

Asset Revaluations and Debt Contracting

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Abstract

The research question investigated is “Do managers of Australian firms use upward asset revaluations to reduce debt contracting costs?” Prior research, using sample periods from the 1970s and early 1980s, provides evidence that asset revaluations are used to reduce the costs of debt contracting (see Whittred and Chan, 1992; Brown, Izan and Loh, 1992; and Cotter and Zimmer, 1995). However, considerable changes to the institutional setting have occurred in the past decade. These institutional changes include increased regulation of asset revaluations and disclosures, changes in the macroeconomic environment, and changes in the Australian debt market. Particularly, there has been a shift in emphasis from public to private debt. The relationship between asset revaluations and debt contracting is examined in the current setting, using refined measures of contracting variables. Interestingly, the results of prior research do not replicate in the current setting. In order to further examine the potential impact of changes to the institutional setting, a series of interviews with Chief Financial Officers is undertaken. The conclusion drawn from this additional analysis is that the relatively closer relationship between firms and their bankers in the current institutional setting has caused many firms to choose footnote disclosure of undervalued assets in preference to recognising an upward asset revaluation in the balance sheet.

Key words: Asset revaluations; disclosure; private debt contracts.

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1. Introduction

This paper investigates the current relationship between asset revaluations and debt contracting. Much work in the accounting choice literature is premised on a relation between debt contracts and accounting policies. In particular, prior research provides evidence that asset revaluations are used to reduce the costs of debt contracting (see Whittred and Chan, 1992; Brown, Izan and Loh, 1992; and Cotter and Zimmer, 1995).¹ Asset revaluations have the potential to reduce the cost of debt contracting by (a) allowing firms to avoid the costs associated with technical default on debt covenants, and (b) signalling available borrowing capacity to lenders. That is, asset revaluations have the advantages of reducing leverage and providing credible signals of exit values of assets; both of which have the potential to increase borrowing capacity. Reductions in leverage also reduce the probability of technical default on debt covenants, with the probability of default being determined by both current proximity to default on covenants and expectations about future increases in debt levels. Firms therefore have incentives to revalue when increased borrowing capacity allows a reduction in the cost of new debt, and when technical default on debt covenants is probable, especially if default is expected to be costly.

Prior empirical research into debt related determinants of asset revaluations in Australia uses data from the 1970s and early 1980s. Several contextual changes have occurred since then that have the ability to impact on asset revaluations, and in particular, the relationship between asset revaluations and debt contracting. These institutional changes include increased regulation of asset revaluations and disclosures, changes in the macroeconomic environment, and changes in the Australian debt market. For example, the use of public debt by listed corporations, which has been documented to be associated with asset revaluations in prior research (see Whittred and Chan, 1992), has decreased

dramatically in Australia since that sample period; with bank loans being the major source of debt finance for listed Australian firms in the early 1990s.² It is therefore timely to re-examine the relationship between asset revaluations and debt contracting, giving due consideration to the changed contextual setting.³

This research extends the asset revaluations literature in two main ways. First, the time period chosen for empirical testing, 1993 to 1995, follows a period of considerable change in the institutional setting; thus allowing an evaluation of the impact of any associated changes to contracting and monitoring procedures on the relationship between asset revaluations and debt contracting. In particular, private as well as public debt contracts are considered. Second, the use of more refined measures of debt contract variables has the effect of reducing problems in empirical testing associated with biased coefficients and model misspecification. Watts and Zimmerman (1990) suggest that one way for future research to overcome problems associated with omitted variables is to include data in relation to standard contracts, thus avoiding biased coefficients caused by covariance of proxy variables with other independent variables. Similarly, Beneish and Press (1995) find that leverage is a poor surrogate for default or renegotiation costs, concluding (p. 352) “that tests for debt covenants effects are better specified using data drawn from lending agreements.” Accordingly, this research determines current proximity to default on leverage covenants using expected leverage measures for bank loan agreements reported in Cotter (1998), and actual contract terms for public debt.

The findings indicate that the relationship between the propensity to revalue and debt contracting variables has diminished over time, most likely due to a shift in emphasis from public to private debt. The results imply a need to consider changes in contracts and their enforcement through time.

2. Institutional setting

Several changes have occurred in relation to the institutional setting between earlier research conducted in the 1974 to 1986 time period and the current sample period of 1993 to 1995. This section describes those changes that have the potential to impact on the relationship between asset revaluations and debt contracting. These include changes in accounting and disclosure regulations, the market for debt, and the macroeconomic environment.

2.1. Changes in accounting and disclosure regulations

The accounting standards relating to the revaluation of non-current assets are AAS10 and AASB 1010 “Accounting for the revaluation of non-current assets”. These standards are essentially the same in content. However, AASB 1010 has the force of the Corporations Law (S. 298). The approved accounting standard, AASB 1010, first applied on 30 September 1987. Further references will be made only to this standard.⁴

While the same basic reporting requirements applied over the period 1974 to 1986 (see Brown, Izan and Loh, 1992), there have been three changes in asset revaluation accounting regulations since then that have the potential to impact on the relationship between asset revaluations and debt contracting. First, there has been an increase in current value disclosure requirements under the Corporations Law. In particular, commencing in October 1986, Clause 32 of Schedule 5 requires firms to disclose current values of land and building assets that are not recorded at their current values in the accounts at least every three years.⁵ This change has had the effect of requiring listed companies to revalue their property assets at least every three years and either to recognise or to disclose the revalued amounts. While the option to disclose current values

was always available, this increase in disclosure requirements has the potential to induce a three-year cycle of revaluations and encourages managers to consider disclosures as a viable option to recognised revaluations.

