THE DETERMINANTS OF CORPORATE OWNERSHIP AND CONTROL IN SOUTH AFRICA*

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ABSTRACT

This paper attempts to identify the determinants of the structure of corporate ownership and control in South Africa. Methodologically, it takes its cue from the seminal study on U.S. corporate data by Demsetz & Lehn (1985). Given that the South Africa structure with its pervasive use of pyramided holding companies and crossholdings differs radically from that of the U.S.A., certain novel insights were obtained. Whereas almost all the companies in the sample were majority-controlled, the effective percentage shareholding of the dominant shareholder group in each company varied dramatically and systematically. This paper sought to explain that variation. The relevance of its findings is not confined to countries such as Sweden that exhibit similarly concentrated control structures. Of greater significance and wider interest is its identification of the role of the market as a constraint on the ability of dominant shareholders (who insist on retaining absolute control) to dilute their equity stake for the purpose of diversifying their personal wealth and/or expanding their companies without issuing debt. Demsetz & Lehn had already identified factors determining the demand by shareholders for diversification but not those constraining their ability to do so.

I. INTRODUCTION

This paper endeavours to explain the structure of corporate ownership and control that exists in South Africa, which to our knowledge is rather similar to the structures of certain European countries (specifically Sweden, Finland, Denmark and Switzerland) and very dissimilar to those of many other countries (in particular, the U.S.A. and the U.K.).

Methodologically, the paper was conceived in the tradition of the seminal study on the subject by Demsetz & Lehn (1985). However, the data contained in that study was drawn exclusively from U.S. corporations and since the regulatory environment determining corporate governance in South Africa differs so radically from that of the United States, we were forced to modify quite substantially both the procedures and some of the analysis employed by Demsetz & Lehn.

We nevertheless consider the application of such tests to different settings around the world to be an immensely useful exercise because it will almost certainly produce findings, as we believe it already has done in the case of this and certain other papers, that *cannot* be readily obtained using U.S. data (unless special areas within the American corporate setting are sought out). Examples of valuable work of this kind include Prowse (1989), which by comparing U.S. and Japanese data examined the consequences of allowing banks to hold major equity stakes in the companies that they finance, and Bergstrom & Rydqvist (1989a), which applied Demsetz & Lehn-type tests to the Swedish structure of corporate ownership where the issue of dual-class shares with differential voting rights is extremely common (as it is elsewhere in Scandinavia and in Switzerland).

Indeed, in some ways, it is the American/British corporate structure that is rather peculiar in at least two respects. One of them (which is not relevant for the purposes of this paper) concerns the Glass-Steagall Act of 1933 which forbids banks in the U.S. to hold corporate equity and therewith, in the style of German and Japanese banks, to acquire a major voting stake in the companies which they finance. The other peculiarity, which concerns us directly, is the fairly rigorous enforcement of the "one-share-one-vote" principle. It is enforced in part by the U.S. Congress (e.g. the Public Utility Holding Company Act of 1935 prohibits the formation of pyramids, an almost perfect substitute for the issue of dual-class shares), at the level of individual stock exchange rulings (e.g. the 1926 ruling of the New York Stock Exchange prohibited the issue of dual-class shares, the restriction being lifted only in 1986) and at the level of the federal regulatory agencies (e.g. the re-imposition in 1989 of the ban on dual-class shares by the Securities & Exchange Commission).

These measures, combined with other restrictive regulations that inhibit financial institutions (such as pension funds and life insurance companies) from holding large and/or controlling stakes in public corporations (Roe 1990), have produced an exceptionally diffuse structure of corporate control, at least in the case of the large public corporations from which most of the established literature draws its data.

It is our contention that the peculiarities of the U.S. corporate structure may have distorted the findings or, at least, the ***generality*** of the findings obtained by industrial organization and financial theorists working in the

field.

We believe that this paper offers an unusual but useful perspective by casting light on how the structure of corporate ownership and control is likely to evolve in the absence of state interference with the right of controlling and passive shareholders to enter freely with one another into contracts which both parties anticipate will be to their mutual benefit, and, specifically, to issue and to purchase shares that carry with them very unequal voting rights.

The non-enforcement in South Africa of the principle of "one-share-one-vote" heightens the importance of distinguishing between "ownership" and "control". In such an environment, control (which we define as a majority of voting rights) will tend to be concentrated in the hands of a single individual shareholder or a single identifiable coalition of shareholders. This may be achieved with as much as 100% of the equity or as little as 1% or less and, indeed, our own data (drawn from over 232 industrial companies listed on the J.S.E. [Johannesburg Stock Exchange]) spans almost the entire range.

The task then (which this paper addresses) is to explain the ***market process*** by which some controlling shareholders end up retaining a relatively high equity stake in the companies under their control whereas others achieve the same degree of control with a tiny fraction of the equity.

As already mentioned, in such an environment, ownership and control cannot be considered synonymously. Yet, the established literature does just that. It treats ownership and control synonymously but with good reason. Given the restrictions in the U.S. and U.K. on corporate governance, where to acquire a majority of the *voting rights* one requires a majority of the ***shares***, the structure of corporate control becomes exceedingly diffuse, especially in the case of the large public corporations.

Vishny & Shleifer [1986] record that in 1980 the largest 5 shareholders of the top Fortune 500 companies (excluding 44 mutuals) held on average only 28.8% of the equity (and, therefore, by implication, of the voting rights) and the largest single shareholder only 15.4%. Similarly, Demsetz & Lehn, whose sample was also heavily weighted by Fortune 500 firms, record that the top five shareholders (A5) own 24,8% of the shares (and the voting rights).

