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Accounting and non-accounting based information in the market for debt: Evidence from Australian private debt contracts

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Abstract

This paper examines accounting and non-accounting based restrictive covenants in Australian *private* debt agreements. With respect to the former, our findings differ from previous research on *public* debt. We find more varied definitions of constraints and their specified tightness in private debt contracts than in public debt contracts. Further, limits on interest cover are found to be continuing constraints and not 'once-off' limits. The paper reports frequent use of more specific or 'tailored' accounting based constraints and the frequent inclusion of off-balance sheet numbers in the measurement rules specified.

The paper also provides the first Australian evidence on the use of non-accounting based constraints. These are pervasive and cover a wide range of corporate activity. While largely consistent with previous research the paper also reports evidence of restrictions previously argued to be sub-optimal and hence, unlikely to be observed. Specifically, there are frequent restrictions on firms' production and investment policies.

Key words: Private debt agreements; Covenants

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1. Introduction and background

In this paper we investigate the accounting based contractual provisions in

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private debt (bank) agreements in Australia and offer some comparisons with previous findings with respect to public debt contracts, principally as documented in Whittred and Zimmer (1986a). We also document the use of non-accounting based restrictions in the contracts examined. This paper differs from two contemporary papers investigating private debt arrangements in Australia in the following ways. Mather (1997) compiles descriptions of accounting based covenants in private debt agreements through a survey of, and interviews with, bank lending officers while the present paper investigates actual private debt agreements. While Cotter (1998) examines extracts from private debt agreements to confirm the findings from her survey of bank lending officers, her investigation is limited to the use of accounting based covenants. We extend our investigation to the use of non-accounting based restrictive covenants.

The accounting policy choice literature, based in agency and contracting cost theory, relies on a knowledge of how accounting numbers are used in the contractual arrangements of firms (Watts and Zimmerman, 1986 and 1990; Watts, 1995). These arrangements and the specification of accounting numbers therein can differ across institutional and industrial settings. In Australia, (published) evidence of this type is limited to the findings of Whittred and Zimmer (1986a) and Stokes and Tay (1988). Both document the use of accounting numbers in Australian *public* debt contracts for varying time periods between 1972 and 1985, and their results are largely consistent. There is no previously published information on the use of accounting numbers in *private* debt contracts of Australian companies although private, and in particular bank, debt now represents the major source of company financing (Cotter, 1998; Foster and Stewart, 1991).

Prior research has predicted private debt contracts to be more restrictive than public contracts since the latter are assumed to have higher re-negotiation costs (Leftwich, 1983; Holthausen and Leftwich, 1983). Private debt instruments may also contain accounting rules tailored to specific conditions and needs of the lender or borrower. Leftwich (1983) documents that private debt contracts in the U.S. frequently deviate from generally accepted accounting principles (GAAP), and exhibit a preference for tailored accounting numbers, in determining compliance with contractual restrictions.[1]

Previous research also predicts variation in the use of non-accounting based

[1] El-Gazzar and Pastena (1990) on the other hand, show that syndicated bank loans are associated with a lower incentive to tailor because of higher re-negotiation costs relative to agreements with insurance lenders. They point out that Leftwich (1983) is hindered by lack of information about the frequencies of tailorings suggested in the boiler plates he studied. El-Gazzar and Pastena (1990) analyze actual U.S. debt contracts, while Leftwich (1983) relies on a lawyer's guide, *Commentaries on Indentures*.

contractual restrictions to control incentive conflicts between contracting parties. For example, Smith and Warner (1979) argue that contractual restrictions on firms' production/investment policy would be expensive to monitor relative to benefits. They also argue that restrictions on dividend and financing policy are cheaper to monitor and effectively act as efficient restrictions on production/investment policy. Thus, dividend and financing constraints are more likely to be observed than restrictions on production/investment activities. We are unaware of Australian evidence on the use of non-accounting based restrictions in either public or private debt.

With respect to accounting based constraints, our findings are consistent with previous research on *public* debt contracts—in so much as limits on total (but not secured) debt and interest cover are the most common types of restriction.[2] However, we find that these are more varied both in terms of the definitions and tightness specified in the constraints. Cotter (1998) also reports such variation in her evidence on *private* debt. Also consistent with Cotter (1998), but in contrast to Whittred and Zimmer (1986a), we find that limits on interest cover are continuing constraints rather than being applicable only at the time of borrowing. Further, we observe frequent use of more specific accounting based constraints[3] and the frequent inclusion of off-balance sheet numbers in the measurement rules specified.[4]

The use of non-accounting based constraints appears to be pervasive and covers a wide range of corporate activity—financing, bonding, and reporting. While much of this evidence is consistent with previous research (Smith and Warner, 1979; Leftwich, 1983) we also observe restrictions previously argued to be sub-optimal in limiting managerial discretion (Smith and Warner, 1979). Specifically, we find frequent restrictions on firms' production and investment policies. Although our evidence is drawn from a small sample and can only be generalised with caution, it suggests that parties negotiating private debt contracts frequently supplement (rather than replace) previously observed solutions with others, including solutions previously argued to be relatively sub-optimal.

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[2] Cotter (1998) finds frequent use of the current ratio in her survey of bank managers (particularly for industrial firms) but not in her examination of actual contracts to confirm her survey findings. Use of the current ratio is relatively uncommon in our sample of debt contracts.