Second, AASB 1010 was amended and reissued in September 1991, effective 30 June 1992. The amendments incorporated the principles of the consolidation standard, AASB 1024, and require reporting entities to identify classes of non-current assets across the economic entity.⁶ This amendment had the joint impacts of requiring firms to revalue all assets in a class across the economic entity rather than on a company by company basis, and to ‘net-off’ revaluation increments and decrements across the economic entity. Australian firms now have a decreased ability to selectively revalue undervalued assets and must consider the higher costs associated with revaluing an entire class of assets whenever a revaluation is contemplated.^{7,8} It is expected that the increased costs of revaluing resulting from this amendment have decreased the propensity for firms to record upward revaluations of non-current assets.

Finally, AASB 1021 “Depreciation of Non-Current Assets” has been in effect for all financial years commencing on or after 31 December 1989. This accounting standard requires the depreciation of buildings, which under AASB 1010 must be based on the restated (revalued) carrying amount (para. 7.2.2). Taken together, they provide a further deterrent to the recognition of revaluation increments for property. Overall, amendments to AASB 1010 and the issue of AASB 1021 have had the impact of decreasing managers’ asset revaluation accounting flexibility and have effectively increased the costs associated with revaluing.

2.2. Changes in the market for debt

The proportion of Australian firms holding public debt has decreased dramatically since prior research into the relationship between asset revaluations and debt contracting was undertaken. Table 1 shows the number of public debt issues outstanding as well as the number of firms holding public debt over the 1985 to 1995 time period. The most dramatic decline relates to debentures, with the number of debentures outstanding reducing from a high of 256 in 1986 to a low of four in 1995. Convertible notes are still being utilised although considerably less than was the case during the 1980s. Australian firms no longer issue unsecured notes to the public.⁹

insert table 1 about here

This structural change in the Australian debt market has the potential to impact on the relationship between asset revaluations and debt contracting. In particular, prior research has found evidence to support the proposition that managers of Australian firms use independent revaluations of non-current assets to reduce the probability of default on their public debt contracts (see Whittred and Chan, 1992; and Brown, Izan and Loh, 1992). The limited use of public debt by Australian firms in the 1990s implies that this incentive to revalue now applies to a much lesser extent.

While private debt contracts have the same capacity to create this incentive to revalue, there are important differences in contracting and monitoring procedures between public and private debt that are expected to reduce this incentive. In particular, there is a closer relationship between borrower and lender in the private debt situation.¹⁰ Accordingly, credibility issues are expected to become more important in determining accounting policies in the private debt situation. For example, asset revaluations undertaken to avoid default on debt covenants are likely to be carefully scrutinised by the monitoring banker.

In support of this expectation, Leland and Pyle (1977) suggest that financial intermediaries such as banks establish the credibility of information.¹¹ While the incentive to revalue still exists, recognising an asset revaluation to avoid imminent default on a debt covenant will reduce the credibility of management in future dealings with the bank, possibly resulting in increased contracting costs.

The costs of default on public debt are expected to be higher than those in relation to private debt due to a less flexible renegotiation process (Leftwich, 1983; Smith, 1993), thus creating a greater incentive to avoid technical default on covenants and underinvestment problems in relation to public debt. In addition, implicit as well as explicit terms are more likely to be utilised in private debt contracting.¹² Other changes in the Australian debt market that have the potential to impact on the relationship between asset revaluations and debt contracting relate to loan evaluation procedures. While Cotter and Zimmer (1995) conclude that firms revalue non-current assets to signal borrowing capacity to lenders, they suggest that firms may no longer be able to trade-off high asset values against low cash flows as readily as was previously possible if the bad debt losses suffered by Australian banks during the late 1980s have caused a change in loan evaluation procedures.

2.3. Changes in the macroeconomic environment

Other changes in institutional settings between the previous and current sample periods include changes in the macroeconomic environment. In particular, inflation is lower in the 1990s, with asset values not rising to the extent that they did previously. Brown, Izan and Loh (1992, p. 43) report annual inflation rates (measured by changes in the consumer price index) of “about 14 per cent in the 1974-7 period, and 6.6 per cent in the 1984-6 period”. The corresponding rate in the 1993-5 period is about 2.5 per cent (INDECS,

1995). This lower inflation rate is expected to be associated with less and smaller upward revaluations of non-current assets. The impact of lower inflation is expected to be greater for firms with a higher proportion of property assets as they will now have less opportunity to employ asset revaluations to avoid debt covenant violations and associated underinvestment problems.¹³

There are several other factors that could reduce a firm's propensity to revalue. For example, the incidence of takeovers and bonus issues of shares, both found to be significantly associated with asset revaluations by Brown, Izan and Loh (1992), have decreased dramatically.¹⁴ These changes are expected to have resulted in a decrease in the number of asset revaluations associated with these activities.

