test whether the mean difference was different from zero.

In addition to comparing differences in stock market returns, the conglomerate and pseudo-conglomerate portfolios were also examined for differences in two accounting measures of return, namely return on assets (ROA) and return on equity (ROE). For the pseudo-conglomerate portfolios, ROA and ROE were taken as the weighted average of the ROA and ROE of the component securities where the weights were once again assigned on the basis of the divisional assets of the conglomerate relative to the conglomerate's total assets. Once again, the null hypothesis of no difference between conglomerates and pseudo-conglomerates was tested using the paired t test.

Results

In this section, the performance of the conglomerate firms is contrasted with that of the three benchmarks discussed in the previous section, namely the market portfolio, the random portfolio, and finally the pseudo-conglomerate portfolios. We begin by comparing the average annual return on each conglomerate with the average annual return on the market (JSE Actuaries Industrial Index) and average annual return on the random portfolio. Summary statistics are presented in Table 1.

From Table 1 it is apparent that over the period January 1977 – December 1983, the conglomerates yielded lower returns on average than either the market portfolio or the random portfolio. However, it is important to emphasize the following points:

1. The comparison is being made between individual conglomerates and portfolios of securities. This accounts for the higher average standard deviation in the case of the conglomerates.
2. In no case are the differences statistically significant at the 5% level. In addition, when comparing each

Table 1 Comparison of conglomerates, random portfolios and the market

Portfolio	Average return (% P.A.)	Standard deviation of return	t statistic
Conglomerates	26,98	59,77	—
Random portfolios	28,89	25,04	-0,16
Market	27,54	22,61	-0,05

Table 2 Risk adjusted comparison of conglomerates

Performance measure	Random portfolio		Market	
	# Conglomerates with larger returns (EX 31)	Z	# Conglomerates with larger returns (EX 31)	Z
Non-risk adjusted	12	-1,26	17	0,54
Sharpe Index	4	-4,13*	6	-2,16*

* Significant at the 5% level

individual conglomerate with the random portfolio, a significant difference was found in only one case out of the 31 which is no more than would be expected by chance.

3. Risk has been ignored in the above tests. It is perceivable that conglomerates are less risky than individual product firms and that investors are prepared to accept the lower average return because of the lower risk involved.

Thus, the results in Table 1 should be interpreted with the utmost caution. Table 2 provides a comparison between the conglomerate firms and the random and market portfolios on a risk-adjusted basis, using the Sharpe risk-adjustment procedure. In this table, the number of conglomerates (out of 31) having greater risk-adjusted return than the random portfolio and the market portfolios was counted.

Under the null hypothesis of no difference between conglomerates and non-conglomerates, the counts would all be expected to be 15,5. Thus, the significance of the results can be easily tested using the normal approximation to the binomial, i.e.,

$$Z = (P - 50)/(P(100 - P)/n)^{1/2}$$

where Z = a standard normal (0;1) random variable; P = the percentage of conglomerates with return greater than the comparison portfolio (either random or market); n = the sample size (i.e. 31).

The results in Table 2 confirm the results in Table 1 in that, on an unadjusted basis, the differences between the conglomerates and the random and market portfolios are not statistically significant. However, on a risk-adjusted basis it is apparent that the conglomerates' performance is statistically different from that of both the random portfolio and the market portfolio. Moreover, the negative sign indicates that this difference

is in the direction of underperformance. Thus, it is concluded that the results presented in Tables 1 and 2 indicate that, on average, conglomerates underperform in comparison to the non-conglomerates on a risk-adjusted basis.

While the above result is of interest because it confirms much of the empirical evidence from other exchanges such as New York and London, the tests are weak in that they contrast the performance of individual conglomerates with that of portfolios. Moreover, the results are subject to a possible selection bias in terms of the random portfolio with respect to, for example, the diversification of this portfolio and the size of the sample companies.

For these reasons it was decided to reexamine the performance of the conglomerates in comparison to pseudo-conglomerates. This was done for each conglomerate separately and provides a stronger statistical test for the following reasons. Firstly, it overcomes many of the selection problems since each pseudo-conglomerate portfolio has a similar asset construction to its matched conglomerate. This overcomes the problems of selection bias with respect to industrial sectors. Secondly, it enables a direct comparison of the returns a shareholder could have achieved had he performed his own diversification rather than left the diversification to the management of the conglomerate. It should be noted that this results in a slight bias in favour of the conglomerates in that it assumes that the degree and type of diversification the investor desired were exactly the same as those actually implemented by the management of the conglomerate. Finally, the use of a matched pair design allows for the more powerful paired t test approach to be used in the significance tests.

The results of the comparison between the conglomerates and the pseudo-conglomerate portfolios are summarized in Table 3. This table provides a comparison of the performance of conglomerates on both a market returns basis and on the basis of two accounting measures of return, return on assets and return on equity.

The results presented in Table 3 indicate that (at the 10% level of significance), the pseudo-conglomerate portfolios provide greater market return than their

Table 3 Comparison of conglomerates with pseudo-conglomerates

Performance measure	t value	Direction of difference
Market return	-1,80 ^a	Pseudo-conglomerates superior
Return on assets	-5,01 ^b	Pseudo-conglomerates superior
Return on equity	-3,85 ^b	Pseudo-conglomerates superior

^a Significant at 10% level

^b Significant at 1% level

matched conglomerates. Since market-determined return is the primary concern of shareholders, this provides strong evidence against the benefits of conglomeration. As such, they seriously question the value of conglomeration in the SA context from the ordinary shareholders' perspective.