[3] The most frequently used 'more specific' accounting based constraint in our sample is a net worth requirement. Cotter (1998) reports the frequent use of a net worth covenant in her actual contracts sample, but not in her survey.

[4] While our results are generally consistent with those of Mather (1997), we differ with respect to the recognition of off-balance sheet numbers in the measurement rules specified for restrictive covenants. In his survey of bank loan officers, Mather finds that off-balance sheet numbers are seldom used.

The remainder of the paper proceeds as follows. Section 2 details the source of our data, descriptive information on a our sample and our method of analysis. We report our findings with respect to private debt contracts, as well as, comparisons with public debt contracts in Section 3. Section 4 contains our concluding comments.

2. Data and method

2.1. Sample

Private debt contracts are not readily available to researchers in Australia. In contrast to the U.S., this country does not have any statutory requirements for firms to publicly register private borrowing agreements governing material loans.[5] Thus, our sample is necessarily limited to a small number of contracts that we are able to obtain from large legal firms in Melbourne and Sydney.[6] In all 16 cases, in the interest of protecting client confidentiality, we have access to only those parts of the debt contracts which contain (a) covenants based on accounting numbers or constructs and (b) other restrictive covenants. As per our request to the providers of these data, we assume that the data provided to us are comprehensive with respect to these attributes and representative of private lending instruments in the industries covered in the sample.[7] Nevertheless, restricted access is a potential limitation of this study and suggests caution in the interpretation of our results.

While the identities of the lenders and borrowers are not available to us, we are able to identify the industrial classification and loan type for a majority of the contracts and, the facility size ($ amounts) for some. These attributes are summarised in Table 1. Our sample covers a wide range of industry sectors and includes relatively small ($4.9 million) to relatively large ($1.31 billion)

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[5] While registrable charges are required to be registered at the Australian Securities Commission (ASC), the information so registered is limited and insufficient for the scope of this paper. Section 263 of the Corporations Law requires companies creating a charge to lodge certain details with the ASC within 45 days of creating the charge. These include the name of the company, the date of the creation of the charge, whether it is a fixed or floating charge, and a short description of the liability secured by the charge. However, the loan agreements themselves are not available from the ASC.

[6] Leftwich (1983) was limited to ten private debt agreements to verify that the publicly available *Commentaries* he was relying on were descriptive of U.S. private debt contracts. Australia does not have a resource similar to *Commentaries*.

[7] Given that the legal firms were only willing to entertain restricted access to a small number of contracts, we requested that they provide us with contracts they considered to be broadly representative of private lending in the industry sectors they provided data on.

Table 1
Industry distribution, facility size and type for the sample of 16 private debt contracts

Industry	Contract number	Year	Facility Size ($)	Facility Type	Syndicated
Brewing	1	1989	1.31b	Loan	Yes
	2	1994	250m	Loan	No
Computer Software	3	1990	9m	Loan	No
Food Manufacture and distribution	4	1990	n.a.	Credit facility	Yes
Gas Production	5	1982	US96m + A35m	Debentures	Yes
Grocery chain	6	n.a.	n.a.	Credit facility	Yes
Industrial	7	1992	n.a.	Overdraft/credit facility	No
Newsprint manufacture	8	1993	185m	Loan	Yes
Oil pipeline	9	1985	17.5m	Loan	Yes
Publishing	10	1992	310m	Loan	No
Television station	11	1993	n.a.	Credit facility	Yes
Transport	12	1988	25m	Loan	No
Unknown	13	1993	57m	Bill acceptance and operating	No
	14	1993	4.9m	Loan	n.a.
Boiler plate	15	n.a.	n.a.	Boiler plate	n.a.
Boiler plate	16	n.a.	n.a.	Boiler plate	n.a.

n.a. not available.
Boiler plate law firm standard form contract.

borrowings during the period 1982 to 1994, with the majority sourced from the late 1980s and early 1990s. Eight agreements represent straight debt (loans), four are credit line arrangements, one is a debenture, one a bill acceptance facility, and two are law firm standard form contracts[8] ('boiler plates'). Seven of the 16 agreements are syndicated arrangements.

2.2. Method

We examine each debt contract in detail to identify the following characteristics: facility type and amount, security type, and the presence, as well as, type of accounting-based and/or other restrictive covenants. In order to facilitate comparisons, we devise a classification scheme within each of these categories based as far as possible on prior research (Smith and Warner, 1979;

[8] We interpret the terms 'standard contract' and 'boiler plate' cautiously since these do not necessarily represent standard form contracts in a general sense. They are standard contracts of the particular law firms supplying them and should not be generalised beyond that.

Whittred and Zimmer, 1986a). Where necessary, we cater for less common or previously undocumented features. For example, under accounting-based restrictions we allow for the types of restrictions reported as common in previous research (total debt, interest cover), as well as, for less common restrictions such as limits on non-core assets.

3. Results

The classification scheme we use is reported in Table 2. All the restrictions described in Table 2 feature in one or more of the contracts studied.

We find a wider variety of accounting based restrictions than those described in studies based on public debt contracts (Whittred and Zimmer, 1986a; Stokes and Tay, 1988). While we observe previously reported restrictions such as limits on total debt, secured debt, interest cover and current ratio, we also find more specific covenants. The latter include the maintenance of a minimum (dollar) level of net worth, limitations on the amount of tangible assets or earnings contributed by 'excluded' companies or non-core assets, minimum contributions to joint venture costs or maximum expenditures on exploration.