3. Hypothesis and Research Methods

Prior research into the relationship between asset revaluations and debt contracting indicates that managers of Australian firms use upward asset revaluations to reduce debt contracting costs. These cost reductions are achieved through avoidance of costs associated with technical default on debt covenants, and reductions in the cost of new debt. Prior research suggests that firms with the greatest incentives to reduce costs associated with technical default have leverage covenants in place, are closer to default on these covenants, and are likely to increase debt in the future (see Whittred and Chan, 1992; Brown, Izan and Loh, 1992); while firms with the greatest incentives to increase borrowing capacity have declining cash flows from operations, high leverage, and increasing secured debt (Cotter and Zimmer, 1995).¹⁵ The following hypothesis is used to test whether managers of Australian firms use upward asset revaluations to reduce debt contracting costs in the current institutional setting:

The likelihood of revaluation is positively associated with: (a) the existence of leverage covenants (b) current proximity to default on leverage covenants, (c) expectations about future increases in debt levels, (d) declining cash flows from operations, (e) leverage, and (f) increases in levels of secured borrowings.

Testing of this hypothesis is not merely a replication of previous research. In order to control for changes which have decreased firms' ability to reduce debt contracting costs via an asset revaluation, tests of this hypothesis (a) limit the sample to those firms for which it can be established that an undervaluation of non-current assets exists, thus controlling for the impact of lower inflation; (b) consider private as well as public debt contracts. In particular, current proximity to default on leverage covenants contained in bank loan contracts is determined; and (c) consider revaluations of property assets separately to those of other, less regulated classes of assets.

3.1. Sample

Sample selection is determined on the basis of industry classifications, since testing is limited to those industries for which information in relation to bank loan contracts is available in Cotter (1998); these are manufacturers, retailers, and transport service providers.¹⁶ An attempt was made to obtain financial statements for the total of 279 firms listed in the 1994 Australian Stock Exchange (ASX) Handbook under the following industry categories: building materials, alcohol & tobacco, food & household, chemicals, engineering, paper & packaging, retail, transport, and miscellaneous industrials.¹⁷

Financial statements were not available for 67 firms at the time of data collection. Another 33 firms were deleted from the sample because a perusal of their financial statements revealed that, although they were classified by the ASX as miscellaneous

industrials, they did not appear to be manufacturers, retailers or transport service providers. A further eight firms were deleted from the sample because they were incorporated outside Australia. Thus the final sample comprised 171 listed Australian firms. Missing data for some firms in some years reduced the number of useable observations to 145, 171 and 169 for 1993, 1994 and 1995 respectively. The total sample is thus 485 firm-years. Revaluers are compared with non-revaluers for both the full sample of firm-years and the sub-sample of firms for which it can be established that an undervaluation of non-current assets exists. Tests on this sub-sample of 146 firm-years control for the impact of lower inflation evident in the current setting.

Table 2 shows summary statistics in relation to the magnitude and materiality of recognised revaluations and undervaluation disclosures. There are a total of 68 revaluations spread across the three years 1993 to 1995, including 50 revaluations of land and buildings. In addition, 48 new valuations of land and buildings have been disclosed in the footnotes.

insert table 2 about here

Further analysis of the sample reveals that, while the majority of revaluations are of land and buildings, revaluations of plant and equipment and investments each represent over 14% of the total number of revaluations. Not surprisingly, revaluations of plant and equipment, and identifiable intangibles, are confined to the manufacturing firms. The majority of revaluations of assets other than land and buildings occurred in 1993; while 1995 had the largest number of both undervaluation disclosures and recognised revaluations of land and buildings, likely induced by legal requirements to disclose current values every three years.¹⁸

Half the revaluations are recorded as being performed by independent valuers; while almost another 20 percent are recorded as either directors' valuations based on independent valuations, or a combination of independent valuers and directors. Only 30 percent of revaluations are performed solely by directors.¹⁹ Interestingly, independent valuers are generally used when a new valuation of land and buildings is recognised (84%), while directors' valuations are used for more than half of the undervaluation disclosures (56.25%). This suggests that directors are more inclined to seek an independent certification when the revaluation increment is to be recognised, possibly for legal liability reasons.

On average, these revaluations and disclosures represent a small proportion of both total and non-current assets, and have a relatively small impact on leverage. A comparison of the summary statistics presented in table 2 with those of previous studies indicates that, on average, less firms are revaluing their non-current assets in the 1990s than was the case in the 1980s, and those firms which revalue do so for a lesser amount. For example, over 25% of Brown, Izan and Loh's (1992) sample firm-years contain revaluations compared with 14% for the current sample, while Whittred and Chan (1992) report mean (median) revaluation increments of 7.73% (3.98%) of total assets compared with 4.7% (1.0%) for the current sample. This change indicates a decrease in the potential debt contracting benefits of asset revaluations associated with lower inflation.

3.2. Variable measurement

3.2.1. Revaluation increment amount

The revaluation increment amount for each firm in each year is determined by reference to financial statement notes in relation to the asset revaluation reserve, and is scaled by

total assets (net of the revaluation increment) to control for the impact of differences in firm size.