It is important to recognize that wherever the largest single shareholder owns less than 50% of the shares ***and*** where in addition the principle of "one-share-one-vote" is enforced, a positive, if not linear[1], relationship exists between *ownership* and *control*. In such circumstances, control and ownership are determined jointly so that then (and only then) it becomes

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[1]The relationship between control and ownership within this range is probably not linear. More likely it is S-shaped if one ignores the possiblity of specific alliances and other game-theoretic considerations. Whereas a shareholder who has zero shares has zero voting power and one that has 50% of the shares probably has total control, 5% of the shares probably yields less than "10%" of the "power" whereas 45% of the shares is probably almost as good as 50%. One reason for the plausibility of an S-shaped curve is the non-participation of small shareholders in voting.

appropriate to treat the two concepts as coterminous.

One should bear in mind, however, that ***even within the American corporate setting***, this need not always be the case. If, for example, one chose to study the ownership pattern of small companies where the single largest shareholder holds more than 50% of the equity, it might not be appropriate to treat ownership and control as coterminous[2]. Wherever the majority shareholder owns more than 50% of the equity, he can vary his shareholding without compromising the degree of control that he is able to exercise. The same holds true (within a much wider range) for those companies (in the U.S.A. and elsewhere) that have been allowed to issue and retain dual-class shares with differential voting rights.

It follows, therefore, that in radically different settings where the principle of "one-share-one-vote" is not enforced at all(such as Sweden, where dual-class shares are common, or South Africa, where the use of pyramided holding companies is pervasive), it is ***entirely*** inappropriate to treat ownership and control as coterminous since control is then not necessarily in any way dependent on the level of ownership.

Yet, it is not merely a matter of how one "treats" ownership and control. The imposition of "one-share-one-vote" seriously affects and distorts the entire market process by which the structure of ownership and control evolves. When the founder-entrepreneur of a business first goes public and issues shares, he engages in an act of diluting his equity for the purpose of diversifying his personal wealth and/or expanding his company. That is usually only the beginning of a process of equity dilution by the majority shareholder and it normally continues without much compromise in the control structure until the 50% (shareholding) mark is reached. Thereafter, it depends on whether or not the "one-share-one-vote" rule applies. Our analysis examines what happens to the structure of ownership and control when the rule is *not* enforced. Quite apart from the more obvious consequences, such as the evolution of a more concentrated control structure, certain other relationships emerge that would not be evident in an alternative setting, particularly in one where the rule applies.

Our theoretical ideas are developed in Section II. In brief, we argue that whereas in South Africa the *control* of most companies is (as a matter of fact) in the hands of a single individual shareholder or an identifiable coalition of individuals, the ***shareholding*** of those individuals depends primarily on their "reputation" in the market, that is to say, their reputation for getting good corporate results and for monitoring and/or motivating senior management

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[2] These remarks do not apply to the paper by Holderness & Sheehan (1988) firstly because the issue of differentiating ownership and control is irrelevant to their analysis and secondly because we doubt whether their 114 AMEX companies cover a sufficiently wide span of highly favoured and less favoured controlling shareholders to obtain the results predicted and contained in this paper.

effectively. Thus the concentration of *ownership* as measured by "A1",[3] the share of the largest single shareholder group is a negative function of that group's "reputation". We recognize that firm size (which influences the "demand for diversification") is also a determinant but consider it to be of secondary importance. We also explain why foreign-based shareholders tend to hold relatively large equity stakes in the companies under their control.

Our empirical tests and findings are presented in Section III, a comparison of our results with findings elsewhere in the literature is made in Section IV and our conclusions are drawn in Section V.

[3]Not strictly A1 since the largest shareholder may not be the controlling shareholder.

II. THEORETICAL CONSIDERATIONS & STYLIZED FACTS

The Role of the Controlling Shareholder's Reputation

As mentioned, most successful entrepreneurs tend sooner or later to dilute their equity in order to diversify their personal wealth and/or expand their firms. Those, after all, are usually the motives for going public in the first place. Typically, however, they prefer, if at all possible, not to lose control of their companies in the process. Of course, until their equity is reduced to the 50% mark, the prospect of losing control does not even arise. However, whether or not the 50% mark has been reached, the chief constraint that they face in their efforts to dilute their shareholding is the market itself. Unless the *minority* shareholders are convinced of the competence and integrity of the majority shareholder in question, they are unlikely to take up any new issues on favourable terms. Accordingly, the *reputation* of the controlling shareholder is crucial in determining the percentage shareholding that he is ultimately constrained to hold[4] and the mechanism by which this is effected is principally the cost of capital.

In this way a successful controlling shareholder may reduce his shareholding until it approaches 50%. Until then, the setting is not particularly important in respect of the "one-share-one-vote" rule (although, naturally, it may be highly relevant in other respects, for example, in so far as it affects the company's ability and/or incentive to raise debt and "intermediate" forms of capital such as preference shares).

At the 50% mark, however, application of the "one-share-one-vote" rule becomes critical. Wherever it is enforced, the successful controlling shareholder is compelled to trade-off diversification and/or expansion against continued control[5]. In the face of such trade-offs, one can no longer predict that only the most talented entrepreneurs will end up holding the smallest shareholding of any *controlling* shareholder.

