

QUANTIFYING THE  
5 Cs: **CREDIT**  
**ANALYSIS RATIOS**  
**THAT MATTER**

**sageworks**<sup>®</sup>

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## EXECUTIVE SUMMARY

Recent regulatory changes and comments from regulators suggest increased oversight for financial institutions and decreased tolerance of credit risks tied to new and existing business relationships. While there are numerous qualitative measures, like past experience with the borrower, that can indicate expected financial performance, it's important to consider and measure over time the key metrics that accompany the [5 Cs of Credit](#). While individual debt service coverage ratios, net profit margins, quick ratios and loan to value ratios, are great indicators of a potential borrower's ability to repay his or her loan obligations, industry best practice is to use these metrics in concert with the business's metrics to generate a full view of a firm's credit-risk profile. This whitepaper will expand on each of these metrics, what they mean for lending decisions and how to advise your clients to improve.

# CHALLENGES

The U.S. economy has made progress in recent years to recover from the Great Recession, yet many private companies are still struggling to achieve a solid financial standing. Even with [recent trends](#) showing that profit margins have increased, as recently as the first quarter of 2011 business failures still outnumbered business startups, according to the Bureau of Labor Statistics.<sup>1</sup>

With new regulations ramping up over the coming years, many bankers will begin to feel heightened pressure from regulators to avoid making overly risky loans. In a [study by Pepperdine University](#), 45 percent of participating bankers reported experiencing increased regulatory pressures to avoid risky loans, while at the same time two-thirds of respondents said underwriting standards from examiners haven't improved over the course of a six-month period.<sup>2</sup>

In response to these regulations and as a good practice, many banks and credit unions are keeping a close eye on their charge-offs and delinquency rates. At the end of first quarter 2012, more than 5 percent of all loans and leases were delinquent,<sup>3</sup> with charge-offs net of recoveries accounting for 1.22 percent of institutions' total loans and leases,<sup>4</sup> according to the [Board of Governors of the Federal Reserve](#).

While business bankruptcy filings are a clear warning sign of financial trouble in a loan applicant, other events are helpful in recognizing risk of default and avoiding risky loans. For this paper, we consider a default to include any of the following within a one-year period:

- A loan 90 days past due
- A loan placed in nonaccrual status
- A write-down on an obligation (or reduction of the book value)
- A loan being classified as a troubled-debt restructuring

## DEFAULT ASSUMPTIONS INCLUDE

1. A loan 90 days past due
2. A loan placed in nonaccrual status
3. A write-down on an obligation (or reduction of book value)
4. A loan being classified as a troubled-debt restructuring

# SIGNS OF FINANCIAL TROUBLE

Effective loan portfolio management begins with oversight of risk in individual loans, at origination and review, and can be measured using the [5 Cs of Credit](#).

Capacity	Capital	Conditions	Collateral	Character
Measures a borrower's ability to repay a loan by comparing income against recurring debts	Refers to the net worth or equity of a business	Characterizes the economic, industry and market environment, which can and will change	Estimates the collateral available to secure the debt	Assesses the personal integrity of business owners and guarantors
<b>Key question:</b> <i>Can the borrower generate adequate cash to repay the loan?</i>	<b>Key question:</b> <i>Is the borrower adequately capitalized within industry standards to withstand unexpected loss?</i>	<b>Key question:</b> <i>Is the borrower flexible enough to adapt to changing conditions?</i>	<b>Key question:</b> <i>Is there an alternative source of repayment is the primary source fails?</i>	<b>Key question:</b> <i>Is management willing to repay the loan and will it attempt to do so under adverse conditions?</i>

In this paper, we focus on metrics pertinent to evaluating a commercial loan since these entities often have more complex financial statements, commingled debt and income and a host of financial metrics to consider.

To quantify the 5 Cs of Credit in business, analysts can typically review ratios derived from a company's financial statements. These metrics and the financial statements they come from should be instrumental in underwriting and the [annual review of commercial credits](#).