3.2.2. Existence of and proximity to default on leverage covenants

The likelihood that a firm has leverage covenants in its debt contracts is measured as a dummy variable with a value of one if a firm has either bank or public debt outstanding, and zero otherwise. Cotter (1998) indicates that leverage covenants are likely to be contained in bank loan agreements as well as public debt contracts. It is less likely that other types of debt contract will contain these covenants.

Current proximity to default on leverage covenants is estimated by determining the expected leverage covenant percentage limits for each firm, and then calculating proximity to these limits using the measurement rules normally specified in debt contracts and available financial statement information. For firms with public debt on issue, leverage covenants are determined by reference to the relevant trust deed where these are available, and estimated using median leverage for convertible notes (80%) in other cases.

For firms with bank loans outstanding, expected leverage covenants are determined on the basis of results of investigations into bank loan agreements outlined in Cotter (1998). This determination is based on an analysis of each firm's size and industry classification, and involves referring to the median expected leverage covenant found for similar firms.²⁰ For example, median leverage for small manufacturers is 60%, while for large retailers it is 70%. Robustness checks are made by replacing the median expected leverage with the highest and lowest expected leverage for each firm calculated in accordance with the upper and lower bounds of the normal range reported for similar firms,²¹ and by deleting firms already in default on leverage covenants. In accordance with the rules normally

specified in public and private debt contracts, reported leverage is measured as total liabilities divided by total tangible assets (before any revaluation).

3.2.3. Expectations about future increases in debt

Financial slack and the extent of growth opportunities available have been chosen as the determinants of future expectations in debt levels on the basis of theory and evidence presented in Whittred and Chan (1992) and Brown, Izan and Loh (1992). Financial slack is depicted by these authors as reserve borrowing capacity in the form of higher internal reserves of cash and is measured as cash and marketable securities relative to total assets. Growth opportunities are measured as the market value of equity to book value of equity.²² Both of these measures are calculated before any asset revaluation in that year. Firms with negative book value of equity, and therefore negative market to book equity, are truncated at zero. They are thereby assumed to have no growth opportunities.

3.2.4. Incentives to increase borrowing capacity

Following Cotter and Zimmer (1995), declining cash flows from operations are measured as the change in cash flows from operations between the year under consideration and the prior year, scaled by total assets. Cash flows from operations are determined directly from each firm's statement of cash flows. Increases in secured borrowings are captured by a dummy variable with a value of one if the firm increased secured borrowings between the year under consideration and the prior year, and zero otherwise.

4. Results

4.1. Descriptive statistics

Table 3 shows descriptive statistics for the dependent and independent variables over the full sample of 485 firm-years.²³ Positive skewness is evident for all of the distributions

other than ‘change in cash from operations’. Log transformations were successful in reducing the amount of skewness for these variables to less than two. Therefore, the results reported in table 4 use transformed variables, while robustness results using untransformed data are discussed in section 4.2.

insert table 3 about here

Revaluation increment amounts tend to be small on average due to no revaluation being booked for the majority of firm-years. Mean and median ‘leverage’ are 58.6% and 54.8% respectively, thus rendering average ‘proximity to leverage covenants’ high (96.8%).

4.2. Hypothesis tests and robustness checks

Table 4 shows results of Ordinary Least Squares (OLS) regressions using pooled data.²⁴ Statistical problems associated with multicollinearity have necessitated the exclusion of at least one independent variable from the regression. Three alternative regression models are shown. Model 1 includes all independent variables associated with hypothesis testing except for ‘the existence of leverage covenants’. Since ‘proximity to leverage covenants’ is calculated only for those firms for which these covenants are expected to exist, these two variables cannot be included in the same regression. Following Brown, Izan and Loh (1992), who encountered the same problem, the continuous variable is included rather than the dichotomous variable, since it provides more information. In addition, Pearson correlation coefficients between remaining independent variables indicate a very high level of multicollinearity between ‘leverage’ and ‘proximity to default on leverage covenants’ (98.8%). Therefore, Models 2 and 3 each exclude one of these independent variables. Model 2 includes both ‘leverage’ and ‘the existence of leverage covenants’, while model 3 includes only ‘proximity to default on leverage covenants’.

insert table 4 about here

The results shown in table 4 indicate that managers of Australian firms do not use upward asset revaluations to reduce debt contracting costs in the current institutional setting. While ‘proximity to leverage covenants’ is significantly associated with asset revaluations in model 1 when the undervaluation sub-sample is considered, this result appears to be unreliable due to multicollinearity between this variable and ‘leverage’. Neither of these variables is significant when considered separately in models 2 and 3. All of the models are insignificant for both the full sample of firms and the sub-sample of firms for which it can be established that an undervaluation exists.²⁵

Results of regressions on annual data tend to support those presented in table 4.^{26,27} Additional tests, using alternative measures of proximity to default on leverage covenants confirm that this variable is not significantly related to revaluation increments. When untransformed data is used, the results support those in table 4 for models 1 and 2. However, proximity to default on leverage covenants is significantly positively associated with revaluation increment amounts for model 3. Further tests, involving the inclusion of variables proxying for the expected costs of technical default, indicate that the decision to revalue is not associated with the extent of these costs.

