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# Syntax of consolidated financial statements: the impact on credit-manager's decision making

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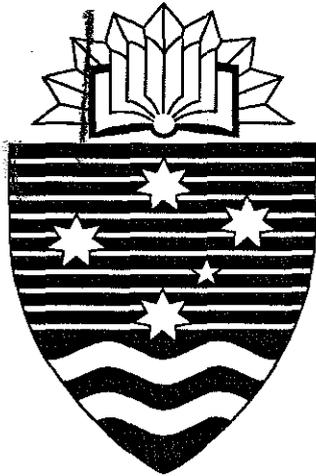
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**"Syntax of Consolidated Financial Statements:  
The Impact on Credit-Manager's  
Decision Making"**

by

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# Syntax of Consolidated Financial Statements: The Impact on Credit-Manager's Decision-Making

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# **Syntax of Consolidated Financial Statements: The Impact on Credit-Manager's Decision-Making**

## **ABSTRACT**

A loan decision experiment was designed to test whether or not the decisions of users of consolidated financial statements differed when the accounts are prepared using the *economic entity*, the *parent company* and the *narrow economic entity* approaches. Credit managers evaluated the semantic meaning of three treatment company financial statements (prepared under the three consolidation approaches). They also stated the level of loan they would grant each company. The analysis shows that credit-managers react differently depending on how the consolidated information is presented. The experiment does not show which method is 'correct', only that credit-granting decisions are affected by the choice of consolidation method.

**Keywords:** Consolidated Statements, Consolidation Methods, Semantic Differential, Credit Decision-Making

# Syntax of Consolidated Financial Statements: The Impact on Credit-Manager's Decision-Making

## INTRODUCTION

Consolidated statements emerged as the preferred form of reporting for groups of companies in the early 1900s. It is debatable exactly what factors induced companies to voluntarily produce consolidated accounts. However, Whittred (1986, 1987) suggests that consolidated statements developed to reduce agency costs in the debt and equity contracts of 'pre-regulation' consolidators. Subsequently, stock exchange (e.g. ASX Listing Rules), regulatory (e.g. Corporations Act) and professional (e.g. Australian Accounting Standard 24) bodies codified the need for groups of companies to publish consolidated financial statements.

The development and continued existence of consolidated financial statements implies an inherent utility, at least in some circumstances, over traditional single company reports. If one accepts decision-usefulness as the primary objective in the demand and supply of accounting information (FASB, 1978; AARF, 1990a), then the continued demand for consolidated statements suggests that they are useful in decision-making. However, what is the most useful form of consolidation is debated between academics and practitioners. Ma, Parker, and Whittred (1991, p. 30) note from their survey of several consolidation texts that there is "... confusion both as to whose point of view should be taken by preparers when drawing up consolidated financial statements and as to who actually uses such statements and in what manner."

Significant differences exist internationally in practice and the prescribed form of consolidated financial statements. The new Australian standards (AAS 24 and AASB 1024) reflect practice and require the use of the *economic entity* approach when preparing financial statements. In contrast International Accounting Standard 27 recommends a hybrid of the *parent company* approach. This is largely consistent with the requirements and practice in countries such as the United States, Canada, and the United Kingdom (Leo, 1987). Proportional consolidations (also called the *narrow economic entity* method) were common in France and the Netherlands prior to moves to harmonize the accounting standards of EEC member countries. Proportional consolidations were, however, used mainly for joint control situations by companies in France and the Netherlands (Nobes and Parker, 1988). Given this range internationally, the objective of this research is to empirically determine the effects on decision making of using these different consolidation approaches.

## CONSOLIDATION APPROACHES

While the current practice and accounting standards are divided between the *economic entity* and *parent company* approaches, a plausible alternative, discussed in the literature, is the *narrow economic entity* method (Leftwich and Leo, 1974; Leo and Dagwell, 1984; Leo and Hogget, 1984). Thus there exist three competing methods that could be employed in the preparation of consolidation statements: the *economic entity* (hereafter referred to as the *entity* approach), the *parent company* and the *narrow economic entity* approaches. Each of these approaches produces different consolidated accounts when applied to the same data set, mainly because of the different concepts of what constitutes the 'group' and how to treat minority interests. The range of approaches and their treatment of minority interests is illustrated in Panel A of Exhibit 1.

### Entity Approach

The group under the *entity* approach consists of all the assets and liabilities of the holding company and its subsidiaries. Clearly there are two classes of proprietary interest - the majority interest and the minority interest. However, as depicted in Panel A of Exhibit 1, the *entity* approach views consolidated statements as being for both the majority interest and the minority interest (Baxter and Spinney, 1975). Panel B of Exhibit 1 provides detail on each consolidation method and shows that the consolidated balance sheet prepared under the *entity* approach includes "Minority Interest" as part of "Shareholders' Equity".

### INSERT EXHIBIT 1 ABOUT HERE

The Australian Corporations Act and accounting standards (AAS 24 and AASB 1024) explicitly adopt the *entity* approach and require, as has been common practice, that the full effect of all transactions between entities within the economic entity be eliminated. This is irrespective of whether or not there are minority interests in the entity as all the profits on inter-company transactions are eliminated under the *entity* approach and apportioned between the majority and minority interests. The total elimination of transaction between the members of the group contrasts with the two alternative methods of preparing consolidation statements.

### Effect of the method on decision makers

The question of whether or not different treatments of minority interest affect user decision making is currently unresolved. The different treatments exist in different markets and are used by the participants in those markets. However, the consequences of their use for the decision making of users is unknown.

The extant empirical research in Australia has found that consolidated financial statements prepared under the *entity* approach are used in credit decision making, but only affect credit assessments when there are cross-guarantees or the group is considered 'risky' (eg. Walker, Wilkins, and Zimmer, 1982; Wilkins, 1988). However, the issue of whether the approach employed in the consolidation impacts on credit or other decisions has not attracted empirical investigation in Australia or elsewhere. The debate as to how consolidated financial statements should be constructed is confined to the normative plane. Thus it is an empirical question whether the *entity*, *parent company* or *narrow economic entity* approach to consolidation provides more decision utility to users.