The contracts also contain a wide variety of non-accounting based covenants. These include restrictions on production/investment decisions, financing and dividend policy, modification of payoffs to debtholders, specific bonding activities (e.g., provision of financial and other reports, specification of accounting method, purchase of insurance), control and ownership, group structure and transactions. Table 2 provides further details of restrictions under each of these broad classes.

Table 3 reports on the frequency[9] with which each type of security and accounting or non-accounting based restriction is observed (by contract and broad classification). We next discuss these frequencies and the nature of contractual arrangements within each category.

3.1. Security type

We are able to ascertain security type in 14 of the 16 contracts in the sample. All specify some form of security clause, either in the form of a cross-guarantee, fixed or floating charge or a mortgage, the last two being the most common. Cross-guarantees are only confirmed in nine of the 16 contracts. While we cannot confirm that all contracts in our sample involve company group structures, note the absence of cross-guarantees in the cases of contracts

[9] In interpreting the frequencies note that these contracts are assumed to be 'representative' of the particular industry, with the proviso of the cautions suggested earlier.

Table 2
Classification scheme used to categorise restrictive debt covenants

Security type:
A. Cross-guarantees
B. Fixed and floating charge
C. Mortgage
   a. Assignment/mortgage of life insurance policies
D. Other security related undertakings:
   b. joint and several liability of guaranteeing parties
   c. lien, pledge, hypothecation, title retention arrangement.

Accounting based restrictions:
A. Total Debt
B. Secured Debt
C. Interest Cover
D. Current Ratio
E. Other accounting-based restrictions:
   i. Net worth to exceed $x
   ii. Tangible assets of 'excluded' companies ⩽ 5% of TTA
   iii. EBIT of 'excluded' companies ⩽ 5% EBIT
   iv. Non-core business ⩽ x% assets
   v. Dividends ⩽ x% NPAT
   vi. Contribution of a minimum amount for construction costs (of joint venture)
   vii. Book value of mortgaged vehicles > principal amount of debt
   viii. Gross assets of immaterial subsidiaries ⩽ x% of gross group assets
   ix. Limit on exploration expenditure
   x. Operating cash flows/Total finance charges
   xi. Aggregate book value of fixed assets owned, purchased or otherwise acquired not to exceed $x.

Non-accounting based restrictions:
A. Restrictions on the firm's production/investment policy
   1. on investments
      i. assets purchases, except in ordinary course of business
      ii. new acquisitions
      iii. change in nature of business
   2. disposition of assets
      i. asset sales
      ii. sale and leasebacks
   3. debt will be secured
   4. mergers/takeovers
   5. maintenance of assets
   6. maintain and preserve intellectual property e.g., copyrights, patents, trademarks, trade names, trade secrets
   7. preserve and renew material contracts, franchises, licences

B. Restrictions on payment of dividends and other distributions
   1. dividend distributions
   2. other distributions e.g., payment of interest, management fees
   3. capital reduction and share buybacks

(*continued*)

Table 2
Continued

C. Restrictions on subsequent financing policy
   1. additional debt and higher priority debt e.g., negative pledge
   2. rentals, lease, sale-leasebacks
   3. first right of refusal for future financing
   4. resolutions to limit the capacity of uncalled capital to be called up
   5. aggregate exposure to any one party

D. Modifying payoffs to debtholders
   1. sinking funds
   2. convertibility provisions
   3. redemption of convertible debt
   4. callability provisions

E. Specifying bonding activities by the firm
   1. required reports
   2. specification of accounting techniques
   3. officer's certificate of compliance
   4. required purchase of insurance
   5. arrange interest and exchange rate hedges to limit exposures
   6. no foreign exchange etc. trading that is speculative in nature
   7. comply with environmental laws and ensure an adequate environmental programme
   8. proceeds from disposal of assets/restructuring applied first against secured debt
   9. application of loan drawing for specified purposes
   10. notification of interstate movement of secured assets
   11. only arms-length dealings with related parties

F. Restrictions on control and ownership
   1. changes in ownership and control
   2. subsequent equity issues
   3. composition of board of directors

G. Group structure and transactions
   1. formation of subsidiaries
   2. no joint ventures
   3. intra group dealings disallowed except for arms length transactions in the ordinary course of business. Auditor/independent expert verification of consideration where this is in the form of cash or assets
   4. intra group loans
   5. distributions to subsidiaries
   6. all subsidiaries to remain wholly owned