To determine whether differences in research methods between the current study and prior research are sufficient to cause inconsistent results, additional testing which controls for differences in sample properties, as well as differences in research design and variable measurement, were undertaken.²⁸ The results indicate that differences in institutional setting, rather than research methods, are responsible for the observed change in the

relationship between asset revaluations and debt contracting. The regressions were rerun with the inclusion of the non-debt contracting variables found to be significant by Brown, Izan and Loh (1992). These include takeovers, bonus issues, firm size and the proportion of fixed assets held as property. All models remained insignificant, indicating that changes in the institutional setting have reduced these non-debt contracting benefits previously associated with asset revaluations.

To investigate the impact of increases in disclosure regulations for property assets, regressions were rerun on the sub-sample of revaluations of non-property assets. None of the independent variables were significantly related to the decision to revalue these assets, providing further support for the conclusion that, even in the absence of increased disclosure regulation, debt contracting variables no longer explain asset revaluations. Further tests, using the sub-sample of firms reporting a new valuation of land and building assets, indicate that the decision to recognise current valuations of land and buildings in the accounts, rather than disclosing them in footnotes, is not generally related to possible reductions in debt contracting costs.

In summary, the results of prior research do not replicate in the current institutional setting. The results appear to indicate that, in the current institutional setting, the costs of revaluing are greater than the reductions in debt contracting costs that can be expected to be achieved with an asset revaluation. Additional tests indicate that increased disclosure regulations for property assets do not appear to be the source of these differences.

4.3. Mini case studies

A series of mini case studies was used to gain additional insights into the revaluation decision in the 1990s. Five revaluing and five disclosing firms were selected for analysis.

These firms were chosen on the basis that they appeared to have debt contracting-related incentives to revalue.²⁹ Telephone interviews were conducted with the Chief Financial Officers (CFOs) of those firms. Questions asked related to incentives to revalue, with a particular emphasis on debt contracting related incentives, and the choice of valuer type. Appendix A provides a summary of the interview process.

4.3.1 Summary of mini case studies - disclosers

CFOs of the five firms choosing to disclose rather than recognise revaluations generally indicated that they did so because it is more costly to recognise than to disclose, and that there are either minimal or no additional benefits associated with revaluing. Indeed, a perceived benefit of disclosing rather than recognising is a more conservative, and therefore more credible, balance sheet. Interestingly, four of the five CFOs interviewed stated that it was not necessary to book undervaluations for debt contracting purposes. Bankers use disclosures for covenant monitoring and loan evaluation purposes. Three of the five firms chose to voluntarily disclose either annual valuations of land and buildings, or current values of plant and equipment, in addition to disclosures required by the Corporations Law. It is likely that these additional disclosures are related to contracting with lenders.

The incremental costs of revaluing identified by the CFOs include the income decreasing impact of increased depreciation on profits (three firms), negative signals associated with possible future writedowns (two firms), increased directors' liability (two firms), and costs associated with AASB 1010 requirements to revalue entire classes of assets (two firms). Four of the five disclosing firms report directors' rather than independent valuations; with these tending to be based on independent valuations obtained over the previous three years. It appears that these firms are reluctant to recognise a directors'

valuation in the balance sheet, possibly due to higher potential shareholder litigation costs.³⁰ It is expected that director liability could more easily be established in the case of voluntarily recognised revaluations than for disclosures required by the Corporations Law; thus making disclosure the least costly alternative. The cost of obtaining new independent valuations for all property assets across the economic entity is not justified by the incremental benefits perceived, especially when lenders are prepared to use disclosures of current values for contracting purposes.

4.3.2 Summary of mini case studies - revaluers

Interviews with CFOs choosing to recognise revaluations of land and buildings in the balance sheet reveal that they tend to do so in accordance with a policy of three yearly revaluations. Interestingly, one CFO indicated that this policy was established many years ago when trust deeds provided an incentive to revalue. Another revaluing firm still has public debt on issue. Independent valuers seem to be the preferred choice when recognising a revaluation in the accounts, due to decreased directors' liability. However, directors' valuations are relied upon in situations where independent valuations are relatively more costly to obtain.

CFOs of all revaluing firms indicated that debt contracts are no longer a major consideration in relation to the revaluation of non-current assets, due to either a more flexible relationship with bankers, or equity investors being the major consideration in deciding accounting policies. While the revaluing firms chosen for case studies have high leverage, so do the disclosing firms. It is unknown whether footnote disclosures would have been taken into consideration by bankers of revaluing firms for covenant monitoring purposes, had these been used instead of recognised revaluations. In addition, the

immaterial effects of many of these revaluations on leverage support firm's contentions that debt contracting costs are not driving the asset revaluation decision.

Overall, discussions with CFOs indicate that, in the current setting, disclosures are viewed as a lower cost alternative to recognised revaluations for many firms, and that it is unlikely that it is still cost effective to revalue rather than disclose from a debt contracting perspective. That is, the expected benefits of recognising revaluation increments are minimal. This conclusion supports the results of hypothesis testing.