### Parent Company Approach

The assumption underlying the *parent company* approach is that consolidated financial statements are an extension of parent company's statements. Unlike the *entity* approach, there is a distinction in the treatment of the majority and minority holders' interests (Leo and Hogget, 1984). Panel B of Exhibit 1 shows the distinguishing feature of the *parent company* approach is its treatment of minority interest as a liability to the group in the balance sheet. This approach reflects the group's legal obligation to deal fairly with the minority interest. In a recent case, Adelaide Steamship Co. Ltd. forced the rights of the minority shareholders to be recognised by the majority shareholders (Bond Corporation Ltd.) in Bell Resources Ltd. The actual amount of obligation to minority interest holders is assumed to be the minority interest's proportional share of the equity in the subsidiary.

The pure *parent company* approach requires all assets, liabilities, income, and expenditure of all companies in the group to be included in the consolidated accounts (Arthur Anderson & Co., 1983, p.5). However, only the parent company's share of any inter-company transactions are eliminated because the minority interest's share of the transaction is considered to be a transaction with an external party.<sup>1</sup>

### Effect of the method on decision makers

Companies preparing consolidated statements under the *parent company* approach, that have cross-guarantees, may be disadvantaged in their ability to raise loans due to the minority interest being included as a liability. This problem is exasperated given Walker *et al's* (1982) finding that consolidated financial statements are relied upon more heavily in making loan assessments where cross-guarantees exist and/or the

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<sup>1</sup> American practice varies from this pure *parent company* approach in that all inter-company transactions are eliminated and apportioned between the majority and minority holders making US practice similar to the *entity* approach in this regard.

borrower is considered 'risky'. If financial statement users base their risk assessment on the apparent debt to equity ratios reported under the *parent company* approach, without adjusting for minority interests, then there will be a systematic downward bias on the credit assessment of the loan applicant.

An excerpt from an internal credit manual of an American-based international bank illustrates strategies with respect to such credit assessments:

"Because of the inherent risks and control problems in group lending, the essential loan decision should be to lend only to the strongest, self-sufficient members of the group, based on the individual borrower's needs and its self-sufficient cash flows."

In assessing the "self-sufficient" status of any member of a group it is necessary to eliminate all intra-group transactions. This may be difficult to do directly, therefore a consolidated set of accounts may be the only information source from which to gain some idea of the extent of intra-group activities. If the liability item "Minority Interest" is interpreted as a real liability to the group (i.e. included in the calculation of debt/equity and other evaluation ratios), then this form of consolidation may influence credit-managers' lending decisions. Hence, the 'meaningfulness' of information contained in consolidated statements prepared under the *parent company* approach may depend upon the extent to which users understand the subtleties of the balance sheet accounts that are the product of applying the *parent company* approach.

#### **Narrow Economic Entity Approach**

The group under the *narrow economic entity* approach is defined as the assets and liabilities of the holding company in addition to the holding company's share of the assets and liabilities of the subsidiary (Leftwich and Leo, 1974; Leo and Dagwell, 1984, and Leo and Hogget, 1984). This accumulation of 'fractions' of assets and liabilities can be thought of to as a proportional consolidation.

Exhibit 1 shows that the group financial statements calculated under the *narrow economic entity* approach exclude external equity belonging to minority shareholders. Thus the proportion of assets and liabilities represented by the minority shareholders' share of equity are excluded from the consolidated accounts and the balance sheet contains no account for 'Minority Interest' as it is external to the group. Further, only the holding company's share of any profits of the subsidiary are brought into the consolidated accounts. Hence, only the holding company's share of any intra-group transactions need to be eliminated in order to determine the profit or loss attributable to the internal equity providers.

### **Effect of the method on decision makers**

One could easily argue that consolidated accounts prepared under the *narrow economic entity* approach leave out important information about the minority interest's share of assets and liabilities that could aid users in their decision-making. However, no evidence has been produced to suggest that these consolidated accounts are any more or less deficient in information content or 'meaningfulness' (Leo and Hoggett, 1984, p.513). Credit-managers, however, may rate the *narrow economic entity* consolidation method as providing the most 'meaningful' information because minority interest is not seen as a liability to the group, and therefore the accounts would show a more favourable equity position.

The *narrow economic entity* approach is criticised by Smith (1972) who argues that the consolidated accounts should reflect the all of the assets, liabilities and earnings of the operations under the control of the holding company. Excluding the proportion of the assets and liabilities attributable to minority shareholders means that the accounts will be deficient in the information they give to shareholders in the subsidiary company. It is debatable whether or not the consolidated accounts for a group should attempt to accommodate minority shareholders' reporting needs as advocated by Smith (1972). Nevertheless, Smith's (1972) argument suggests that the consolidated accounts produced under the *narrow economic entity* approach may provide 'meaningful' information to some investors and creditors, yet other creditors and investors may not consider such accounts to be 'meaningful'. Thus there may be a conflicting utility with respect to the 'meaningfulness' of the information conveyed by *narrow economic entity* consolidated statements.

## **'MEANINGFULNESS' TO USERS**

The stated objective in preparing financial reports is to "provide information useful to users for making and evaluating decisions about the allocation of scarce resources" (AARF 1990a, SAC 2, para 43). This objective is more focused in relation to the preparation of consolidated accounts as the over-riding purpose is "... to present, primarily for the benefit of the shareholders and creditors of the parent company, the results of operations and the financial position of a parent company and its subsidiaries essentially as if the group were a single company with one or more branches or divisions" (Accounting Research Bulletin, No. 51, 1959, para 1). Thus the function of consolidated accounts is to provide group information that is meaningful to users and facilitates the decisions of those users interested in the group of companies.