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[4] Yet, even with the best reputation possible, the "passive" or "minority" shareholders routinely have to weigh up the well-known principal-agent problem that their assets may at any time be "expropriated" by an indulgent controlling shareholder whose interests will not always be identical to their own (especially when his equity stake is relatively low) against the appeal of "free-riding" on his monitoring and management-enhancing talents. Typically, this calculus is reflected in part in the discount at which low-voting shares sell relative to high-voting shares (in the case of dual-class issues). Despite the discount we must presume that the minorities expect to be better off (i.e. they expect the value of their shares to be greater) as a result of the monitoring services of the controlling shareholder. Why else would they voluntarily enter into a dual class arrangement?

[5] Obviously, one may well be able to retain control of a company with less than 50% of the shares but as the percentage diminishes, control becomes less and less assured and more dependent on shifting alliances and strategic considerations (of the type considered in game theory).

By contrast, wherever "one-share-one-vote" is not enforced, this prediction ought to hold intact. There is no reason why, in such a setting, the 50% mark should constitute a milestone or cut-off point that changes the nature of the process. The most talented entrepreneurs (that is to say, those with a proven track record in being able to monitor and/or to motivate management effectively) set the broad parameters of corporate strategy and (in one way or another) maximize share values and continue to attract capital on very favourable terms and to dilute their shareholdings without having to compromise the extent to which they control their companies.

Our central hypothesis is therefore quite straightforward: ***we predict that under such circumstances the greater is the "perceived success" or "reputation" of a controlling shareholder, the lower will be his equity stake.***

Control, by contrast, is not expected to vary much. In such an environment one would expect and we have actually observed that most controlling shareholders retain an absolute majority of voting rights although in some instances partnerships and joint ventures are entered into as well. To the extent that small variations in control occur, we do not attempt formally to explain them.

Of the 288 JSE industrial companies that were initially examined, more than 259 were found to be under the absolute control of a single dominant shareholder "group"[6]. (Of the rest, 20 were joint ventures by two dominant groups. Only 4 had a markedly diffuse control structure with the largest shareholder group controlling less than 25% of the voting rights.) However, in those companies (i.e. the vast majority) where the dominant group controlled close to or more than 50% of the voting rights, the percentage of equity held by that group varied dramatically from 98,5% to 1,5%.

The Role of Firm Size

Demsetz & Lehn show that firm size is an important determinant of the degree of concentration of ownership. The reasons are cogent and compelling. For any given shareholder, the larger is the size of the firm, the smaller must be the equity stake (for any given level of debt) that such a shareholder can afford to hold without being forced to specialize his portfolio.

Given the different nature of the South African setting, however, our analysis too is a little different. Naturally, we recognize "the demand for diversification" (as outlined above) which implies that if one controls for the reputation of the controlling shareholder, then firm size is undeniably an important determinant of the concentration of ownership.

Controlling for shareholder reputation is, nevertheless, vital if one is to disentangle the "the *demand* for diversification" from that other more powerful factor, "the *ability* to diversify" (on favourable terms).

As we have already suggested, the market will constrain all but the most reputable and successful controlling shareholders to hold a substantial portion of the equity if they wish to retain control. That fact alone will

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[6] The term "group" is defined at the beginning of Section III.

reserve control of the larger firms for the more successful (i.e. wealthier) controlling shareholders since even the wealthiest will find it difficult to fund a ***large proportion*** of the equity of a large firm (once again, assuming a given level of debt). Thus, large firms will tend to come under the control of the most favoured and reputable controlling shareholders, who typically control their companies with a relatively ***small proportion*** of the equity. One therefore offers two separate and independent reasons for the negative correlation that exists between firm size and the percentage shareholding held by the controlling shareholder: (1) It reflects the demand for diversification by the controlling shareholder, a point which is well understood in the literature; but (2) it also reflects the ability of highly regarded controlling shareholders to control firms with small fractions of equity, thus affording them the opportunity to take charge of large corporations, added to which is the fact that such controllers are usually wealthy as a result of accumulated past successes. We recognize the influence of both factors but contend that the latter one is by far the more important. It is not the ***desire per se*** to diversify that is the decisive consideration but the market's decision to *allow* outstanding performers to diversify on favourable terms.

A Note on Conglomerates

A less obvious consequence of not enforcing the one-share-vote-principle is the bias that it seems to create in favour of conglomerates.

In the literature, there is a tendency to attribute the establishment of at least ***some*** conglomerates to managerial abuse. Managers may attempt to reduce their career risks by diversifying the activities of their companies even though this may lead to a decline in returns as a result of venturing into areas where the necessary expertise is lacking. As is well-known, the pretext used to justify such a move, namely that the risks for the shareholders are thereby reduced, rings hollow because the shareholders are quite capable of diversifying their portfolios on their own.

Even so, not all conglomerates are the inefficient outcomes of managerial indulgence. There may well be substantial advantages in monitoring many lines of activity through a central head office (Chandler 1962; Chandler 1977).

However, in countries where the "one-share-one-vote" principle is not enforced, there are additional factors that promote the viability of efficient conglomerates (which happen to be pervasive in South Africa and, significantly, in Sweden as well). Since managers in these countries have to answer to powerful controlling shareholders, one cannot attribute the establishment of conglomerates under such circumstances to ***managerial*** abuse.

A key consideration is the *way* in which controlling shareholders diversify their portfolios. For relatively small controlling shareholders (i.e. relative newcomers whose accomplishments are limited to a single line of activity), reducing their equity stake may take the form of purchasing a diversified but passive spread of investments. However, the larger controlling shareholders can probably exhibit superior performance in monitoring management across a wide variety of industries. Their reputation may therefore be of a more *general* rather than *specific* nature. Accordingly, the market may allow them to diversify *within* the companies under their control so that they end up

(directly or indirectly) holding controlling stakes in a number of diverse operating companies.