5. Conclusions

This paper re-examines the relationship between asset revaluations and debt contracting in the current institutional setting. The results indicate that asset revaluations are less frequent, and are no longer related to incentives to increase borrowing capacity, or the probability of default on debt covenants. The single institutional difference most likely to explain these differences in results is a shift in emphasis from public to private debt. The dramatic decrease in the use of public debt by Australian firms, in conjunction with the closer relationship between firms and their bankers, have reduced the benefits of revaluing non-current assets in the accounts. Footnote disclosures, a less costly alternative to recognition of revaluations, evidently have as much potential as recognised asset revaluations to reduce debt contracting costs in the current institutional setting. This is borne out in discussions with CFOs of both revaluing and non-revaluing firms. Other institutional differences impacting on the relationship between the propensity to revalue assets and debt contracting variables include lower inflation and legislative changes requiring firms to obtain current valuations of property at least every three years. It is evident that, when investigating the relationship between firms' contracts and their

accounting policy choices, it is necessary to consider of the way that contracts are negotiated and monitored, and the way these contracts change through time.

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Appendix A

Each telephone interview commenced with a brief overview of the research topic. Respondents were informed that the objective of the case studies was to gain a better understanding of the decision whether to recognise revaluations of land and buildings in the balance sheet. Questions were then asked in relation to the decision to recognise or disclose a particular revaluation reported in financial statements over the 1993 to 1995 time period.

Revaluers were asked:

1. Why did you revalue land and buildings in the balance sheet rather than disclosing current values as a footnote?
2. Did you consider potential reductions in debt contracting costs when making your decision?
3. Why did you use independent valuers (directors') rather than directors' (independent valuers) to perform the valuation?

Disclosers were asked:

1. Why did you disclose the new valuation of land and buildings as a footnote rather than recognising it in the balance sheet?
2. Did you consider potential reductions in debt contracting costs when making your decision?
3. Do your bankers restrict or deter you from recognising asset revaluations in the balance sheet?

Notes were made during the course of each interview. A summary of responses for each firm was then compiled and faxed to the CFO concerned for verification.

Table 1
Number of public debt issues outstanding (number of firms with public debt issues outstanding)
As quoted in the Stock Exchange Journal from 1985 to 1995 as at December of each year

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Convertible notes	52 (50)	50 (49)	86 (81)	79 (72)	71 (65)	55 (49)	45 (43)	39 (36)	39 (37)	36 (36)	38 (37)
Debentures	251 (50)	256 (47)	204 (39)	190 (36)	140 (31)	94 (23)	60 (17)	36 (16)	9 (5)	13 (5)	4 (3)
Unsecured notes	8 (3)	6 (2)	6 (2)	8 (3)	11 (4)	5 (1)	5 (1)	- -	- -	- -	- -
Total public debt issues (excl. pref. shares)	311 (103)	312 (98)	296 (122)	277 (111)	222 (100)	154 (73)	110 (61)	75 (52)	48 (42)	49 (41)	42 (40)
Convertible Pref. Shares	10 (10)	10 (10)	15 (15)	19 (19)	17 (17)	17 (16)	14 (13)	11 (10)	8 (8)	7 (7)	8 (8)
Converting Pref. Shares	- -	- -	- -	- -	- -	- -	- -	4 (4)	11 (11)	11 (11)	12 (12)
Total public debt issues (incl. pref. shares)	321 (113)	322 (108)	311 (137)	296 (130)	239 (117)	171 (89)	124 (74)	90 (66)	67 (61)	67 (59)	62 (60)

Table 2

Summary statistics on the magnitude and materiality of recognised revaluations and disclosed undervaluations

	<i>Mean</i>	<i>Median</i>	<i>Minimum</i>	<i>Maximum</i>
PANEL A – All revaluations (N = 68)				
Amount of Revaluation (\$'000)	7 943	1 010	7	214 200
Revaluation as a % of total assets	4.7	1.0	0.0	56.3
Revaluation as a % of non-current assets	8.3	2.1	0.0	86.5
Materiality - % impact on leverage (TL/TTA)	7.0	1.1	0.0	129.8
PANEL B – Revaluations of land and buildings (N = 50)				
Amount of Revaluation (\$'000)	3 157	591	7	28 700
Revaluation as a % of total assets	2.6	0.8	0.0	35.7
Revaluation as a % of non-current assets	5.2	1.6	0.0	86.5
Materiality - % impact on leverage (TL/TTA)	3.4	0.9	0.0	55.6
PANEL C – Disclosures of undervaluations of land and buildings (N = 48)				
Amount of Undervaluation (\$'000)	12 290	2 255	19	183 000
Undervaluation as a % of total assets	3.9	2.3	0.1	20.7
Undervaluation as a % of non-current assets	8.8	4.1	0.1	52.9
Materiality - potential % impact on leverage (TL/TTA)	4.5	2.4	0.1	26.5

Table 3

Descriptive statistics for dependent and independent variables for full sample of 485 firm-years.

PANEL A: Continuous variables					
<i>Variable</i>	<i>N</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>Skewness</i>	<i>Median</i>
Revaluation increment amount	485	0.007	0.041	9.714	0.000
Proximity to leverage covenant	420	0.968	0.713	7.700	0.876
Cash reserves	485	0.087	0.129	3.312	0.041
Growth opportunities	462	1.679	1.812	7.755	1.358
Change in cash from operations	394	0.002	0.097	-0.564	0.003
Leverage	485	0.586	0.434	6.729	0.548

PANEL B: Dichotomous variables			
<i>Variable</i>	<i>Yes</i>	<i>No</i>	<i>Total</i>
Existence of leverage covenant	422	63	485
Increase in secured borrowings	144	256	400

Revaluation increment amount = amount of any revaluation increment/total assets.