'Meaningfulness' has been identified in the psychological literature as one of the three major variables involved in decision-making (Tzeng, 1975). Thus an examination of which method of preparing consolidated statements is more 'meaningful' in a decision context is a necessary condition (though not sufficient) for assessing their impact on decision-making. Bruns (1968) provides a model that may be used to illustrate the role of 'meaningfulness' in the decision-making process:

$$(Z_1, Z_2, \dots, Z_n) = h (X_1, X_2, \dots, X_n)$$

Where:

$Z_1, Z_2 \dots Z_n$  = sets of decisions based on inputs.

$X_1, X_2 \dots X_n$  = various inputs into the decision process.

$h$  = function converting inputs to the decision output.

The 'meaningfulness' of consolidation statements is represented in the model as one of the values of  $X_n$ . That is, consolidated statements provide at least part of the information inputs for user's decision-making and hence have 'meaning' to the users.

An approach to measuring 'meaning' was pioneered in the psychological literature by Osgood, Suci, and Tannebaum (1957). They proposed that people make all their judgments through a series of cognitive filters. These filters, also called factors, represent the dimensions of the attribute of the things being judged. In this case the attribute whose factors we are concerned with is the usefulness of accounting information. Each factor is like a cognitive force that combines to make a vector of effectiveness analogous to a vector of force in physics. The research tool developed by Osgood *et al* (1957) to measure meaning is called a semantic differential and consists of a set of bipolar adjectives that represent the independent dimensions of a multidimensional semantic space. Osgood's measure of meaning is a metric of a subject's reaction to a given stimulus. In this case the stimulus is a consolidated balance sheet and the measure of meaning correlates to an individual's assessment of the economic reality represented by those financial statements. Osgood's semantic differential has been used widely to identify the cognitive structure and the measurement of differences in meaning for a variety of constructs.

However, Osgood's theory suggests that human evaluations of a complex attribute, such as usefulness of accounting information, involves multiple factors. While there is no theoretical limit to the number of factors involved in a judgment, Osgood's

research suggests three such factors for general judgments.<sup>2</sup> These factors are an evaluative factor, a potency factor, and an activity factor. Evidence suggests, however, that these general factors cannot be applied directly to specialist areas of judgment (Osgood *et al.*, 1957, p: 54).

In the accounting literature, Haried (1972, 1973) employed the semantic differential approach to identify the factors utilised by financial statement users to evaluate usefulness of accounting information. However, Haried's (1972, 1973) finding of a lack of shared meaning is shown by Houghton (1988) to be the product of the incorrect application of the statistical procedures for identifying the number of factors. Houghton (1988) re-analyses Haried's U.S. data and finds a three factor structure consistent with Osgood's original work on the general dimensions of meaning.

In the Australian context, McNamara and Moores (1982) also found a three factor structure relevant to the measurement of meaning in the accounting domain. They developed a test instrument that employed Haried's (1972, 1973) bipolar scales and most of his accounting concepts. McNamara and Moores (1982) labelled their three factors, or dimensions of meaning in accounting judgements, to be relevance, verifiability and adaptability. These factors reflect the attributes of accounting information as proposed by the FASB (1980), The Corporate Report (1975) and the AARF (1990b). Exhibit 2 depicts the hierarchy of accounting qualities as derived by McNamara and Moores (1982).

#### INSERT EXHIBIT 2 ABOUT HERE

Bagranoff [1990] argues the semantic differential technique is "under used" in accounting research, relative to other social science disciplines, partly due to Haried's original negative conclusion. It is now clear, however, that the semantic differential's usefulness, validity, reliability and effectiveness, in other settings and in other countries, suggests it is also suitable for accounting research. Bagranoff (1990) argues strongly for the use of semantic scales and delineates a prescription for the use of such techniques to measure the connotative meaning of accounting stimuli. Thus semantic scales represent a valid alternative to actual decisions for measuring the usefulness or meaning of different accounting techniques.

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2 A literature search based on the Social Science Citation Index revealed in excess of 5000 uses of the semantic differential from 1975 to 1980. All of the psychological research identified in this literature search found or used three factors regardless of the domain of interest.

## HYPOTHESES

The proposition tested in this preliminary study is that the *alternative methods of preparing consolidation statements do in fact make a difference to the credit - manger in the granting of credit*. In the current study we can assess the decision usefulness of the three different consolidation approaches by firstly measuring the relative meaning of the different consolidated accounts on a semantic scale, and secondly by testing for differences in decisions across treatments. Thus two specific hypotheses emerge for testing in relation to the proposition:

### Hypothesis One

The credit-managers' semantic scores for the 'meaningfulness' of the three methods of consolidation will be equal, that is  $d_1 = d_2 = d_3$ .

### Hypothesis Two

The dollar value of the loan the credit-managers grant on the basis of each consolidation method will be equal, that is  $\$loan_1 = \$loan_2 = \$loan_3$ .

## RESEARCH METHODOLOGY

An experiment was designed to test whether or not the decisions of users of consolidated financial statements differed when the accounts were prepared using the *entity*, the *parent company* and the *narrow economic entity* approaches. A loan decision task was developed that required credit-managers to form a credit judgement based on the differing financial statements. The following sections detail the experimental task, the subjects for the study, the instruments used, and the procedures employed.

### Experimental Task

Credit-managers were presented with three sets of consolidated accounts for which the same base data and transactions formed the inputs. The statement sets differed, however, in the consolidation concept underlying their preparation. A set of consolidated accounts were prepared under each of the three alternative concepts of the group - *entity*, *parent company*, and the *narrow economic entity* approaches. When these consolidated financial statements were used in the credit-manager's questionnaire they were presented as three different companies, each depicted by a company name: Cairns Ltd and Subsidiaries (*entity*), Brisbane Ltd and Subsidiaries (*parent company*), Sydney Ltd and Subsidiaries (*narrow economic entity*). The

subjects were then required to rate on a semantic scale the 'meaningfulness' of each of the three sets of consolidated accounts. The task also asked the credit-managers to nominate the dollar level of loan that they would lend each of the three companies.