Thus, as it happens, the most successful companies in South Africa are not only pyramids but conglomerates as well. The most powerful of them, The Anglo-American Corporation and The De Beers Corporation (which is really a single corporate group connected by reciprocal crossholdings), is reputed to *control* between 30% (by its own in-house estimate) and 45% (McGregor 1989)[7] of the Johannesburg Stock Exchange by the capitalized market value of the companies. (By contrast, it owns, according to our best estimates, approximately only 12% of the underlying assets reflected on the J.S.E.) This group is allegedly controlled, largely but apparently not totally, by the Oppenheimer family through various nominee companies. If one adds to this group three of the next largest conglomerates, (the Rembrandt Group, controlled jointly and totally by the Rupert and Hertzog families; The Old Mutual and S.A.N.L.A.M., both of which are mutuals), the percentage of the J.S.E. controlled by all four dominant groups rises, according to McGregor, to approximately 80%.

Similarly, in Sweden, the Wallenberg family is reputed to control more than 35% of the Stockholm Stock Exchange (The Economist March 2 1991). Their holdings, too, cover a wide variety of industries.

There is an additional consideration in the South African case. The imposition of stringent currency restrictions in 1960 (which have not yet been lifted) compelled the large corporations to diversify *within* the country across many industries instead of internationally across a narrower set of activities. Had that not been the case, The Anglo-American Corporation and The De Beers Corporation would have been more diversified internationally but with a higher degree of specialization in gold and diamond mining in which the group excels worldwide.

Although the market appears to have given diversification *within* the large corporations (i.e. the conglomerates) its blessing, the blessing is a mixed one. It is well-established that the principal holding companies of the conglomerates trade at a large discount to Net Asset Value relative to the operating companies within the same stable. Our tentative explanation of this stylized fact is that any "expropriation" of passive shareholder interests by the controlling shareholders is more likely to take place at the holding company level than at the operating company level. The discount on the value of the holding companies is in this sense similar to and parallels the discount on the value of low- or non-voting shares relative to high-voting shares, the so-called "premium for control", that is well-documented in the literature on dual-class shares with differential voting rights.

However, one should not deduce from the existence of the discount that the interests of the passive shareholders are on balance undermined by the controlling shareholder. The latter also plays a positive role (in monitoring and leading management) that is reflected not in the premium for control but

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[7] The figure contained in McGregor (1989) is 49,5% but in an unpublished update McGregor puts the figure at 45%.

in the absolute value of the shares issued, both high- and low-voting shares, or in South Africa, in the shares of both the operating and holding companies. Indeed, we would expect that the more successful is the firm, the smaller is the premium for control and the greater is the absolute value of both classes of shares.

The Role of Firm-Specific Risk

Demsetz & Lehn cite "control potential" as one of the factors determining the degree of concentration of ownership. The term refers to the scope for, and potential benefits of, tightening control of the firm. The idea is that if the firm's earnings are characterized by a high level of firm-specific risk, the shareholders would find it worthwhile to monitor management closely and this would be best served by concentrating ownership.

Naturally, in settings where the "one-share-one-vote" principle is not enforced, there is no need to concentrate shareholdings in order to tighten up on control. The two operate independently. Tight control can be taken for granted. In that case, one might expect the ownership stake of the dominant shareholder to be a negative function of his company's firm-specific risk since (other things being equal) a high level of firm-specific risk is likely to increase the variance of his personal portfolio.

However, the relationship between firm-specific risk and ownership concentration is complicated by the prevalence of conglomerates in the South African setting. Since these are already engaged in more than one line of activity, the impact of any acquisition on the variance of the group's earnings would depend critically on the co-variance of the acquired company's earnings with those of the group as a whole. (Testing this is an arduous statistical task, which we have not yet completed.)

Special Considerations for Foreign Controlling Shareholders

It is interesting to note that foreign-based controlling shareholders tend to hold relatively high equity stakes in the companies that they control. The reasons may be twofold:

1) The group's reputation abroad may not be well appreciated by the local market; and

2) More importantly, the fact that a degree of vertical integration usually exists between the foreign-based parent and the South African subsidiary means that transfer pricing creates a potential source of conflict between the interests of the foreign controlling shareholder and those of the passive domestically-based shareholders.

The Role of Other Factors

Demsetz & Lehn cite two other factors that have not yet been addressed.

One is the "amenity potential" of the company. Certain industries may provide a non-pecuniary return for the controlling shareholder, such as "ideological satisfaction" in, say, the newspaper business or "fame" in the case of privately-owned American-styled sports teams.

We would expect the same principle to apply in South Africa and elsewhere but our data do not provide very fertile grounds for testing the hypothesis. Sports teams in South Africa are not privately-owned and most of the newspapers are controlled by the same few dominant conglomerates. There seems to be some preliminary evidence, however, that the equity stakes of the controlling shareholders in the newspaper companies is higher than the average for the group but the sample is to small to yield formal conclusions.

The last factor cited by Demsetz & Lehn is the "regulatory environment". Their hypothesis is that in privately-owned but state-regulated industries where pricing is vetted by a regulatory agency on a cost-plus formula, there would be less need to monitor management and the control structure would therefore be more diffuse.

We have little or no opportunity to test the hypothesis in South Africa because very few privately-owned (and listed) companies are regulated in this way. Many of the utilities that operate in this way in the U.S.A. are in South Africa directly owned and operated by the State.