# KEY METRICS IN COMMERCIAL CREDIT ANALYSIS

Four key, [financial variables](#) have been utilized by industry experts to both represent a company's credit-risk profile and to predict their likelihood of default. These metrics are:

- Debt Service Coverage Ratio
- Net Profit Margin
- Quick Ratio
- Loan to Value

Each of these variables is a unique indicator of a private company's financial standing and has significant implications when evaluating credit risk.

## Debt Service Coverage Ratio

### What does it mean?

One of the most critical measures in predicting likelihood of default is a firm's debt service coverage ratio. In the previously mentioned [Pepperdine study](#), over half of participating institutions indicated they saw the debt service coverage ratio as important or very important in developing their lending decisions.

#### How it's calculated:

$$\text{Debt Service Coverage Ratio} = \frac{\text{EBITDA}}{\text{Debt Service}}$$

$$\text{Debt Service} = \text{Prior Period's Current Portion of Long Term Debt} + \text{Current Period Interest Expense}$$

# KEY METRICS IN COMMERCIAL CREDIT ANALYSIS (CONT.)

## NOTE:

The higher a firm's debt service coverage ratio, the greater its ability to produce enough cash to cover debt payments.

### Why is it important?

The higher a firm's debt service coverage ratio, the greater its ability to produce enough cash to cover debt payments. This ratio, then, indicates a firm's *capacity* to repay its loan obligations.

Similar to a homeowner needing a minimum ratio of monthly income to the monthly mortgage payment, lenders seek assurance that a business is at least healthy enough to cover current debt. For example, the U.S. Small Business Administration's (SBA) [504 loan program](#), which provides small businesses with long-term financing for major fixed assets, typically requires a debt service coverage ratio of 1.15 or higher.<sup>5</sup>

Debt service coverage may be more difficult to calculate for complex borrowers, those with multiple businesses, owners or pieces of real estate. In this scenario, the firm has to be analyzed with a robust [global cash flow analysis](#) that prevents double counting of income or debt.

### How to improve it, if necessary

Since debt service coverage ratios are closely tied with earnings before interest, tax, depreciation and amortization (EBITDA), many of the same methods of improvement will be effective even with little change to debt and interest. Some of these methods include

- Focus on [increasing EBITDA](#) by lowering operational costs
- Consider refinancing to lower interest rates and therefore interest expense
- Use available cash to pay off more principal, which will in turn make interest payments smaller going forward

# KEY METRICS IN COMMERCIAL CREDIT ANALYSIS (CONT.)

## Net Profit Margin

### What does it mean?

Another predictor of a firm's likelihood to default on loans is its net profit

margin, which fundamentally shows the profitability of a company. Sageworks Chairman Brian Hamilton [explains](#): "Net profit margin is really a proxy for efficiency. Out of every dollar that you sell, how many cents in profit are you taking out?"

### How it's calculated:

$$\text{Net Profit Margin} = \frac{\text{Net Profit before Taxes}}{\text{Sales}}$$

### NOTE:

The higher the profit margin, the more likely the business will be able to remain resilient in periods of unexpected losses.

### Why is it important?

The net profit margin is important to evaluate in lending decisions because it effectively shows the firm's potential net worth based on earnings. This has a direct effect on *capital* reserves, which means the higher the [profit margin](#), the more likely the business will be able to remain resilient in periods of unexpected losses.

A lower net profit margin could indicate a company's pricing strategy, sales volume or expenses are out of line [compared with others in the industry](#). Similarly, a higher margin than peers could point to stronger-than-average performance in one or all of those measures. In either scenario, the information is helpful in evaluating a firm's efficiency and in gauging the likelihood the business will be unable to pay its debts.

# KEY METRICS IN COMMERCIAL CREDIT ANALYSIS (CONT.)

## How to improve it, if necessary

According to Karen Berman and Joe Knight, authors of *Financial Intelligence for Entrepreneurs*, three possible fixes to a poor net profit margin are

- Focus on reducing overhead expenses (though it may be a quick fix providing one-time savings)
- Increase sales volume so fixed costs are spread further, improving profitability
- Seek advice from customers as to how the company can optimize its offering for the customer or find a new market, potentially boosting sales

## Quick Ratio

### What does it mean?

A basic measure of a firm's liquidity, the quick ratio measures all of the firm's

assets (cash and otherwise) that could be used almost immediately to pay off debts relative to the firm's short term liabilities.