### **Subjects**

Two groups of subjects completed the research experiment. Initially thirty-eight third-year accounting students were required to complete the test booklet to facilitate an assessment of the reliability of the scales to be used in the experiment. The use of students as surrogates in experiments always involves external validity threats. However, Ashton and Kramer (1980) found that students were adequate surrogates for auditors when performing similar tasks. It seems reasonable to treat accounting students as suitable surrogates for the target population that uses accounting information. The outcome of the reliability pre-test are analysed in the results section.

The second subject group consisted of credit-managers that were required to make judgements on the consolidation statements prepared under the three alternative methods. Fourteen credit managers, from various banks and finance companies around Brisbane, were the subjects for the experimental task. The credit-managers were not chosen randomly as a register of the loan officers' population was not available. The credit-managers were, however, selected if they had at least two years experience in granting credit to companies.

### **Instrument**

The instrument employed to measure the 'meaningfulness' of accounting information consisted of the seven point semantic differential scales developed by McNamara and Moores (1982) to measure user cognitive structures in the Australian context. The sixteen bipolar adjectives utilised in the test instrument were those scales that had a factor loading of greater than 0.50 and which loaded on one of the first three factors extracted in McNamara and Moores' (1982) factor structure. Thus the sixteen scales measure the three dimensions of meaning in accounting: relevance, verifiability, adaptability. These dimensions form the basis of a metric to measure the meaning of accounting stimuli. Exhibit 3 lists the sixteen semantic differential scales included in the current study.

### **INSERT EXHIBIT 3 ABOUT HERE**

To determine the appropriateness of the semantic scales a reliability pre-test was carried out on third year accounting students. A test booklet was compiled which required the students to judge the three accounting concepts - "assets", "liabilities",

and "goodwill on consolidation" - on a set of sixteen bipolar scales.<sup>3</sup> Reliability measures were then calculated to determine the extent to which the scales for each dimension of meaning were internally coherent. The dimensions in the test booklet being measured were verifiability, relevance and adaptability. Cronbach's alpha was calculated as a measure of the reliability of each scale and represents the maximum likelihood estimate of the reliability coefficient if the parallel model is assumed to be true.<sup>4</sup>

The test instrument for the credit-managers judgements of 'meaningfulness' consisted of the scales used in the reliability test that captured the three dimensions of 'meaning' used in accounting cognition: relevance (R), verifiability (V) and adaptability (A). In order to get a single measure of 'meaningfulness' from these three scales a distance (d) measure is employed. The 'd' score is calculated for each individual, using their average rating on each dimension of 'meaning' (relevance, adaptability and verifiability) and then applying the distance formula from solid geometry. Thus, the 'meaning' of a given set of consolidated financial statements for an individual is found as follows:

$$d = \sqrt{(R^2 + V^2 + A^2)}$$

Where:

d = normalised vector of meaning for financial statements in multidimensional space

R = average score on the relevance dimension

V = average score on the verifiability dimension

A = average score on the adaptability dimension

Using this formula a 'd' score can be calculated for each subject and then used in subsequent analysis.

### Procedures

To test the hypotheses of the study a two-step approach was adopted with the first step involving a pre-test to assess the reliability of the scales used to measure 'meaning'. The second step involved the experiment which examined the effects of

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<sup>3</sup> Instrument available from authors.

<sup>4</sup> Standardized item alphas were also calculated but are not reported here. The standardized item alpha is closely related to Cronbach's alpha; the observations on each item are standardized by dividing them by the standard deviation of the item (Hull and Nie, 1981, p. 125).

the three consolidation methods on credit-manager's credit-granting decisions.<sup>5</sup> The experimental design was a single-factor, within-subjects design, where a single independent variable, the credit-manager's test instrument comprising three forms of consolidation, was administered to the same subjects. The main advantage of within-subjects design is the control of individual differences which improves statistical efficiency by removing subject variance from the between treatment error term (Greenwald, 1976). However, it is incumbent on the researcher to ensure that the treatments are camouflaged so as not to be transparent and thus induce biased responses (Greenwald, 1976; Harsha and Knapp, 1990).

The credit-managers were blind to the source of the financial statement information to ensure that the treatments were not transparent. They were told that the three consolidated statements were within a similar industry, made up of five subsidiary companies, and prepared using different consolidation methods. To measure the decision impact of the treatments the credit-managers were asked to evaluate each company's consolidated accounts and indicate the level of loan that they would grant to each of the three companies. The only additional information items given to the credit-managers were the following statements:

1. "There will be cross-guarantees between the parent and the subsidiary companies for the extent of the loan."
2. "Security is available to the extent shown in the balance sheet."

To measure the 'meaningfulness' of the different accounts, the credit-managers were asked to rate the three consolidated financial statements on the 7-point 16-item semantic differential scale adapted from McNamara and Moores (1982).<sup>6</sup> The fourteen (n) questionnaire responses to the k scales (16 bipolar adjectives for the 3 factors or dimension of meaning) and m experimental treatments (3 consolidation methods) generates an n x k x m (14 x 16 x 3) score matrix. This set of raw data may be thought of as a data cube (Osgood *et al*, 1957, p.86). Each cell in the data cube represents the judgement of a particular consolidation approach by a particular person on a particular scale. For analysis purposes the data cube is collapsed by combining the 16 scales to get the score for each factor (ie. reliability, verifiability and adaptability) and then transforming these 3 factor scores into single 'd' measure of

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<sup>5</sup> It should be noted that since 1970 the results of over one hundred experiments have been published in recognized accounting journals. Many of the more recent experiments reflect studies of judgment which focus on the behaviour of subjects in response to accounting displays and presentations (Swieringa and Weick, 1982, p.65). This experiment is continuing in this vein by analyzing the judgments credit-managers make with respect to the information contained in consolidation statements.