Proximity to leverage covenant = [TL/TTA (before any revaluation)]/median expected leverage covenant

Cash reserves = cash and marketable securities/total assets

Growth opportunities = market to book equity

Change in cash from operations = change in cash flows from operations since prior year, scaled by total assets

Leverage = total liabilities to total tangible assets (TL/TTA)

Existence of leverage covenant = whether firm has bank or public debt outstanding

Inc. in secured borrowings = whether firm increased secured borrowings during year

Table 4

OLS Regression results using the sub-sample of firm-years for which it can be established that an undervaluation of non-current assets exists (146 firm-years), and full sample (485 firm-years). The dependent variable is measured as the revaluation increment amount scaled by total assets.

<i>Explanatory variable</i>	<i>Pred sign</i>	<i>Firms for which it can be established that an undervaluation exists.</i>			<i>Full sample.</i>		
		<i>Coefficient (t-statistic)</i>			<i>Coefficient (t-statistic)</i>		
		<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>
Constant	?	-0.013 (-0.441)	0.032 (1.369)*	0.011 (0.419)	0.013 (0.173)	0.009 (1.468)*	0.006 (0.997)
Existence of lev. covenant	+		-0.007 (-0.460)			-0.000 (-0.180)	
Proximity to lev. covenant	+	0.386 (1.804)**		0.040 (1.268)	0.067 (1.144)		0.003 (0.461)
Cash reserves	-	-0.036 (-0.533)	-0.054 (-0.922)	-0.050 (-0.746)	-0.004 (-0.237)	-0.011 (-0.743)	-0.008 (-0.507)
Growth opportunities	+	-0.010 (-0.639)	-0.013 (-0.899)	-0.019 (-1.249)	-0.002 (-0.661)	-0.002 (-0.692)	-0.003 (-0.804)
Change in cash from ops.	-	0.007 (0.148)	0.009 (0.206)	0.006 (0.123)	-0.000 (-0.014)	0.003 (0.225)	-0.000 (-0.029)
Leverage	+	-0.452 (-1.634)*	0.012 (0.342)		-0.081 (-1.096)	-0.000 (-0.076)	
Inc. in secured borrowings	+	-0.007 (-0.801)	-0.007 (-0.816)	-0.008 (-0.802)	-0.002 (-0.656)	-0.002 (-0.591)	-0.002 (-0.586)
Adj R ²		.013	-.029	-.004	-.009	-.011	-.010
F-stat (two-tailed)		1.225	0.443	0.921	0.489	0.287	0.347

* Significant at 10%, one-tailed; ** significant at 5%, one-tailed

Existence of leverage covenant = whether firm has bank or public debt outstanding

Proximity to leverage covenant = [TL/TTA (before any revaluation)]/median expected leverage covenant

Cash reserves = cash and marketable securities/total assets

Growth opportunities = market to book equity

Change in cash from operations = Change in cash flows from operations since prior year, scaled by total assets

Leverage = Total liabilities to total tangible assets (TL/TTA)

Inc. in secured borrowings = whether firm increased secured borrowings during year

¹ Prior research has also found that revaluations are associated with takeover bids, bonus issues of shares, firm size and the proportion of assets comprising property (see Brown, Izan and Loh, 1992; McMillan, 1990).

² Evidence of the decline in public debt is contained in table 1 and discussed in section 2.2. Cotter (1998) finds that bank loans account for between 50.8 and 62.2 percent of total borrowings outstanding for a sample of Australian industrial firms.

³ Revaluations are defined to include only upward revaluations of non-current assets; writedowns are not considered.

⁴ The introduction of this approved accounting standard had the potential to raise the level of compliance in relation to accounting for asset revaluations, however the decision to revalue and the choice of valuer type remains voluntary.

⁵ This requirement is now embodied in AASB 1034 “Information to be disclosed in financial reports”, Sections 6.1 (h) and 6.2, which applies for financial periods ending on or after 30 June 1997.

⁶ These amendments also included a strengthening of the application of the ‘recoverable amount test’. While the main impact of this test relates to writedowns of overvalued assets, it places an upper limit on the amount of upward revaluations of non-current assets

⁷ An exception to this rule now exists in relation to asset classes comprising property, plant and equipment. These assets may now be revalued progressively, providing that such revaluations are conducted in a systematic manner and that all assets within that class are revalued on a consistent basis within a three-year period (AASB 1010 para. 4.1(a)). This regulation was not in effect during the sample period as it was part of amendments to the standard effective 30 June 1996. No amendments were made to AASB 1010 during the sample period of 1993 to 1995.

⁸ The effect of this amendment is not expected to have been as great in relation to property assets as for other non-current assets, since disclosures of current valuations of land and buildings are required at least every three years under Corporations Law. However it is expected that the incidence of revaluations of other classes of non-current assets have been reduced by these amendments.

⁹ While this research reports a structural change in the Australian debt market, the reasons underlying this change remain unexplained and are worthy of further investigation.