Table 3
Type of security, accounting based and other restrictive covenants

		Panel A Security type				Panel B Accounting-based restrictions					Panel C Non-accounting based restrictions (frequencies)							
Contract no.	Syndicated	cross-guarantees	fixed and floating charge	mortgage	other	total debt	secured debt	interest cover	current ratio	other	production and investment	dividends	financing	payoffs	bonding	control and ownership	group structure and activity	Total (Max = 38)
1	yes	✓	✓			✓					7/10	2/3	3/5		6/11	2/3	2/6	22
2	no	✓				✓	✓	✓		i, viii	4/10		2/5		3/11	2/3		11
3	no	✓	✓			✓	✓	✓	✓		6/10		2/5		4/11	1/3	1/6	14
4	yes	✓				✓	✓	✓		i, iv			1/5		3/11	1/3		6
5	yes		✓			✓				ix	5/10	1/3			6/11		2/6	14
6	yes	✓			✓	✓	✓	✓		i, ii iii, iv	4/10		2/5		5/11			11
7	no					✓		✓		i, v, xi	1/10	1/3	1/5		1/11			4
8	yes	✓	✓	✓		✓		✓		i	5/10	1/3	3/5		5/11	2/3		16
9	yes		✓							vi	2/10	1/3			4/11			7
10	no	✓	✓			✓		✓	✓	x	4/10	1/3	3/5		4/11	2/3	1/6	15
11	yes	✓				✓		✓		i	4/10		3/5	1/4	5/11		1/6	14
12	no	✓	✓	✓	a, b		✓	✓		vii	2/10		3/5		3/11	1/3	1/6	10
13	no		✓	✓	b	✓		✓		v	3/10	1/3	2/5		4/11	1/3	1/6	12
14	n.a.			✓			✓				3/10		2/5		4/11			9
15	n.a.				b						7/10		2/5		4/11	2/3		15
16	n.a.		✓	✓	c						1/10	1/3			2/11	3/3		7

n.a. not available
a–c as defined in Table 2 under Security Type
i–ix as defined in Table 2 under Accounting-Based Restrictions.

numbered 5 and 13 which nevertheless have restrictions on group structure and activity. Note also that all contracts require the provision of consolidated accounts, indicating that they do involve company group structures. Thus, it appears that cross-guarantees, while common, are not universally observed in group situations.[10,11]

Other types of security related clauses observed include the assignment of life insurance policies and the specification of joint and several liability. These, while less frequent, are not uncommon.

3.2. Accounting-based contractual restrictions

Table 3 indicates that the two most common accounting based restrictions are limits on total debt and interest cover. This is consistent with previous research on public debt agreements (Whittred and Zimmer, 1986a; Stokes and Tay, 1988). However, restrictions on secured debt do not appear to be as common as previously reported; we only observe them in six (38 per cent) of our contracts while Whittred and Zimmer report these to be present almost without exception in the public debt contracts they survey. We also observe additional and more specific covenants, the most frequent being a requirement to maintain a minimum level of net worth specified in dollars rather than as a ratio. This requirement, shown as 'other- i'[12] in Table 3, is observed in six contracts and is as frequent as the limitation on secured debt. The remaining accounting-based restrictions of a more specific nature are less pervasive and appear to be tailored to particular situations. Two contracts in particular, restrict dividends to less than or equal to net profit after tax (60 and 100 per cent, respectively). The need for the latter limit (100 per cent of profits) is particularly surprising to the extent that it tracks the requirements in the

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[10] A separate examination of the 1997 annual reports of a sample of 153 firms drawn from the largest 300 firms listed on the Australian Stock Exchange revealed that 140 have controlled entities. Of the total number of controlled entities (7,235) 90% are wholly-owned controlled entities. Forty-two per cent of the companies with controlled entities had cross-guarantees in place (Ramsay, 1998).

[11] This is relevant to the predictions in Whittred (1987). Whittred argues that the demand for consolidated reports is partially derived from the existence of cross-guarantees in company groups. He conservatively assumes that the presence of wholly-owned subsidiaries correlates with cross-guarantees (and hence, the production of consolidated reports). Since we do not know the identity of the contracting parties in our sample, we are unable to confirm whether Whittred's assumption is descriptive. However, we are able to point to the importance of his making a conservative assumption.

[12] As per the classification scheme in Table 2.

Table 4
Details of accounting-based constraints in debt agreements, their specified tightness and, definition of accounting constructs employed therein.

Accounting-based restrictions	Frequency	Industry (contract no.)	Ratio/construct	Tightness	Definition
Total debt	11	Brewing (1)	Financial indebtedness/SHF	Deleted*	Financial Indebtedness means any indebtedness, present or future, actual or contingent in respect of moneys borrowed or raised, … in connection with interest, gold or currency exchange or hedge … obligations under redeemable stock, leases and commodities. Leases defined to be those that would be capitalised under GAAP.
		Brewing (2)	Financial indebtedness or gearing	Deleted*	Financial indebtedness as above. Gearing not defined or deleted. Revaluation of brand names required at least every 3 years but only to be included in total assets at discretion of the bank.
		Computer software (3)	TL/TNW	Deleted*	Debt includes contingent liabilities and guarantees.
		Food (4)	TL/TA	⩽70%	Total liabilities to include contingent liabilities.
		Gas production (5)	Indebtedness	Deleted*	'Indebtedness' to include conditional sales (forward sales, advance purchase transactions, production payments), leases, direct or indirect guarantees
		Grocery chain (6)	TL/TTA	⩽70%	Total liabilities to include contingent liabilities.
		Industrial (7)	SHF/TTA	>40%	Total tangible assets to exclude goodwill, brand names, future tax benefits and all other assets defined as intangible under GAAP. Shareholders funds *to include* aggregate principal amount outstanding in respect of subordinated debt

(*continued*)

Table 4
Continued.