<sup>6</sup> A copy of the Credit-Manager's Questionnaire is available from the authors.

meaning for each subject for each set of accounts, as discussed in the instrument section above.

## ANALYSIS AND RESULTS

### Pre-Test Reliability

The reliability of the scales for measuring meaning was assessed by analysing the data gained from the test booklets completed by the students for each of the dimensions of meaning. The Cronbach alpha for the test of the verifiability dimension was equal to 0.70. Scales are usually accepted where the dimension rates a score of 0.60 or greater on Cronbach's alpha. The alpha level has to be read with regard to the overall sample size available. If the sample were to be expanded then we could expect a higher alpha. Additional analysis indicated that the alpha would not be increased by eliminating any variable. Nine variables were included in the relevance scale in the pre-test experiment. The Cronbach alpha for the relevance scale was 0.68 which is an acceptable level given the small sample size. The alpha level was not increased when any of the variables were eliminated from the analysis.

Three variables were included in the instrument to measure the reliability of the scales with respect to the adaptability dimension and the Cronbach alpha was 0.60. This is low for a reliability coefficient, given that scales are usually accepted when Cronbach's alpha is 0.60 or greater. The scales were still used in developing the credit-manager's questionnaires because the low alpha was attributed to both the small sample size and the small number of scales employed for the construct. The results for the reliability pre-test, even though they do not have high alphas, do show that the variables are significant, and therefore are reliable measures when analysing the 'meaning' of accounting information in consolidated financial statements.

### Credit-Manager's Judgements : 'Meaningfulness' Scales

The individual subject scores on each of the three dimensions of 'meaning' used in accounting cognition - relevance (R), verifiability (V) and adaptability (A) - were transformed into 'd' scores by applying the distance formula from solid geometry. This gave a 14 subject by 3 consolidation method data matrix in which each column represents the meaning of a particular consolidation statement to credit-managers as a normalised vector. The mean transformed 'd' scores of the credit-manager's judgements on the bipolar scales for each of the consolidation approaches are:

	<i>Entity</i>	<i>Parent Company</i>	<i>Narrow Economic Entity</i>
Mean 'd' score	5.936	5.514	6.154
Std. Dev.	0.404	0.339	0.324

A repeated measures ANOVA was conducted to test for any significant difference in 'meaningfulness' across the three consolidation methods (i.e. treatment effects). The repeated measures F-test for no overall intercept effect was significant ( $F=16.68$ ,  $p < 0.00$ ), therefore the null hypothesis of equal 'meaningfulness' is rejected leaving the conclusion that the mean effects on 'meaningfulness' of the different methods of consolidation are not equal. That is, consolidation method does affect 'meaning' to users and hence the decision-making process of credit-managers. Exhibit 4 illustrates the spatial relationship between the mean effects of the three consolidation methods.

#### INSERT EXHIBIT 4 ABOUT HERE

The overall F-statistic, however, tells us nothing about differences between particular means. Thus a series of pairwise comparisons were performed within the repeated ANOVA, the results of which are reported in Exhibit 5. The sample Pearson correlations between the 'd' scores for each consolidation approach are also shown in Exhibit 5. The F-test between the 'd' scores for the *parent company* and *narrow economic entity* consolidated statements as well as between the *entity* and *parent company* consolidated statements, were significantly different ( $p < 0.00$ ). However, the *entity* and *narrow economic entity* consolidated accounts were not significantly different ( $p = 0.074$ ). Thus it is concluded that the *parent company* consolidation method has less meaning and thus less decision utility to credit-managers than the two alternative consolidation methods examined.

#### INSERT EXHIBIT 5 ABOUT HERE

#### Credit-Manager's Judgements : Level of Loan Granted

In order to facilitate further analysis of the 'meaningfulness' of accounting information contained in consolidated financial statements, credit-managers indicated the level of loan that they would grant to the three companies. The mean loan amounts granted by the loan officer's under the three different consolidation procedures were:

	<i>Entity</i>	<i>Parent Company</i>	<i>Narrow Economic Entity</i>
Mean \$ Loan	\$41,429	\$38,214	\$43,929
Std. Dev.	\$ 8,187	\$ 9,325	\$ 5,609

The results from this analysis and the previous analysis exhibit a consistent pattern and suggest that the *entity* and *narrow economic entity* consolidated statements provide different and more 'meaningful' information to credit-managers. Exhibit 6

shows the relationship between the loan levels granted on the basis of the three consolidation approaches.

#### INSERT EXHIBIT 6 ABOUT HERE

A repeated measures ANOVA was used to test for any significant difference in the loans levels granted across the three consolidation methods (i.e. treatment effects). The F-statistic for the repeated measures ANOVA was significant ( $p < 0.012$ ) leading to the rejection of the null hypothesis of no difference in the level of loans granted by credit-managers for the three different consolidation approaches. Repeated measures ANOVA F-tests were also conducted to test for pairwise differences in the loan amounts granted by credit-managers under the alternative approaches, the results of which are presented in Exhibit 7. The mean loans for the *entity* and *narrow economic entity* treatments are not significantly different ( $p = 0.187$ ). However, the *parent company* consolidated accounts exhibited a significantly lower mean loan than either the *entity* or *narrow economic entity* consolidation methods. Thus one can conclude that the *parent company* method conveys different information to credit-manager users than the other two methods of consolidation.

#### INSERT EXHIBIT 7 ABOUT HERE

The *entity* and the *narrow economic entity* approaches provided more 'meaningful' information to credit-managers in their credit-granting decision than accounts prepared using the *parent company* approach. Further, the latter approach resulted in significantly lower loans than was the case for the other two approaches. Thus the two hypotheses of the study were rejected.