III. EMPIRICAL FINDINGS

The Data: Sources and Collation

A Financial Database was established in order to test the propositions outlined above. It comprised two components.

a) Data on the structure of corporate ownership for those industrial companies listed on the Johannesburg Stock exchange.

Disclosure laws in South Africa are far less stringent than are those of the U.S.A. There is, however, a national share register to which the public can gain access with difficulty. Shares may be registered either in the name of the true owner or in the name of a nominee company, in which case the identity of the true owner remains inaccessible.

Collating such material would have been an ambitious task. Fortunately, however, much of it had already been collated by a private individual, Robin McGregor (1990, 1991). Whenever the shares are registered in the name of nominee companies, the true owners can in most cases be reliably identified. The exception concerns the nominee companies in whose name the shares of the Anglo-American/De Beers group are registered. That, however, has not proved an insuperable obstacle, as is explained below.

An inevitable implication of the pervasive use of pyramids and conglomerates was that we were not able to enter the data on each company in isolation, as McGregor does. Instead we were required to work out all the complex linkages between the companies.

This information was captured for 288 industrial sector companies on the J.S.E. This enabled us to assess (for every operating company included in the final sample) the effective percentage shareholding and the voting power of the controlling shareholder group.

b) Financial data relating to the selected industrial companies

There is in South Africa no equivalent of COMPUSTAT. We, nonetheless, obtained a database of 12 years of the annual financial statements for most of the companies that we had intended to include in the study.

The Data: Definitions, Exclusions and Problems

In respect of definitions, *ownership* refers to the percentage of ordinary stock (i.e. equity) possessed by the relevant shareholder. What is at stake here is the entitlement to a residual. (We could just as easily have included in the scope of our definition debt and intermediate instruments that lie somewhere between debt and equity, such as preference shares, but we chose not to do so.)

Control is defined as an absolute majority of shareholder voting rights. A shareholder who enjoys more than 50% of the votes is deemed automatically to control the company even though, in practice, depending on the covenants and

articles of association of the company, as well as shareholder voting participation rates it could well be that one requires more or less than 50% of the votes for this purpose. For example, special shareholder resolutions in South Africa require a 75% majority so that a coalition of 25% can block any such resolution.

Our concern, however, is primarily with the right of shareholders to dismiss and replace managers. For that purpose, only a 50% majority is needed (McGregor 1989 p.396). We actually employ a more liberal notion of control in that we assume that shareholders owning less than one percent of the ordinary stock are unlikely to cast their votes either directly or by proxy and can therefore be ignored for the purpose of identifying what guarantees an absolute majority[8]. Indeed, we went even further by allowing into our data 3 companies where the dominant shareholder group held something short of the modified 50% (46% to be precise).

Given the structure of South African corporate shareholdings and control, where the vast majority of listed companies are under the absolute control of a single dominant shareholder or shareholder "group" whose percentage of the equity varies dramatically and is often a relatively small fraction, it seemed to us that the most useful measure of ownership concentration was the equity stake of the dominant shareholder "group" alone. That is to say, where Demsetz & Lehn gauged concentration by using the A5 measure (i.e. the percentage of the equity held by the largest 5 shareholders) and other measures such as the Herfindahl Index, we saw fit to use an "A1" measure.[9]

The "group" was defined as the smallest identifiable coalition required to exercise absolute control. This was normally a single individual or family or, in the case of certain conglomerates that had been run for several decades by a partnership of two families, the two families combined. In the case of some of the director-controlled companies where no single director enjoyed an absolute majority of the voting rights, the "group" was defined as the directors collectively.

In the case of the two giant life insurance mutuals, Old Mutual and S.A.N.L.A.M., the "group" was taken to be the mutual itself although in so doing we violated the consistency of the data. Similarly, The Anglo-American/ De Beers Corporation, which is allegedly controlled by the Oppenheimer family through nominee companies but apparently in a way that could in principle be challenged by a coalition of all other shareholders, was also treated as the ultimate shareholding entity.

Fortunately, however, the inconsistency that we introduced strengthens rather than weakens our case. To illustrate the argument by way of an example, let us assume that one of these groups was able via a pyramid of holdings companies to exercise total control over a particular operating company with, say, 14% of the equity. If we had been able to go up to the level of individual (dominant) shareholders (as we did with all the other companies)

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[7] We have sampled statistical evidence to support the assertion that shareholders holding less than 1% of the shares issued are unlikely to vote.

[9]Refer to footnote on p. 4.

or if we contrived a dominant coalition of shareholders that owned 50% of the top holding company, their equity stake in the bottom operating company in question would be not 14% but 7% (i.e. 50% of 14%). Since our central hypothesis is that the most successful groups control their companies with the smallest percentages of equity and since furthermore the size of group is the most important proxy for "success", our decision not to take the three largest groups on the Johannesburg Stock Exchange (namely Old Mutual, S.A.N.L.A.M. and Anglo-American/De Beers) up to the individual shareholder level nor artificially to contrive such an outcome, has weakened our results, which nevertheless remain satisfactory. Had we taken these groups up to a genuine or contrived individual shareholder level, it would inevitably have strengthened our results.

A related problem arises from the complex pattern that characterizes the South African corporate structure where pyramids and conglomerates usually overlap. In the case of "pure" pyramids (such as the supermarket chain, Pik 'n Pay) which consist of one operating company at the bottom and one or more "pure holding companies" arranged vertically, no ambiguity arises. One enters observations only in respect of the operating company and the controlling shareholder's equity stake in it. Data pertaining to the holding company or companies are not entered and are used merely to compute the controller's underlying equity stake and to check whether he has an absolute majority in the sequence of voting rights.