Accounting-based restrictions	Frequency	Industry (contract no.)	Ratio/construct	Tightness	Definition
					where the terms of the latter have been previously agreed to in writing by the Bank, and *to exclude* the capital amount and premiums payable on redemption of all redeemable preference shares in the capital of the Borrower or its subsidiaries and any amounts to be excluded from the calculation of total tangible assets.
		Newsprint manufacture (8)	TL/TTA	Deleted*	Total liabilities to include contingent liabilities. Ratio defined over the group as well as for the borrowing company.
		Publishing (10)	Group TNW/TL	>100%	Total net worth = total assets less the sum of total liabilities (GAAP) and contracted contingent liabilities.
		Television station (11)	TL/TTA	<60%	Total liabilities to include contingent and finance lease liabilities but excluding the liabilities of companies in the group not party to guarantees. Total tangible assets includes the same of relevant companies (i.e., parties to the guarantees) and to include share issue proceeds received since date of the accounts, revaluation increments/decrements, and after deducting any income yet to mature at the date of the adjustment, and with provision for further adjustments deemed appropriate by the Borrower's auditors.
		Unknown (13)	Financial Indebtedness/SFA	<150%	Financial Indebtedness includes current and future debts, actual or contingent, obligations under derivative instruments, deferred purchases, forward sales, finance leases (under GAAP) and guarantees.

Secured debt	6	Brewing (2)	TSL	Deleted*	Total Secured Liabilities to include obligations under sale and leaseback arrangements.
		Computer software (3)	TSL < total security assets	Deleted*	Total secured liabilities to include contingent liabilities and guarantees. Total security assets to include aggregate of current book values of all real property (including leaseholds), all accounts receivable (net of doubtful debts), all raw material stock in trade, work-in-progress after deduction of provisions, all plant and equipment.
		Food (4)	TSL/TA	⩽10%	
		Grocery chain (6)	TSL/TTA	⩽10%	
		Transport (12)	TTA/TSL	⩾110%	Total tangible assets = sum of book value less provision for losses, depreciation, amortisation, doubtful debts, goodwill, other intangibles (excluding future tax benefits). A requirement for agreement on asset valuations. Total secured liabilities to include estimated tax liabilities and long service leave commitments.
		Unknown (14)	SVR	⩽68.5%	SVR (secured value ratio) = aggregate outstanding monies/secured property value.
Interest cover	10	Brewing (2)	EBITDA/NETINT	Deleted*	
		Computer software (3)	NPBIDT/TFC	Deleted*	
		Food (4)	EBITDA/NETINT	⩾2.5	EBITDA is also before abnormal items
		Grocery chain (6)	EBIT/NETINT	>2.5	EBIT excludes unrealised revaluation gains/losses, equity accounted profits (with exception of dividends received), capital or extraordinary gains/losses. NETINT = net interest total interest cost incurred less total interest received, by the borrowing group.

(*continued*)

Table 4
Continued.

Accounting-based restrictions	Frequency	Industry (contract no.)	Ratio/construct	Tightness	Definition
		Industrial (7)	EBIT/funding costs	>2	Funding costs = interest and interest-like costs, discounts on sale of debt securities, costs of establishing debt and associated financing, finance charges under finance lease and hire purchase agreements, dividends on redeemable shares and convertible notes, realised losses on foreign currency borrowings and hedging transactions.
		Newsprint manufacture (8)	Not defined	Deleted*	Current foreign exchange rates to be used when calculating ratios.
		Publishing (10)	Operating profit/ interest expense	Deleted*	
		Television station (11)	EBDIT/TFC	4	Total financing charges to include interest, finance lease interest, and interest like payments under any other contract.
		Transport (12)	EBIT/Total outgoings	Deleted*	Total outgoings include interest, financing costs including interest component of finance leases less interest on funds on deposit which represent sale of assets pending repayment to a lender.
		Unknown (13)	Earnings/Gross interest	2	Earnings = Consolidated earnings before interest. Gross interest = all interest and interest like amounts.
Current ratio	2	Computer software (3)	Current TTA/ current L	Deleted*	
		Publishing (10)	Current TA/current L	>1	Total current assets exclude intangibles and FITB.

					Current liabilities include contracted current liabilities. If interest is due in foreign currency a current exchange rate (or hedged rate if relevant) is to be used for calculation of the ratio.
Other accounting based restrictions:					
i. Net worth to exceed $x	6	Brewing (2)		Deleted*	
		Food (4)		Deleted*	
		Grocery chain (6)		Deleted*	
		Industrial (7)		Deleted*	Net worth = shareholders funds as defined for total debt.
		Newsprint manufacture (8)		Deleted*	
		Television station (11)	TTA-TL	Deleted*	
ii. Tangible assets of 'excluded' companies ⩽ x% of TTA	1	Grocery chain (6)		5%	
iii. EBIT of 'excluded' companies ⩽ x% of EBIT	1	Grocery chain (6)		5%	
iv. Non-core business < x% assets	2	Food (4)		12.5%	
		Grocery chain (6)		10%	
v. Dividends ⩽ x% NPAT	2	Industrial (7)		60%	
		Unknown (13)		100%	

(*continued*)

Table 4
Continued.

Accounting-based restrictions	Frequency	Industry (contract no.)	Ratio/construct	Tightness	Definition
vi. Contribution of a minimum amount of construction costs (joint venture)	1	Oil pipeline (9)		Deleted*	
vii. Book value of mortgaged vehicles > principle amount of debt	1	Transport (12)		Implicit in definition	
viii. Gross assets of immaterial subsidiaries < x% of gross group assets	1	Brewing (2)		Deleted*	
ix. Limit on exploration expenditure	1	Gas Production (5)		Deleted*	
x. Operating cash flow/ financing costs	1	Publishing (10)		>100%	Operating cash flow = operating profit after tax adjusted for non-cash items as per GAAP and for cash dividends received from non-group companies.
xi. Aggregate book value of fixed assets owned, purchased or otherwise acquired not to exceed $x.	1	Industrial (7)		Deleted*	

* Details have been deleted by the law firms supplying the data.