### DISCUSSION

The analysis of the credit-managers' responses to the psychological judgement scales indicate that *entity* and *narrow economic entity* consolidation methods are not significantly different in the meaning they convey to creditor users. However, the *parent company* consolidation method results in a significantly lower level of meaningfulness than the two alternative methods. Thus the method of preparing consolidation statements affects the meaningfulness of those statements to credit-managers. Meaning here is interpreted as the reaction of the individual to the financial statements as presented and does not imply a "normative value" to the financial statements.

A similar pattern of results emerged for the dollar level of loans granted by the credit-managers. In particular, accounts prepared under the *entity* and *narrow economic*

*entity* consolidation methods result in loan levels that are not significantly different. The *parent company* consolidation method, however, results in significantly lower dollar loans than the two alternative methods. Thus, all other things being equal, less meaningful financial statements result in lower loans.

The objective of this paper was to determine if any of the competing methods of preparing consolidated accounts provided information that is different in its meaning for user decision-making in a credit-granting situation. The analysis shows that credit-managers react differently depending on how the consolidated information is presented. The responses do not show which method is 'correct', only that user decisions (of a credit-granting nature) can be manipulated through the choice of consolidation method.

Two implications flow from these findings that need to be considered. Firstly, *ceteris paribus*, Australian firms, which predominantly use the *entity* approach, could expect to raise higher loans than their American counterparts, that typically employ a modified version of the *parent* approach in their consolidations. This stems from the fact that the Australian firm would show "Minority Interests" as an addition to equity, whereas the American firm would show "Minority Interests" as a quasi non-current liability, thereby reporting a higher debt/equity ratio and hence higher risk. Secondly, people that debate the merits of the *entity* and *narrow economic entity* approaches should note that there is no difference in the outcomes as far as users are concerned. Thus one conclusion is that we should simply use the method that is the easiest to produce, namely the *narrow economic entity* approach.

## LIMITATIONS

As with any experimental study there are factors that inherently limit the usefulness of the results. In this preliminary paper the factors limiting the results are: materiality in consolidation statements; level of financial health; level of minority interest; and external validity threats.

### Materiality In Consolidation Statements

One limitation to this study could be in relation to the materiality of the three different consolidated balance sheets presented. There was no significant difference between the total asset figures shown in the three treatments (ie. *entity* \$108 327, *parent company* \$111 574, and *narrow economic entity* \$96 290). Thus the results may have been different if there was a greater degree of spread between these amounts.

### **Level of Financial Health**

The state of a typical company's balance sheet can range from showing signs of bankruptcy and liquidation, to the other extreme where the balance sheet shows the company to be in a healthy financial position. The limitation of this experiment is that it only measured one point in the possible range of levels of financial health. Thus another potential control variable, which Walker *et al* (1982) included in their earlier study, would be the financial strength of the balance sheets presented to respondents.

### **Level of Minority Interest**

A similar criticism applies to the level of minority interest in that the test instrument in the experiment only measured minority interest at one point in a possible range. In this experiment the maximum level of minority interest was set at 25%. The test level of minority interest could be varied across the spectrum that spans from 1% through to 50%. If the level of minority interest had been varied systematically the results obtained may have been different. If the size, financial health/debt level, and minority interest 'range' issues are addressed then one could see research findings being different, and possibly more informative than the findings of the current study.

### **External Validity Threats**

A self-evident limitation of this type of research is the extent to which one can claim that the results of the study are generalisable to the target population. If the number of credit-managers had been greater, say fifty, then one would have more confidence in the generalisability of the results. However, the small sample size of the current study could limit the results of the study in that they are not generalisable to the target population. In addition, the experiment is confined to one type of user, being that of creditors making loan decisions. External validity would be enhanced if a range of user groups and user decisions were included in the experimental design. Further, the external validity of the study may be argued to be limited because of other factors that do not exist in the experiment but which are present in actual organisations.

Finally, this study was limited to the 'meaningfulness' to credit-managers of information contained in consolidation statements as an input for the credit decision-making process. Future research should focus on a wider perspective; it should examine the effect the information contained in consolidated accounts has on other interested parties. This research would enhance the analysis of whether the 'meaningfulness' of accounting information contained in consolidated accounts does influence the decision-making of users in general.

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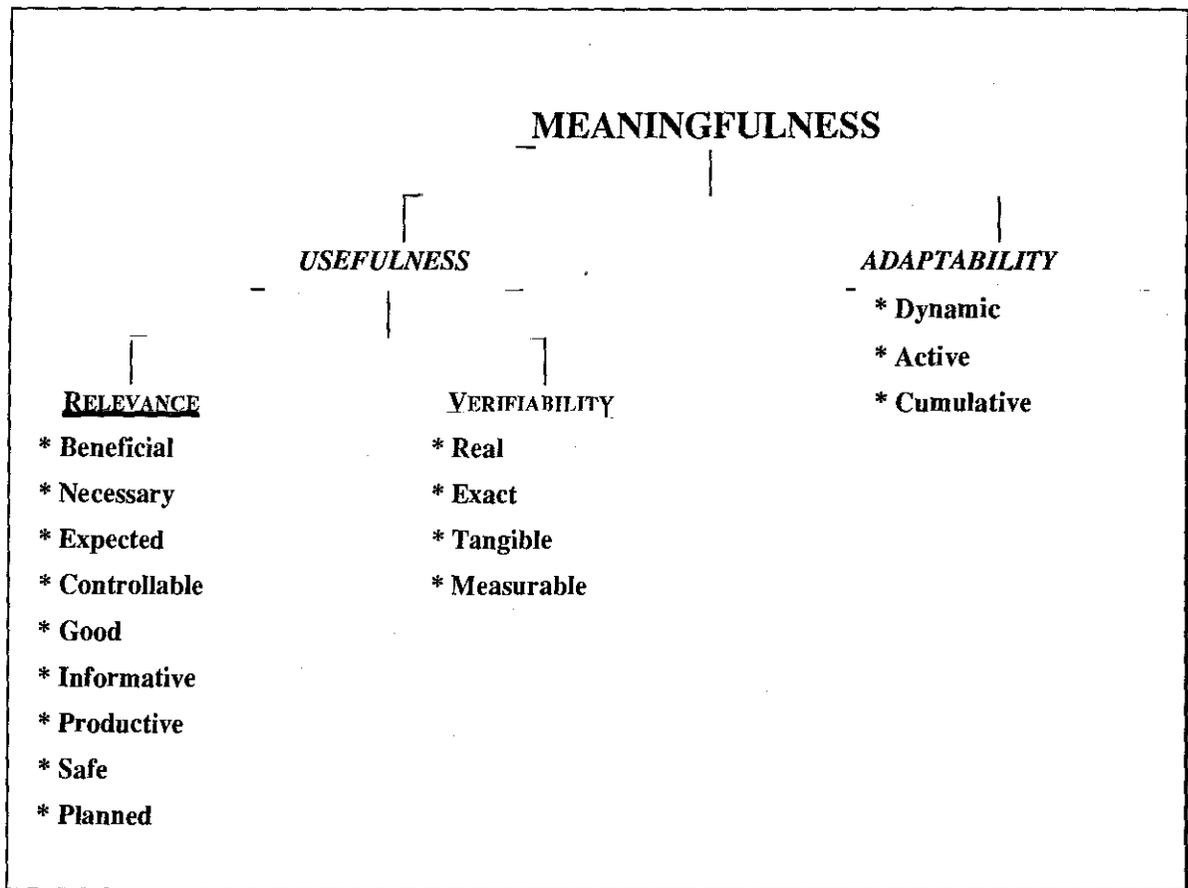
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## EXHIBIT 1: CONSOLIDATION APPROACHES AND TREATMENT OF MINORITY INTERESTS IN THE GROUP