However, in the South African setting, the major holding companies not only form vital links in the pyramids for the purpose of reducing the controlling shareholder's equity stake without forcing him (the controlling party) to relinquish control of the underlying operating companies. These major holding companies also own wholly-owned and unlisted subsidiary operating companies and are sometimes engaged in industrial activity themselves. Thus, in practice, the distinction between a holding company and an operating company is often blurred. Furthermore, the distinction between a holding company that essentially functions as a link in a pyramid and one which merely serves as a formal device in which to house a number of wholly-owned operating companies is also blurred. (In this regard the official sector classifications of the J.S.E. itself is of little use.) These ambiguities constitute complications that would be far less likely to arise in a setting where dual-class shares with differential voting rights (rather than pyramids) are used to achieve the same objectives.

We considered the possibility of using some refined technique of addressing the problem, such as dividing the source of attributable income of the holding companies between the lower part of the pyramid chain and ordinary wholly-owned subsidiaries and then weighting the holding company in line with the former expressed as a percentage of total income. We decided against this procedure for two reasons. Firstly, we doubt whether the financial data is publicly available in sufficiently disaggregated detail. Secondly, we have not weighted any of our observations in any case.

We did, however, use our discretion to remove a few of the more obvious large "close-to-the-top-of-the-pyramid" holding companies. For instance, we removed A.M.I.C. (The Anglo-American Industrial Corporation), the holding company in which Anglo-American/De Beers has a 74% equity stake. This served to improve our results slightly but we are convinced that there were legitimate grounds

for making such exclusions.

Since we were essentially endeavouring to assess the equity stake required by a controlling shareholder or shareholder group to exercise absolute control, we removed from our observations the very small number of industrial companies on the J.S.E. that are not controlled by any single group or identifiable coalition of groups. Likewise, to avoid unnecessary complications in our data we also decided to exclude all joint ventures, such as, for instance, A.E.C.I. (African Explosives & Chemical Industries) which is controlled jointly by Anglo-American/De Beers of South Africa and Imperial Chemical Industries of the United Kingdom.

Empirical Tests of the Hypotheses

An essential thrust of our analysis was to determine empirically how the equity stake of the controlling shareholder is related to a number of identified independent variables:

1a) The reputation of the controlling shareholder determines his "ability to diversify". It was hypothesized that the ***greater*** the reputation of the shareholder the ***lower*** would be the proportion of the firm's equity held. The variable reputation, (which is directly unobservable) was proxied by "GROUP WEALTH", calculated as the value of all JSE shares owned by the relevant group. Unlisted assets (that were not even indirectly reflected) were ignored and it was assumed that wealth reflected on the Exchange would be a satisfactory proxy for total wealth. The rationale for using wealth as a proxy for reputation is that wealth is a reflection of past success and past success may be one of the few available indicators of future success.

1b) An additional variable included in the model was each firm's PRICE/EARNINGS RATIO. Since the expected performance of the firm is in part a reflection of the reputation of controlling shareholders, the PE RATIO served as an additional proxy. It may be particularly important in the case of superior performers who have not been operating for long enough to have accumulated great wealth.

2) FIRM SIZE - It was hypothesized that the larger the firm, the smaller will be the demand by any shareholder for a holding of a fixed portion of the firm. It therefore reflects the "demand for diversification". The market capitalization of the pure equity was computed. The value of the firm's debt and preference shares were excluded. (In future tests, it may be worth making an adjustment for the amount and level of debt held.)

3) A DUMMY variable was used to mark companies controlled by foreign shareholder groupings.

The model was fitted in cross-section for a sample of 232 selected companies from a total of 437 companies listed on the Industrial Board of the J.S.E. As with Demsetz & Lehn, our study takes place at a "point" in time, using annual data. Unfortunately, owing to the different times of the year during which companies report their financial statements, the "point" was in fact merely the calendar year of 1989.

Conclusions drawn from the analysis thus represent point-in-time observations of an existing equilibrium. In particular, we consider the degree to which the various independent variables are ***associated*** with the dependent variable. No notions of ***causality*** between the dependent and independent variables can be tested in this way and no conclusions can be drawn econometrically regarding the influence on the dependent variable of a change made in the independent variables. ***It is a snapshot test of an existing equilibrium*** - inducing changes to any of the independent variables might alter the very structure of this equilibrium. To gain some meaningful insights into how these factors might co-vary through time, one would need to estimate the relationships as a multivariate time-series model. Such estimation techniques have their own attendant problems - in particular we suffer from a lack of time-series data - but standard intervention analysis techniques might throw some light on the dynamics of the relationships being investigated.

The Cross-Sectional Regression Results

The regression was estimated in linear form. A visual inspection of the relationship between the dependent variable (equity stake) and the various independent variables did not lead us to believe that these relationships deviated significantly from linearity. Moreover as the main thrust of the study was to determine whether the hypotheses were correct in a general way and not to test any specific mathematical form of a model we stuck with a linear formulation.

It must be noted that the relationship estimated is a particularly noisy one as each firm is influenced in a large way by factors which relate to it alone. Thus the degree of fit was not expected to be high. The regression results for the model discussed are presented below.