### How it's calculated:

$$\text{Quick Ratio} = \frac{(\text{Cash} + \text{Accounts Receivable})}{\text{Total Current Liabilities}}$$

### Why is it important?

Lenders look to the quick ratio because it shows the percentage of a firm's debts that could be paid off by quickly converting assets into cash. Lenders often look at this ratio because the more liquid a firm's assets, the better equipped it is to adapt to changing *conditions* in the business environment.

# KEY METRICS IN COMMERCIAL CREDIT ANALYSIS (CONT.)

Ideally, a firm's quick ratio should be about 1:1, meaning its current assets are just able to cover short-term debts. Low quick ratios are riskier investments because, for those business borrowers, the company's current debt outweighs current cash reserves. In general, the higher the quick ratio the better because it shows the firm has sufficient cash.

## NOTE:

Ideally, a firm's quick ratio should be about 1:1, meaning its current assets are just able to cover short-term debts.

However, be wary of a firm with an especially inflated quick ratio, as it may be an indicator the company isn't effectively using cash reserves to grow the business.

## How to improve it, if necessary

Since the quick ratio is a [measure of liquidity](#), the following methods can be used to make sure cash and cash equivalent reserves are adequate to cover short-term debts:

- Shore up accounts receivable management to ensure payments are promptly received, which increases cash reserves
- Eliminate unproductive, illiquid assets to free up cash reserves, pay off debts or invest back into growing the business
- Decrease the amount of current debt by negotiating longer-term liabilities

# KEY METRICS IN COMMERCIAL CREDIT ANALYSIS (CONT.)

## Loan to Value

### What does it mean?

The loan to value (LTV) ratio basically shows the size of the loan as compared

to the proposed collateral—that is, the percentage of the principal value covered by the appraised collateral (often real estate). The benchmarks used to determine a high or low LTV will take into consideration the type of collateral, (e.g. real estate, inventory, accounts receivable, equipment or securities).

### How it's calculated:

$$\text{Loan to Value} = \frac{\text{Total Loans} + \text{Prior Liens}}{\text{Net Collateral}}$$

### Why is it important?

Lenders typically rely heavily on a prospective business borrower's LTV because it shows the risks involved with issuing the loan. By looking at LTV, lenders can assess how much *collateral* the firm has if the primary source of repayment (i.e. income or cash flow) fails and the collateral must be sold.

A lower LTV often indicates the loan and relationship is less risky, though this metric can't be used in isolation. If the potential loan has a low LTV, it may allow the lender or analyst to accommodate a slightly lower credit score, high debt to income ratio or previous late payments.

Borrowers with higher LTVs have committed fewer resources and thus, in the event of default, would have less available to supplement loan payments.

### NOTE:

By looking at LTV, lenders can assess how much collateral the firm has if the primary source of repayment (i.e. income or cash flow) fails and the collateral must be sold.

# KEY METRICS IN COMMERCIAL CREDIT ANALYSIS (CONT.)

## How to improve it, if necessary

Since LTVs often have a direct impact on loan decisioning, prospective borrowers should take some of the following steps to lower their LTVs:

- Consider increasing the proposed down payment; loans with a higher percentage down payment have a higher approval rate, as it lowers the loan amount needed
- Pledge additional collateral
- Provide an updated appraisal if collateral value has risen since the last appraisal
- Focus on improving additional factors outside of LTV since one ratio doesn't guarantee approval

## Quantifying Character

### What does it mean?

Given its ambiguity, there is no great way to objectively assess a potential borrower's *character*. Lacking a quantitative grounding, the character criterion is often an observation or review of the borrower for possible flaws in attitude about business ethics, responsibility and commitment. In the case of a business loan, the business owner and/or loan guarantors would be considered.