<b>PANEL A : TREATMENT OF MINORITY INTEREST</b>			
	<b>Majority and Minority Treated Equally</b>	<b>Majority and Minority Treated Differently</b>	<b>Minority Interest Excluded</b>
Entity Approach	Parent Company		Narrow Economic Entity
<b>PANEL B : DETAILS OF CONSOLIDATION METHODS</b>			
Consolidation Items	Entity Approach	Parent Company	Narrow Economic Entity
Book Value of net assets acquired	100% included	100% included	Parent share only included
Fair Values in excess of Book Value - goodwill	100% included	Parent share only included	Parent share only included
Elimination of unrealised inter-company gains and losses	100% eliminated (apportioned)	Parent share only eliminated	Parent share only eliminated
Minority Interest Recognised:			
At Acquisition	Proportionate share of fair value - PLUS	Proportionate share of book value - PLUS	None
Post Acquisition	Share of income after adjusting for inter-company eliminations	Share of income (no adjustments)	None
Reporting of Minority Interest in:			
Income Statement	Allocation of share of consolidated income	Deduction to arrive at consolidated income	None
Balance Sheet	Stockholders' Equity	Liability	None

## EXHIBIT 2: HIERARCHY OF ACCOUNTING QUALITIES



(Adapted from McNamara and Moores, 1982, p. 30)

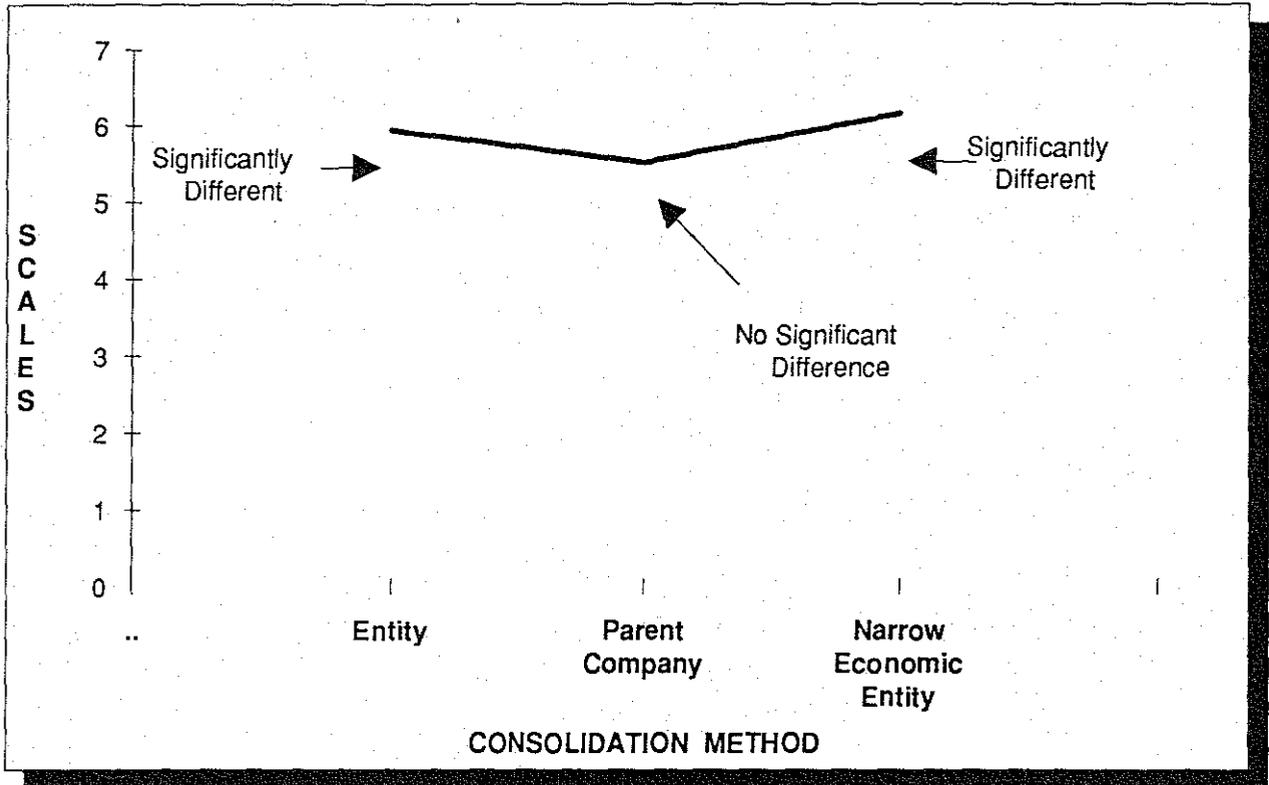
### EXHIBIT 3: SEMANTIC DIFFERENTIAL SCALES