Table I

LS // Dependent Variable is EQ
SMPL range: 1 - 232
Number of observations: 232

VARIABLE	COEFFICIENT	STD. ERROR	T-STAT.	2-TAIL SIG.
C	0.5262285	0.0245179	21.463012	0.0000
GROUP	-6.075E-06	1.116E-06	-5.4417534	0.0000
FIRM	-5.656E-05	2.108E-05	-2.6828978	0.0078
PE	-0.0063589	0.0026531	-2.3968341	0.0173
DUM1	0.1057942	0.0475404	2.2253526	0.0270

R-squared	0.233115	Mean of dependent var	0.431156
Adjusted R-squared	0.219602	S.D. of dependent var	0.223189
S.E. of regression	0.197164	Sum of squared resid	8.824466
Log likelihood	50.03454	F-statistic	17.25067
Durbin-Watson stat	1.902051	Prob(F-statistic)	0.000000

The t-statistics are significant at the 5% level and of the expected sign. The R^2 is adequate for the reasons outlined above - namely the large expected proportion of firm specific variability. A major concern in cross-section studies of this type is the presence of heteroskedastic error terms and the test of H.White (1980) for heteroskedastic error terms was performed. Essentially it tests wether the existing heteroscedasticity necessitates an adjustment to the variance/covariance matrix of the regression coefficients. It yielded an F-statistic of 2.731 which is significant at the 1% level but insignificant at the 5% level. There thus exists some evidence (but not strong evidence) that an adjustment for heteroskedasdicity to the variance/covariance matrix is appropriate. The White procedure for correction of heteroskedasdicity was thus applied and the results are given below.

Table II

LS // Dependent Variable is EQ
SMPL range: 1 - 232
Number of observations: 232
Heteroskedasticity-Consistent Covariance Matrix

VARIABLE	COEFFICIENT	STD. ERROR	T-STAT.	2-TAIL SIG.
C	0.5262285	0.0286561	18.363598	0.0000
GROUP	-6.075E-06	8.931E-07	-6.8017137	0.0000
FIRM	-5.656E-05	1.765E-05	-3.2040223	0.0015
PE	-0.0063589	0.0035656	-1.7833932	0.0759
DUM1	0.1057942	0.0306742	3.4489609	0.0007

R-squared	0.233115	Mean of dependent var	0.431156
Adjusted R-squared	0.219602	S.D. of dependent var	0.223189
S.E. of regression	0.197166	Sum of squared resid	8.824466
Log likelihood	50.03454	F-statistic	17.25067
Durbin-Watson stat	1.902051	Prob(F-statistic)	0.000000

The t-statistics do not however exhibit a large departure from the unadjusted model, apart from a fall in the significance of the coefficient of the Price/Earnings term.

Another concern was the degree to which the variable *group-size* was clustered around certain magnitudes. In particular the 3 largest groups have a market value of between R25 & R34 billion . The next largest group however has a value of R623 million and the values of a number of other groups are clustered around much lower values. The results were thus re-run with group rank used instead of group size, with and without the heteroskedastic adjustment.

The regression results using group-rank rather than group Rand value are given in Tables 3 and 4:

Table III

LS // Dependent Variable is EQ
SMPL range: 1 - 232
Number of observations: 232

VARIABLE	COEFFICIENT	STD. ERROR	T-STAT.	2-TAIL SIG.
C	0.6373720	0.0283528	22.480054	0.0000
GROPSORT	-0.0015500	0.0001956	-7.9227380	0.0000
FIRM	-3.803E-05	2.009E-05	-1.8928291	0.0597
PE	-0.0028981	0.0025549	-1.1343427	0.2578
DUM1	0.0986589	0.0446015	2.2120070	0.0280

R-squared	0.320866	Mean of dependent var	0.431156
Adjusted R-squared	0.308899	S.D. of dependent var	0.223189
S.E. of regression	0.185543	Sum of squared resid	7.814721
Log likelihood	64.13072	F-statistic	26.81235
Durbin-Watson stat	1.981186	Prob(F-statistic)	0.000000

Note that the group effect has now strengthened (a t-statistic of 7.92 as against 5.44) and the t-statistics on the firm and PE effects have weakened. The regression results using group-rank rather than group Rand value with the heteroskedastic adjustment are given below:

Table IV

LS // Dependent Variable is EQ
SMPL range: 1 - 232
Number of observations: 232
Heteroskedasticity-Consistent Covariance Matrix

VARIABLE	COEFFICIENT	STD. ERROR	T-STAT.	2-TAIL SIG.
C	0.6373720	0.0287945	22.135205	0.0000
GROPSORT	-0.0015500	0.0001901	-8.1538594	0.0000
FIRM	-3.803E-05	1.085E-05	-3.5042936	0.0006
PE	-0.0028981	0.0030953	-0.9362806	0.3501
DUM1	0.0986589	0.0393891	2.5047284	0.0130

R-squared	0.320866	Mean of dependent var	0.431156
Adjusted R-squared	0.308899	S.D. of dependent var	0.223189
S.E. of regression	0.185543	Sum of squared resid	7.814721
Log likelihood	64.13072	F-statistic	26.81235
Durbin-Watson stat	1.981186	Prob(F-statistic)	0.000000

These exhibit similar patterns in t-statistic change to the regressions with Group rather than Group rank.

Conclusions of the Empirical analysis

The model clearly captures the main thrusts of this paper, namely that the greater the reputation of the group (proxied by group market value) the lower the equity stake a controlling shareholder will hold and the larger the firm, the lower the equity stake a controlling shareholder will hold. ***Of greater significance is the result that the influence of group reputation is a much more significant explanatory factor than firm size in the South African corporate environment.*** These conclusions are not altered by considering the group reputation variable in nominal or ranked form and after adjustment for

possible heteroskedasticity of the error term . In addition the Price/Earnings ratio is seen to be a contributory factor, as is the influence of foreign ownership.