# KEY METRICS IN COMMERCIAL CREDIT ANALYSIS (CONT.)

## NOTE:

Character is an excellent predictor of the firm's commitment to repay debt obligations.

### Why is it important?

An owner/guarantor's character is an excellent predictor of the firm's commitment to repay debt obligations. "The borrower's character is important because it reveals intent," according to Charles Green of the [Small Business Finance Institute](#).

Some possible indicators of a business borrower's character include

1. Payment records from other loans
2. History of bankruptcy
3. Litigation or settlements
4. References from professionals who are familiar with the business
5. Previous record of business success

## CONCLUSION

The requirement of a bank or credit union to objectively measure credit risk in business borrowers is not a requirement that will be lessened or changed any time soon. Rather, examiners will continue to ensure financial institutions are completing appropriate due diligence in evaluating credit risk. While the financial data business borrowers supply provides most of the information needed to make an educated assessment, it's important to know exactly what those metrics mean for lending decisions. Reviewing these metrics, along with others identified in the institution's underwriting procedures, provides a more holistic picture of borrowers' credit risk characteristics.

## ABOUT SAGEWORKS

Sageworks ([www.sageworks.com](http://www.sageworks.com)) is a financial information company working with financial institutions, accountants and private-company executives across North America to collect and interpret financial information. Thousands of bankers rely on Sageworks' credit risk management solutions to streamline credit analysis, risk rating, [portfolio stress testing](#), loan administration and [ALLL calculation](#). Sageworks is also an industry thought leader, regularly publishing [whitepapers](#) and hosting webinars on topics important to bankers.

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Credit  
Analysis

[Sageworks Credit Analysis](#) is

a robust commercial credit spreading and global cash flow analysis solution that

helps bankers make more profitable lending decisions and objectively measure credit risk.

To find out more, visit [www.sageworksanalyst.com](http://www.sageworksanalyst.com).

# ENDNOTES

<sup>1</sup> “Business Employment Dynamics: Second Quarter 2013.” BLS.gov. Bureau of Labor Statistics, U.S. Department of Labor. Web. Accessed 2/10/14.

<sup>2</sup> Paglia, John K. “Pepperdine Capital Markets Project: Survey Report V Summer 2011.” Bschooll.pepperdine.edu. Pepperdine University Graziadio School of Business and Management, 2011. Web. Accessed 2/10/14.

<sup>3</sup> “Delinquency Rates: All Banks, SA.” FederalReserve.gov. Board of Governors of the Federal Reserve System. May 2012. Web. Accessed 2/10/14. <http://www.federalreserve.gov/releases/chargeoff/delallsa.htm>.

<sup>4</sup> “Charge-Off Rates: All Banks, SA.” FederalReserve.gov. Board of Governors of the Federal Reserve System. May 2012. Web. Accessed 2/10/14. <http://www.federalreserve.gov/releases/chargeoff/chgallsa.htm>.

<sup>5</sup> Comptroller of the Currency. “SBA’s Certified Development Company/504 Loan Program: Small Businesses’ Window to Wall Street.” OCC.gov. Accessed 2/10/14. <http://www.occ.gov/topics/community-affairs/publications/insights/insights-occdmrm-504.pdf>.

## ADDITIONAL RESOURCES

**“Enhancing Credit Quality,” Sageworks.**

<http://web.sageworks.com/enhancing-credit-quality/>

**“Shifting Credit Concentrations: 6 Ways to Prepare,” Sageworks.**

<http://web.sageworks.com/shifting-credit-concentrations/>

**“Financial Institution Examiners Scrutinize Asset Quality, Loan Admin,” Sageworks.**

<http://www.sageworks.com/blog/post/2013/08/23/Financial-institution-examiners-scrutinize-asset-quality-loan-admin.aspx>

**“Asset Quality Improves, Banks Remain Cautious: CEIS Survey,” Sageworks.**

<http://www.sageworks.com/blog/post/2012/12/10/Asset-quality-improves-banks-remain-cautious-CEIS-survey.aspx>

**“Lending Outlook for 2014,” Sageworks.**

<http://web.sageworks.com/lending-outlook-2014/>