Definitions:

EBIT	Earnings before interest and tax expense.
EBITDA	Operating profit before tax, depreciation, amortisation of goodwill and net interest.
NETINT	Total interest paid by the Guarantor and its Subsidiaries less interest received by the Guarantor and its Subsidiaries.
NPBIDT	Net operating profit before Financing costs (defined), amortisation of intangibles, depreciation and taxes of the group.
OPCF	Operating cash flows defined as operating profit after adjusting for non-cash dividends received, cash dividends received from companies not in group nor in industry, profit/loss on sale of assets, investments, non-cash items, net movement in working capital, cash effect of extraordinaries.
SFA	Shareholders Funds Adjusted = Total Shareholders' Funds less Total Intangible assets.
SHF	Aggregate net consolidated shareholders funds amount disclosed in the latest annual financial statements.
SVR	Secured value ratio = Aggregate outstanding monies/secured property value.
TA	Total Assets.
TFC	Includes all interest, costs in the nature of interest, discount on the issue and sale of debt securities, costs incurred in establishing debt finance, finance charge under finance leases and hire-purchase agreement, dividends on redeemable shares and losses on foreign currency loans.
TL	Aggregate of consolidated secured and unsecured direct and contingent liabilities (including provision for tax and long service).
TNW	Total net worth.
TTA	Aggregate book value of all tangible assets of consolidated companies (based on GAAP).

Australian Corporations Law (and previous Companies Acts) limiting dividends to current and previously undistributed profits.[13]

We also identify the accounting constructs employed in the definition of the accounting-based constraints, the tightness of these constraints, as well as, measurement rules relevant to the accounting constructs, if any. Table 4 reports on these aspects for each type of accounting-based constraint. In general, the measurement rules specify the use of consolidated accounting numbers based on 'rolling' GAAP (i.e., GAAP applying at date of measurement) plus specific adjustments. Occasionally, we observe provision for accommodation should a breach be caused by a subsequent change in GAAP. This is consistent with the arguments and evidence in both Leftwich (1983) and Whittred and Zimmer (1986a).

3.2.1. Total debt

Eleven of the sixteen contracts (69 per cent) contain limits on total debt. The restriction is defined, with almost equal frequency, as the ratio of total liabilities to either total tangible assets (TTA), total net worth (TNW) or shareholders' funds (SHF). One contract limits debt to a proportion of total assets—this represents an agreement for a food manufacturing and distribution business. Whittred and Zimmer (1986a) find a restriction on total debt in 92 per cent of their 41 public debt contracts and the majority specify it relative to TTA.

Table 4 also shows the tightness of the constraint on total debt for a majority of the contracts. Note that it varies with the definition of the constraint itself. Where it is defined as total debt to TTA, the limit is 60 or 70 per cent. Where it is defined in an alternative fashion (e.g., as shareholders' funds to total assets or total tangible assets, or as shareholders' funds to total liabilities), it translates to the equivalent of total liabilities ranging between 60 and 70 per cent of total assets or TTA. This is consistent with Whittred and Zimmer's (1986a) evidence from public debt contracts.

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[13] Section 201 of the Australian Corporations Law provides that no dividend shall be payable except out of profits. While there is no strict legal definition of profits, case law does provide guidance (Ford, Austin and Ramsay, 1997, Chapter 18). In addition to current profits, accumulated profits (retained earnings) and balances in revenue reserves created through transfers therefrom are distributable. Although the asset revaluation reserve is commonly classified as a capital reserve, there is 'authority for the opinion that an unrealized appreciation may be distributed even as a cash dividend providing, of course, that a bona fide valuation of all assets shows the share capital to be intact' (Johnston et al., 1987, p.87, p.208). There is no requirement to make good past losses before distributing current profit; conversely it is possible to pay a dividend out of retained earnings while reporting current losses.

The last column in Table 4 specifies accounting measurement rules deviating from GAAP. With respect to the constraint on total debt, the contracts typically expand the definition of total liabilities to include direct and indirect guarantees and contingent liabilities.[14] In two cases, we also observe the specific inclusion of liabilities potentially arising from derivative financial instruments (see contracts numbered 1 and 13). Most accounting research uses reported leverage (based on 'recognised' balance sheet numbers only) as a proxy for firms' closeness to debt constraints. Indeed, Duke and Hunt (1990) and Press and Weintrop (1990) provide evidence in defence of exactly such an approach; both report that the leverage ratio (defined in alternative ways, but with components confined to 'recognised' numbers) is a reasonable measure of the probability of default on restrictive covenants in debt contracts. However, our evidence suggests that if there is high cross-sectional variation in firms' level of potential liabilities arising from contingencies and guarantees, these leverage calculations could be noisy and perhaps even biased indicators of firms' true closeness to debt constraints. Since we do not know the identities of the borrowing parties to these contracts, we are unable to provide any further evidence on this issue.

3.2.2. Secured debt

Constraints on secured debt are observed in six of the 16 contracts (38 per cent), and we are able to ascertain the definition of the constraint in five. While three relate secured debt to total or tangible assets (as in public debt contracts), two relate secured debt to security assets[15] or secured assets. The definition of the constraint in the sixth contract is not clear beyond a clause indicating a limit on total secured liabilities.