IV. SOME RELATED FINDINGS OF OTHER STUDIES

It may be interesting to compare our findings with findings on related topics elsewhere in the literature.

Several studies have stressed the social suboptimality of dual class share arrangements either on theoretical grounds (Grossman & Hart 1988; Harris & Raviv 1988) or on empirical grounds (DeAngelo & DeAngelo 1985). Other studies attempt to show that even under the one-share-one-vote rule, firm value is likely to decrease as the managers increase their ownership of shares beyond a certain threshold level (e.g. Stulz 1988; Morck, Shleifer & Vishny 1988; McConnell & Servaes 1990).

Our own paper is not *directly* inconsistent with these findings simply because it does not address the same issues. There is nothing in our findings to indicate the social optimality of dual-class shares or pyramids. What we describe is merely a market process that is likely to evolve in a setting wherever the one-vote-one-share rule is not enforced. Although that process is not captured by the tests that we conduct, its predicted outcomes are consistent with our findings.

The papers by Stulz *et al* focus essentially on the loss of firm value that might result in a takeover situation owing to the entrenched position of management. Yet, a firm that is ripe for a takeover is by implication being mismanaged. The market process that we describe operates most successfully when the firm and its controlling shareholder group are performing well. The danger with the system that we describe is that once the firm is no longer being well-managed, there may be less scope for remedying the situation than there would be in a one-share-one-vote environment. Hostile takeovers are obviously impossible. However, since the right to control the firm is not obtained by default or by shifting strategic alliances but is a tenured and tradeable right, the controlling shareholder may well find it worthwhile to sell out under such conditions.

Our hypothesis is that wherever the one-share-one-vote rule does not apply, controlling shareholders are *constrained* by the market to hold a substantial portion of the equity and only the finest performers are "allowed" to reduce their stake to very low levels. Interestingly, this hypothesis has not been considered even in the studies that show dual-class arrangements and majority-owned companies in a favourable light (cf. Holderness & Sheehan 1988; Bergstrom & Rydqvist 1989b; Lehn, Netter & Poulsen 1990).

For instance, both Bergstrom & Rydqvist and Holderness & Sheehan cite the fact that controlling shareholders often hold more equity than the minimum necessary for control. They interpret the fact as evidence that the sole objective of the controlling shareholder is *not* to expropriate value from the firm. We do not doubt the validity of that conclusion but we question their selection of evidence to support it. Controlling shareholders hold a higher proportion of the equity than the minimum they need for control not because they wish to re-assure anyone but because they are constrained to do so by the market. Their reputation (or lack of one) is the critical factor determining how tight that constraint is likely to be.

V. CONCLUSION

The application to the South African corporate setting of some of the tests conducted by Demsetz & Lehn, in their attempt to identify factors determining the degree of concentration of corporate ownership, required substantial modifications. In particular, in the South African setting where, as in certain European countries (like Sweden), the principle of "one-share-one-vote" is not enforced, it makes no sense to treat ownership and control synonymously.

Indeed, one is tempted to argue that *in general* one should not treat ownership and control synonymously. It makes sense to do so only when in addition to and as a result of the rather "artificial" encumbrance of the "one-share-one-vote" rule, the distribution of corporate voting power is made so diffuse that the largest single shareholder holds considerably less than 50% of both the equity *and* the voting rights. This is indeed the case with the large U.S. corporations and for that reason alone it was entirely appropriate of Demsetz & Lehn (and some of the other studies) to treat ownership and control synonymously.

One readily finds in South Africa (and elsewhere, such as Scandinavia and Switzerland) where capital structures are not distorted by the imposition of the "one-share-one-vote" rule, that the dominant shareholder typically prefers to retain total control whether or not he is able to dilute his equity stake for the purpose of diversifying his personal wealth and/or expanding his company. In the absence of the rule, there is legally no minimum percentage equity that he is obliged to hold in order to retain control[10]. What constrains him in practice is the "market" itself, that is to say, the passive or non-controlling shareholders who have to purchase new issues of common stock on favourable terms if the controlling shareholder is to find it worthwhile to dilute his equity stake.

Accordingly, we find that only the most successful and reputable controlling shareholders are able to substantially reduce their equity stakes (often to only a few percent) without having to surrender control. The others usually retain control but to do so they are forced to hold a relatively large equity stake in the companies under their control.

The "reputation" of controlling shareholders (proxied in our empirical work by shareholder wealth and the price-earnings ratios of their companies) is therefore a far more important determinant of the extent to which their equity stakes can be diluted (for the purpose of personal diversification and/or company expansion) than is "the demand for diversification" which in our empirical work is proxied by firm-size.

Apart from these more general considerations, we also observed that foreign-based controlling shareholders tended to hold higher equity stakes

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[10] According to Bergstrom & Rydqvist a weak form of the rule exists in Scandinavia. In Sweden and Finland, the low-voting shares must have collectively no less than 10% of the voting power and in Denmark the limit is 5%.

than was the case with local shareholders, other things being equal. There may be several reasons for this but the most plausible one is that since there is usually a degree of vertical integration between the domestic company and its foreign parent, local "passive" shareholders fear a heightened conflict of interests between themselves and the foreign-based controlling shareholder on account of the possibility of manipulated transfer pricing.

We anticipate that our results can be replicated in any environment where the principle of one-share-one-vote is not enforced and even where it is enforced, it ought to be possible to replicate the results by focusing on relatively small firms where the equity stake of the largest single shareholder exceeds 50%.

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