Liquidity Ratios in Bank Loan Covenants

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Abstract

Bank loan covenants are restrictions that require stated levels of performance by borrowers, and are often measured by standard financial ratios. The research on loan covenants has assumed that these measures are useful, providing information to lenders as to the viability of borrowers. This analysis uses a sample of current ratios to suggest that such balance sheet ratios may have limited predictive value of impeding defaults, and proposes that total receipts-to-cash flow, a ratio comprised of data from both significant financial statements, provides superior forecasts of such outcomes. The research is based on U.S. experience during the recent credit crisis.

Introduction. Loan covenants include limitations on new debt beyond current borrowings, changes in business strategies or senior management, and various financial compliance requirements, often as measured by standard ratios in such categories as liquidity, leverage, activity and profitability. Previous research and practice have assumed that the standard measures are appropriate, providing information to the lender as to the viability of the borrower. The author's 2009 research on this topic was conducted at the time of a severe global recession when credit was severely restricted to corporate borrowers.*

Business Performance during the Recent Recession. The corporate credit market debt growth reported by the Fed declined from 13½% in 2007, just prior to the recession, to a low of -2% in 2009. Business failures about doubled during this period. Non-performing business loans measure the extent of corporate distress, showing a significant rise during the recent recession (more than a 5-time increase from 2007 to 2010). Bankers and regulators have gained experience and analytical insight through these problems, and have made adjustments in their dealings with corporate borrowers, requiring higher levels of documentation, appraisals of collateral required to support loans, more frequent meetings and other communications with borrowers, and greater disclosure of the basis for pro forma statement forecasts. However, the analytical techniques used to evaluate credits continue to be utilized and the mistakes will reoccur.

Liquidity in Bank Covenants. Various researchers report that liquidity metrics – which indicate the borrower's ability to generate sufficient cash to service a loan – appear in a substantial number of lending agreements. Resulting problems include:
- Window-dressing/fraudulent manipulation to meet bank covenants or the expectations of stock analysts.
- Balance sheet accounts that fluctuate concurrently and provide minimal information content.

The slight variation in the current ratio over the recent recession indicates that it is not a useful metric in predicting deteriorating corporate results. In fact, the total standard deviation of current ratio results is ⅓rd (or 0.04) of that of the suggested alternative ratio, TR ÷ CF (0.12).

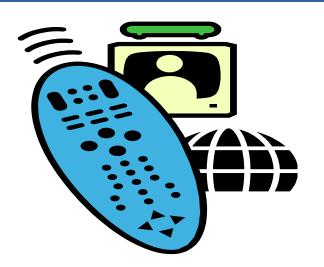### Variation in Liquidity Ratios by Industry

For Years 2007-2011 (based on the standard deviations [σ] of each data set)	NAICS Series*	Change in σ of Current Ratios	Change in σ of Total Receipts to Cashflow
Agriculture	11	0.10	0.14
Construction	23	0.04	0.22
Manufacturing	31-33	0.19	1.51
Wholesaling	42	0.17	0.36
Retailing	44-45	0.10	0.13
Transportation & Warehousing	48-49	0.12	0.12
Information	51	0.25	0.24
Other	62 & 72	0.06	0.07
CHANGE		0.04	0.12

Total Receipts ÷ Cash Flow (TR ÷ CF). It is inherently more accurate and useful to measure liquidity using at least one account derived from the income statement, which covers the activities of an entire fiscal period rather than the status as of a single date. Although TR ÷ CF is not a ratio that is generally not considered as a standard financial measure, it appears to better reflect industry experience with actual liquidity (rather than the aggregation of current asset and current liability accounts) as measured against revenue. The TR ÷ CF ratio indicates the effectiveness with which a firm uses cash to manage its revenues as compared to its industry; that is, the less cash required for each dollar of sales, the more efficient is the company.

Further Research. There are at least 10 different systems that purport to measure the risk of default of a business several of which are proprietary. Arguably the best known is Altman's Z score which predicts the probability that a firm will become bankrupt within 2 years using various corporate income and balance sheet values. Research should be conducted on the predictive power of available models, particularly on ratios based on balance sheet accounts (e.g., total debt-to-total assets and variations). Given the significant impact of defaults on an economy, this should be a priority for government regulators.

*"Bank Loan Covenant Measures and Mis-measures," *North American Jl. of Finance and Banking Research*, Vol. 3 (2009), pp. 55-68.

Circuit City and Bally's Total Fitness. Two illustrative corporate failures:
- Circuit City. The current ratio showed little deterioration either over time or against industry results. Prior to 2008, Circuit City's lenders could discern significant problems only by examining the TR ÷ CF. Furthermore, the variation within the current ratio during the period was trivial compared to the TR ÷ CF variation. The coefficient of variation (CV) shows that the TR ÷ CF is 13.74 times the CV of the current ratio! (2008 data).

- Bally's. This health club chain clearly had more extreme problems than Circuit City. The current ratio was 0.17 compared to the industry results of 0.30 (2006 data). While the calculation is below that of the industry, the result is positive. For the same reporting period, the current ratio was 0.3 while the TR ÷ CF for Bally's was -0.67. The casual banker (who depended on the current ratio) might be willing to extend a credit agreement to Bally's, while a more concerned lender (using TR ÷ CF) would likely deny further assistance.

Conclusions. There are several conclusions that develop from this analysis.

- Balance sheet ratios – particularly those that use current assets and liabilities – in financial covenants written into loan agreements have little predictive or control value when applied to loan defaults.

- Any financial covenant should include an income statement-to-cash measure. This analysis uses total receipts-to-cash flow, although it is certainly possible that others (for activity utilization) may be useful.

- The principal federal regulator of commercial banks (the Comptroller of the Currency) should consider mandatory financial covenants in loan agreements. At the present time, loan covenants are determined by individual commercial banks and are not subject to regulatory oversight.

- Loan agreement covenants should be more thoughtfully considered by bankers and not simply based on previous loan documents.

- Specific loan default situations – Circuit City and Bally's Total Fitness – analyzed using this methodology confirmed these general findings.