We are able to ascertain the tightness of the constraint in four of the six relevant contracts and note that the tightness varies. Two contracts restrict secured debt to 10 per cent of either total assets or TTA, both *more* restrictive than limits reported in public debt contracts of 40 to 60 per cent of TTA (Whittred and Zimmer, 1986a).[16] A third requires the ratio of TTA to total

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[14] This is consistent with Whittred and Zimmer (1986a) who find that the issue of quasi-debt is controlled by including contingent liabilities in the definition of total liabilities.

[15] The definition of security assets in the relevant contract is wider than secured assets. Notice (in Table 4) that contract 3 defines security assets to include the aggregate of current book values of all real property (including leaseholds), all accounts receivable (net of doubtful debts), all raw material stock in trade, work in progress and all plant and equipment.

[16] Any interpretation of the tightness of constraints based on total assets is, of course, subject to the level of intangible assets in the borrowing firms—an aspect we do not have sufficient information to clarify.

secured debt to be maintained above 110 per cent—appearing to be much *less* restrictive than public debt limits. A fourth contract requires secured debt to be limited to less than 68.5 per cent of secured assets. Based on our limited sample, there appears to be higher variability in the tightness of private debt versus public secured debt constraints. This is consistent with the arguments in Leftwich (1983) and Smith and Warner (1979) that lower re-negotiation costs in private debt versus public debt settings permit a higher level of specification and variation in private debt agreements.

Measurement rules for accounting constructs are specified in four of the six contracts. For example, in one contract the measurement of secured debt is required to include obligations under sale and leaseback agreements; in another secured debt is defined to include guarantees and contingent liabilities. Where available, specifications on the asset base effectively exclude intangible assets.

3.2.3. Interest cover

Ten of our 16 contracts (63 per cent) specify restrictions on interest cover and as continuing constraints. In contrast, Whittred and Zimmer (1986a) find that interest cover constraints only apply at the time of borrowing and occur in only 33 per cent of their 18 public debenture trust deeds.[17] Following this evidence from public debt, accounting policy choice papers based on Australian samples typically do not examine managerial incentives to avoid default on interest cover constraints (e.g., Brown, Izan and Loh, 1992; Cotter and Zimmer, 1995; Whittred and Chan, 1992; Zimmer, 1986). Our evidence suggests that the interest cover constraint is an important (continuing) restriction in private debt contracts.

The definitions for interest cover in our sample are also more varied than those found in public debt contracts. The latter typically define it as earnings before interest and tax (EBIT) divided by interest expense. Contracts in our sample specify numerators which variously remove one or more of the following elements from pre-tax earnings: interest, other finance charges including finance lease charges, depreciation and amortisation charges, and in one case, losses on foreign currency loans. The denominator is often defined more broadly than interest expense alone, for example, as total finance charges. Total finance charges of course include interest and other financing costs ('other interest like charges' such as the interest component of finance leases). But they may also include debt establishment costs, certain types of dividends and realised losses on foreign currency borrowings. The tightness of the interest cover constraint ranges between 2.0 and 4.0.

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[17] They do not find any interest cover constraints in the deeds governing their unsecured and convertible note samples.

3.2.4. Current ratio

The current ratio is used to limit debt in only two contracts. In both cases it is used in addition to at least two of the above accounting-based constraints (see Table 2). It is defined as current assets or current tangible assets to current liabilities. Where the numerator is specified as current assets, a further measurement rule effectively excludes intangibles. One of the contracts specifies the current ratio to be maintained above 1.0, while in the second case the tightness criterion is deleted by the law firm providing the document.

3.2.5. Other

A majority of the contracts (10 contracts or 63 per cent) contain at least one of the more specific accounting-based constraints identified. The most common is the requirement to maintain a dollar specified level of net worth, although the dollar values are deleted by the law firms providing the data. Dividend constraints appear in two contracts limiting dividends to a certain percentage of net profit after tax (100 and 60 per cent in the two cases observed). We have previously commented on this finding as a surprising one in the context of the Australian Corporations Law. In contrast to the frequent inclusion of dividend constraints in U.S. debt agreements (Smith and Warner, 1979; Kalay, 1982; Healy and Palepu, 1990), research based on Australian public debt contracts has not previously identified the use of dividend constraints (Whittred and Zimmer, 1986a).[18]

3.3. Non-accounting based contractual restrictions

The use of non-accounting based covenants is pervasive in the private debt contracts examined. All contracts in the sample contain covenants from a minimum of three classes of non-accounting based restrictions identified in Table 3. For example, contract number 6 contains restrictions within the following three classes: bonding, financing, and production and investment activities. These three classes are also the most pervasive types of restrictions used in our sample.

All the contracts in the sample have clauses specifying bonding activities, varying only in their degree of specification with each contract containing anything from one to six (average of four) of the 11 types of such restric-

[18] Zimmer (1986), for example, does not test for management incentives to manage their ability to pay dividends, on the basis that such restrictions did not exist in Australia, and also because of the difficulty of defining distributable reserves (see footnote 13 above).

tions.[19] These include requirements for the provision of regular reports, notification of asset movements, the application of proceeds from asset sales, the purchase of insurance, requirements for hedging exposures, and compliance with environmental laws.