¹⁰ For example, Triantis and Daniels (1995) explain how a bank’s legal duty of confidentiality in the US allows borrowers to reveal confidential information to banks. Similarly, in Australia the banker’s duty of

secrecy forms part of the banker-customer contract. The leading case is *Tournier v National Provincial & Union Bank of England* [1924].

¹¹ Interviews conducted with senior corporate bankers indicate that they continually assess the credibility of financial statements to determine the amount of reliance to be placed on the reports of each borrowing firm. For example, a previous revaluation that was considered to be an overvaluation may indicate that book values are unreliable for that particular firm.

¹² A perusal of two boilerplate negative pledge documents showed that these contracts make little explicit reference to asset revaluations. One of them stated that all revaluations after a certain date would be eliminated, while the other stated that all disclosures of independent valuations above book value would be included in the definition of total tangible assets. Interestingly, an analysis of twenty-three actual bank loan contracts revealed that the majority of these contain no explicit restrictions on asset revaluations.

¹³ The Investment Performance Index (Capital Return Index for Australian Composite Property) produced by the Property Council of Australia shows a 31.4% decline over the June 1990 to June 1995 period, compared with a 83.6% increase between June 1985 and June 1990.

¹⁴ Brown, Izan and Loh's 1974-7 and 1984-6 samples have an incidence of 3.2% and 10.7% of takeover bids respectively, while only 0.4% of the current sample (two firms) received takeover bids during the 1993-5 sample period. Likewise, Brown, Izan and Loh report review year bonus issues for 17% and 21.9% of their samples. The current sample has bonus issues in only 7.2% of firm-years. Bonus issues became less of an impetus for asset revaluations after 1987 due to the loss of associated tax advantages.

¹⁵ In order for revaluations to reduce debt contracting costs, they must be large enough to avoid default or increase borrowing capacity.

¹⁶ Mineral producers are excluded from the analysis since prior research (see Easton, Eddey and Harris, 1993) has found that mining firms do not typically revalue assets due to their non-current assets (for example, interests in joint ventures, mineral and petroleum reserves) being generally unsuitable for revaluation.

¹⁷ These financial statements were obtained either from the Connect 4 Annual Report Collection: Company Annual Reports on CD-ROM, or directly from the firms.

¹⁸ Corporations Law requirements to disclose current values of land and buildings every three years came into effect in October 1986, thus making 1989, 1992 and 1995 the years most likely to contain revaluations of property.

¹⁹ Consistent with prior research (McMillan, 1990; Whittred and Chan, 1992), property assets tend to be revalued by independent valuers, while other types of non-current assets tend to be revalued by directors.

²⁰ Firm size is determined via a joint assessment of operating revenues and size rankings based on market capitalisation. This measure is in accordance with the definitions of firm size used by the bankers interviewed. Industry classifications are in accordance with those published by the Australian Stock Exchange.

²¹ For example, the normal range reported in Cotter (1998) for small manufacturers is 50 to 75%.

²² The market-to-book equity measure is a noisy proxy for growth opportunities, and it is unclear exactly what this measure is capturing. It is a function of accounting policies chosen, types of assets held, as well as current and lagged changes in market value (Beaver and Ryan, 1993).

²³ Sample sizes of less than 485 are due to missing data for some firms in some years.

²⁴ There is a possible independence problem associated with the use of pooled data, since the current institutional setting induces a three-year cycle of revaluations of land and buildings. Therefore, additional tests using annual data are conducted. Further, tests of the disclose versus recognition choice documented in section 4.2 are not subject to this problem, since only the sub-sample of firms reporting a new valuation of land and buildings are considered.

²⁵ Results in regard to public debt contracts indicate that, out of the 15 sample firm years for which public debt contracts exist, an upward asset revaluation was only undertaken in one of these years. This limited sample precludes tests of differences between revaluers and non-revaluers in terms of proximity to default on leverage covenants contained in public debt contracts.

²⁶ The results of tests on annual data should be interpreted cautiously due to smaller sample sizes than tests on pooled data. Interestingly, a significant positive relationship between revaluation increments and increases in secured borrowings exists in 1994.

²⁷ Univariate results indicate that the decision to revalue is positively associated with proximity to default on leverage covenants in 1993. However this variable is not significant for 1994 or 1995.

²⁸ For example, an alternative research design in which revaluers reappearing as non-revaluers are deleted from the sample was considered (Whittred and Chan, 1992). In addition, the dependent variable was respecified as a dichotomous variable as was the case in earlier research, while unrefined debt contracting measures were employed.

²⁹ Only those firms with proximity to default on leverage covenants of over 85 percent were considered; with the final sample having at least one other indicator of potential debt related benefits from revaluing.

Revaluers of land and buildings are chosen over revaluers of other types of non-current assets to increase comparability with disclosing firms.

³⁰ While this particular issue has not been the subject of litigation to date, the case of Cambridge Credit Corporation Ltd. shows that directors and auditors can be held responsible for misleading information contained in financial statements. In particular, misleading information related to asset revaluations was critical in allowing Cambridge Credit to raise more debenture finance, since higher reported asset values increased the level of borrowings allowable under trust deed covenants. For a detailed discussion of the Cambridge Credit case see Clarke et al (1997, 1998).