It is sometimes argued that studies such as the above do not provide an adequate test because many shareholders may have a longer time horizon than, for example, the six years studied in this study. Proponents of this view argue that if one examines the longer term benefits of conglomeration, one will eventually find higher returns due to the more efficient use of assets and the greater debt capacity of conglomerates. These should be reflected by higher return on assets (utilization efficiency) and return on equity. Although we do not agree with the arguments for many reasons which are well documented in the literature (for example, Brealey and Myers, 1985), the above methodology provides a ready test for these assertions. Accordingly, the matched conglomerates and pseudo-conglomerates were compared on a return on assets and return on equity basis. These results are presented in the second and third rows of Table 3. As can be seen, the hypothesis of no difference between conglomerates and pseudo-conglomerates is even more strongly rejected than in the case of market returns. Once again, the direction of rejection indicates that the pseudo-conglomerates provide returns superior to those of the conglomerate companies on the basis of ROA and ROE.

Conclusions

In this paper, the long-term profitability of conglomerates has been examined both in terms of accounting and market-related measures of performance. The results presented clearly indicate that conglomerates in the South African context have significantly underperformed in comparison to non-conglomerate companies in terms of both bases of measurement. It is, therefore, concluded that conglomeration *per se* is not in the long-term interests of South African shareholders.

Why then, does conglomeration continue to be a feature of the SA capital markets? The research presented in this paper does not allow a definitive answer to this question as it merely provides evidence of suboptimal performance by the conglomerate group. However, these results are consistent with the agency theory arguments that conglomeration, while not in the overall interests of the shareholders, is in the interests of management. By the process of conglomeration, managers increase the asset base under their control, thereby possibly providing non-financial benefits such as status, power, etc., to themselves. In addition, Naude & Hipkin (1985) have shown that management compensation may be more highly correlated with firm size than with profitability. Consequently, conglomeration can result in both non-financial and financial benefits to managers. Thus, managers have clear motives for increasing the size of their companies.

The results in this paper indicate that they may do so to the detriment of the common stockholders.

It must be stressed, however, that this is only one possible explanation of the empirical evidence presented in this paper. Several other explanations are possible. In particular, it is possible that the period studied was too short to provide a definitive test of the value of conglomeration. Alternatively it is feasible that because firms compete for efficient managers in the overall personnel market, shareholders may be prepared to pay additional compensation to the most efficient managers in order to attract them to the corporation. Part of this compensation may be in the form of allowing the firm size to increase (Fama, 1980). Of course, this doesn't fully explain why such shareholders should be prepared to accept lower returns than they could earn by doing their own diversification. The only rational explanation would be that they believed that in the longer term (greater than the six years covered in this study) they would indeed be compensated in terms of stock market returns as a result of their investment in such highly efficient managers.

Finally, it is obvious that the results presented in this paper only provide an initial examination of the value of conglomeration in the SA context. Much additional research is necessary before many of the questions raised above can be answered.

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Appendix A The sample of conglomerates

Abercom Investments Ltd.
 Advanced Holdings Ltd.
 Adcock Ingram Ltd.
 Amalgamated Investment Corporation Ltd.
 Anchusa Holdings Ltd.
 Anglo American Industrial Corporation Ltd.

Appendix A Continued

Anglo-Transvaal Industries Ltd.
 Barlow Rand Ltd.*
 Bonuskor Bpk.*
 Blue Circle Ltd.*
 Bromain Holdings Ltd.*
 Calan Ltd.**
 Currie Finance Corporation Ltd.
 Diroyal Investments Ltd.
 Federale Volksbeleggings Bpk.*
 Hulett's Corporation Ltd.*
 Industrial and Commercial Holdings Group Ltd.
 Lucem Holdings Ltd.*
 Ovenstone Investments Ltd.
 Picardi Beleggings Bpk.*
 Premier Industries Ltd.
 Protea Holdings Ltd.
 The Rembrandt Group Ltd.
 Rennies Consolidated Holdings Ltd.
 Rentmeesterbeleggings Bpk.
 Seardel Investment Corporation Ltd.
 C.G. Smith Ltd.
 The South African Breweries Ltd.*
 Suiderland Development Corporation Ltd.
 The Tongaat Group Ltd.*
 The Unisec Group Ltd.*
 W. & A. Investment Corporation Ltd.

* Indicates inclusion in the pseudo-conglomerate comparison

** Included in pseudo-conglomerate comparison but not in other comparisons

Appendix B The random portfolio sample

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1. Altech
 2. Bradlows
 3. Claude Neon
 4. Currie Motors
 5. Ellerrine
 6. Frasers
 7. General Optic
 8. Genrec
 9. Group 5
 10. Gypsum
 11. I.C.S.
 12. Kanhym
 13. Lion Match
 14. Metal Box
 15. O.K. Bazaars
 16. Piccan
 17. Pretoria Portland Cement
 18. Saficon
 19. T.E.J.
 20. Willem Barends
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