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REAL	IMAGINARY
UNNECESSARY	NECESSARY
GOOD	BAD
SAFE	RISKY
MEASURABLE	UNMEASURABLE
UNPRODUCTIVE	PRODUCTIVE
INFORMATIVE	MISLEADING
DYNAMIC	STATIC
PLANNED	UNPLANNED
UNEXPECTED	EXPECTED
BENEFICIAL	ADVERSE
TANGIBLE	INTANGIBLE
UNCONTROLLABLE	CONTROLLABLE
CUMULATIVE	NONCUMULATIVE
ACTIVE	PASSIVE
EXACT	ESTIMATED

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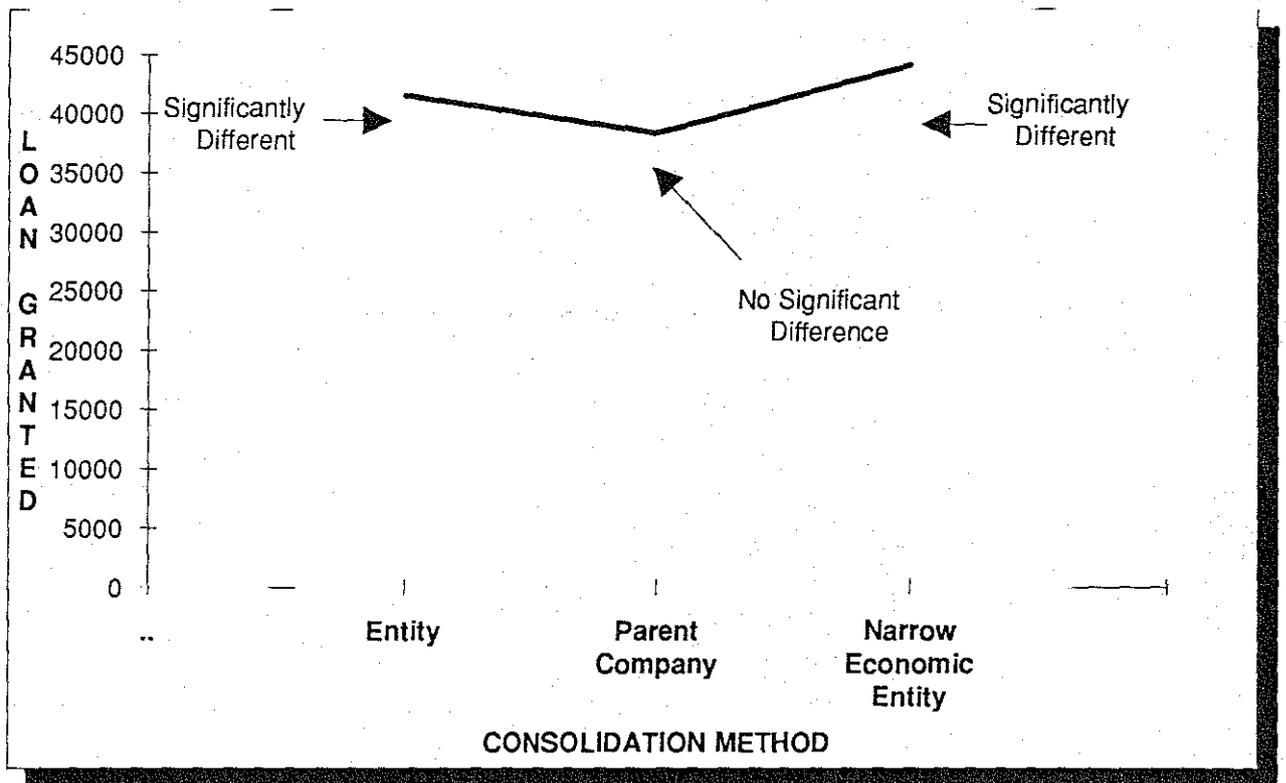
**EXHIBIT 4: RELATIONSHIP BETWEEN MEANING LEVELS OF THE THREE CONSOLIDATION APPROACHES**



**EXHIBIT 5: F-TEST FOR DIFFERENCES IN 'd' SCORE MEANING  
TO CREDIT-MANAGERS**

VARIABLE	MEAN	DIFFER- ENCE	<i>r</i>	2-TAIL PROB.	F STAT	2-TAIL PROB.
Entity	5.936	0.217	0.360	0.206	3.76	0.074
Narrow Economic Entity	6.154					
Parent Company	5.514	0.640	0.162	0.580	31.13	0.000
Narrow Economic Entity	6.154					
Entity	5.936	-0.423	0.559	0.038	20.21	0.001
Parent Company	5.514					

### EXHIBIT 6: RELATIONSHIP BETWEEN LOANS GRANTED FOR THE THREE CONSOLIDATION APPROACHES



**EXHIBIT 7: F-TEST FOR DIFFERENCES IN LOANS  
GRANTED BY CREDIT-MANAGERS**

VARIABLE	MEAN	DIFFER- ENCE	<i>r</i>	2-TAIL PROB.	F STAT	2-TAIL PROB.
Entity	41,429					
Narrow Economic Entity	43,928	2,499	0.580	0.030	1.94	0.187
Parent Company	38,214					
Narrow Economic Entity	43,928	5,714	0.475	0.086	6.66	0.023
Entity	41,429					
Parent Company	38,214	-3,215	0.943	0.000	14.42	0.002