Thirteen of the 16 contracts specify restrictions on financing activities ranging from one to three of five possible restrictions identified. Restrictions on control and ownership are also common (in 10 of the 16 contracts). These include restrictions on changes in ownership, subsequent equity issues and the composition of boards of directors ensuring an active corporate governance role for debt-holders.

All contracts (with one exception) contain restrictions on production/investment activities. Fifteen of the 16 contracts specify between one to seven (with an average of four) such restrictions out of 10 possibilities identified. These can be very restrictive; for example, requirements for debt-holder approval of asset purchases (except in the ordinary course of business), new acquisitions and any changes in the nature of the business. Similarly, asset disposals including sale and leaseback arrangements can require prior approval. These restrictions indicate a concern with asset substitution increasing the risk exposure of debt-holders. All appear to severely restrict management discretion, an outcome which is contrary to the arguments in Smith and Warner (1979) that such restrictions are sub-optimal. Smith and Warner find that extensive direct restrictions on production/investment policy are not observed because they are costly to employ. Empirical observation of these clauses in our sample indicates that the market considers the cost-benefit trade-off in favour of such restrictions. This is more likely to be the case in a private debt setting since re-negotiation of such restrictions is likely to be less costly than in the case of public debt. Management 'discretion' can still be exercised with creditor approval. Nevertheless, there are likely to be costs incurred through delay and the process of justification.

While less frequent, restrictions on dividends and other distributions (management fees, capital reduction and share buybacks) and restrictions on group structure and activity are not uncommon. The latter can be restrictive; for example, we find instances of disallowing non-arms' length transactions within company groups. Where this is permitted, independent or auditor verification of the consideration received or paid is required. We also observe constraints on intra-group loans and distributions to subsidiaries, both of which also serve to limit intra-group transfers of assets. Whittred (1987) argues that the defining of total indebtedness over the corporate group (rather than on the borrowing company alone) together with the use of cross-guarantees evolved to solve problems of asset substitution and (debt-holder) claim dilution in group

[19] Recall that restrictions within each class are described in our classification scheme described in Table 2.

settings. He argues that where this is possible to arrange, it is favourable to limitations on intra-group movement of assets which may sub-optimally limit management discretion. Our evidence is consistent with this argument—it suggests that the defining of total indebtedness over a corporate group can be inadequate in certain settings where such arrangements (assurance of cross-guarantees) are either unobtainable or unenforceable within realistic costs. An example of the former is the high cost of extracting cross-guarantees from subsidiaries that are less than wholly owned (Whittred, 1987).[20] Further, corporate groups could, until recently, keep debt off their consolidated balance sheets (thus, avoiding the inclusion of it in group borrowing ratios) through the use of unincorporated controlled entities (Whittred and Zimmer, 1986b).[21] This potentially delayed detection of default, and presumably the triggering of claims under cross-guarantees (effectively increasing the costs borne by debt-holders). Other settings where the enforcement of cross-guarantees is potentially problematic, such as subsidiaries in foreign jurisdictions, are also relevant here.

4. Summary and conclusion

In this paper we report on the use of both accounting and non-accounting based constraints in private debt contracts in Australia. We find that while the accounting based constraints on total debt and interest cover are as common as in contracts governing public debt, private debt contracts are more varied in their definition and specified tightness. Further, limits on interest cover are continuing as opposed to only being applicable at the time of borrowing in the case of public debt issues. Limits on secured debt are not as commonly observed. Consistent with lower re-negotiation costs for private debt contracts, we find frequent use of more specific accounting based constraints. In all cases we observe the frequent inclusion of off-balance sheet numbers in the measurement rules specified. Our evidence suggests caution in the construction of proxies for firms' tightness to debt constraints and the interpretation of empirical evidence based on such proxies. In particular, our evidence suggests caution in reliance on the findings of Duke and Hunt (1990) and Press and Weintrop (1990) which support conventional leverage measures as proxies for closeness to debt constraints. We also caution against the dismissal of interest cover constraints in research based on Australian firms.

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[20] These costs derive from legislation against fraud on or against minority shareholders.

[21] This was true until the Accounting Standard AASB 1024 'Consolidated Accounts' came into force in 1991. While this Standard captures non-corporate entities in its definition of 'controlled entities', any entities not deemed to be 'controlled' would still escape consolidation.

In addition we assemble the first evidence on the use of non-accounting based constraints in Australian debt contracts (public or private). We find such constraints to be pervasive and covering a wide range of corporate activity—financing, bonding, reporting. Much of this evidence is consistent with previous U.S. research (Smith and Warner, 1979; Leftwich, 1983). However, we also report evidence contrary to the predictions of Smith and Warner (1979) that limits on firms' production and investment policies are sub-optimal (in limiting managerial discretion) and unlikely to be observed. We find several such restrictions and report that they occur frequently in our sample. Our evidence suggests that contractual solutions previously argued to be optimal in the market for debt (Smith and Warner, 1979; Whittred, 1987) are not viewed as sufficient by those negotiating private debt contracts; we find frequent supplementation (rather than replacement) of such optimal solutions with others previously argued to be sub-optimal.

Finally, a necessary caveat. Our findings and inferences drawn therefrom should be viewed in the context of a small sample (16 contracts) study. In the absence of public disclosure requirements for private debt contracts, investigations of this nature are limited by the (understandable) reluctance of privately contracting parties to divulge agreements of a proprietary nature.

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