SECOND EDITION

Financial Analysis

A Controller's Guide

STEVEN M. BRAGG

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FINANCIAL ANALYSIS
A Controller's Guide
Second Edition

Steven M. Bragg

John Wiley & Sons, Inc.

Published by John Wiley & Sons, Inc., Hoboken, New Jersey.

Published simultaneously in Canada.

Department within the United States at 800-762-2974, outside the United States at 317-572-3993 or fax 317-572-4002.

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Library of Congress Cataloging-in-Publication Data:

Bragg, Steven M.

Financial analysis: a controller's guide / Steven M. Bragg—2nd ed.

p. cm.

Includes index.

ISBN-13: 978-0-470-05518-2 (alk. paper)

ISBN-10: 0-470-05518-9

1 Controllership. 2. Corporation—Finance. 3. Financial statements. I. Title.

HG4026.B663 2006

658.15—dc22

2006046753

To my fabulous wife, Melissa

About the Author

Steven Bragg, CPA, CMA, CIA, CPIM, has been the chief financial officer or controller of four companies, as well as a consulting manager at Ernst & Young and auditor at Deloitte & Touche. He received a master's degree in finance from Bentley College, an MBA from Babson College, and a Bachelor's degree in Economics from the University of Maine. He has been the two-time president of the Colorado Mountain Club, is an avid alpine skier and mountain biker, and is a certified master diver. Mr. Bragg resides in Centennial, Colorado, with his wife and two daughters. He has published the following books through John Wiley & Sons:

- Accounting and Finance for Your Small Business
- Accounting Best Practices
- Accounting Control Best Practices
- Billing and Collections Best Practices
- Business Ratios and Formulas
- Controller's Guide to Costing
- Controller's Guide to Planning and Controlling Operations
- Controller's Guide: Roles and Responsibilities for the New Controller
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Sales and Operations for Your Small Business
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The New CFO Financial Leadership Manual
The Ultimate Accountants’ Reference
Throughput Accounting

Also:

Advanced Accounting Systems (Institute of Internal Auditors)
Run the Rockies (CMC Press)

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Preface

This book is designed to assist a company controller, or any other member of the accounting and finance staffs, in the analysis of all corporate activities. These activities include the ones covered by most traditional financial analysis books—the evaluation of capital investments, financing options, cash flows, and the cost of capital. However, these topics are not nearly sufficient for an active controller who is concerned with not only the performance of every department, but also potential acquisition candidates, the capacity levels of company equipment and facilities, and the relative levels of risk associated with new or existing investments. This book covers all of these additional topics and more. Within these pages, the reader will find a thorough analysis of the following topics:

- *Evaluating capital investments, financing options, and cash flows*. The first portion of the book attends to these traditional financial analysis topics.
- *Evaluating acquisition targets*. The analysis of acquisition candidates is a major activity for those organizations that grow by this means. The book itemizes the specific analysis activities to complete.
- *Increasing shareholder value*. The book describes a number of areas in which shareholder value can be improved.
- *Improving intangible asset measurement and performance*. The book covers a variety of measurement techniques for such areas as research and development and processes, as well as performance enhancement for research and development.
- *Determining the breakeven point*. The book covers the mechanics of the breakeven calculation, as well as how to use it to recommend changes to operations.

- *Forecasting future business conditions*. The book notes a number of factors useful for predicting business cycles.
- *Evaluating operations, processes, and managers*. The book discusses the specific measurements and corrective actions that can be used for all major company departments, process cycles, and manager performance evaluations.
- *Eliminating products and services*. The book describes the proper calculation methods to determine which products and services should be eliminated.
- *Evaluating capacity utilization*. The book describes how to measure capacity utilization and what corrective action to recommend in cases in which there are bottlenecks or excess available capacity.
- *Using Microsoft Excel to conduct financial analysis*. The book describes the specific Excel formulas that can be used to conduct reviews of the financial statements, as well as capital expenditures, investments, and project risk analyses. A separate chapter addresses the calculation of both single- and multivariable equations using Excel.
- *Using sample analysis reports*. The book presents a wide array of standard financial analysis reports that can be adapted for use by the reader, such as weekly management reports, payroll reports, and utilization reports.
- *Determining the cost of capital*. The book describes the reasons for using the cost of capital, how to calculate it, and under what conditions to modify or use it.
- *Analyzing risk*. The book discusses the concept of risk, how it should be integrated into a financial analysis, various tools for calculating risk, and how to integrate it into an analytic report for use by management.

With the particular attention given to operational analysis in this book, as well as the wide-ranging coverage of all other financial analysis topics, the corporate controller will find that this is a handy reference that can be used time and again for a variety of analytic purposes.

A special note of thanks to my editor, Sheck Cho, who has assisted in the completion of so many manuscripts.

Steven M. Bragg

Centennial, Colorado

November 2006

PART ONE

OVERVIEW

Chapter 1

Introduction

A controller is responsible for a wide array of functions, such as processing accounts payable and receivable transactions, properly noting the transfer of assets, and closing the books in a timely manner. Properly completing these functions is critical to a corporation, which relies on the accurate handling of transactions and accurate financial statements. These activities clearly form the basis for anyone’s successful career as a controller. However, the outstanding controller must acquire skills in the area of financial analysis in order to be truly successful.

By obtaining a broad knowledge of financial analysis skills and applying them to a multitude of situations, a controller can acquire deep insights into why a company is performing as it does, and can transmit this information to other members of the management team, along with recommendations for improvements that will enhance the corporation’s overall financial performance. By knowing how to use financial analysis tools, a controller can rise above the admittedly mundane chores of processing accounting transactions and make a significant contribution to the management team. By doing so, the controller’s understanding of the inner workings of the entire corporation improves and raises his or her visibility within the organization, which can eventually lead to a promotion or additional chances to gain experience in dealing with other departments. Thus, the benefits of using financial analysis are considerable, not only for the company as a whole, but for the controller in particular.

This book is designed to assist the controller in obtaining a wide and in-depth view of the most important financial analysis topics. Toward this end, the book is divided into four parts.

Part One covers the overall layout and content of the book, as well as the role of financial analysis and making management and investment decisions. This includes notations regarding the several types of financial analysis, as well as the various kinds of questions that one can answer through its use. Part One concludes with a discussion of the need for judgment by a controller in interpreting analysis results.

Part Two covers the primary financial analysis topics. Chapter 3 discusses the evaluation of capital investments, which involves assembling cash flow information into a standard cash flow format for which a net present value calculation can be used to determine the discounted cash flow that is likely to be obtained. Chapter 4 describes the various financing options that a controller may be called on to review. For example, is it better to lease an item, and if so, should it be an operating or capital lease? Alternatively, should it be rented or purchased? What are the risks of using each financing option, and can the current mix of company financial instruments already in use have an impact on which option to take? All of these questions are answered in Chapter 4. Chapter 5 covers the essentials of why cash inflows and outflows are the key forces driving financial analysis and notes the wide variety of situations in which cash flow analysis can be used, as well as how to construct and interpret cash flow analysis models.

Chapter 6 is full of checklists and advice regarding how to conduct an analysis of any prospective merger or acquisition candidates, with an emphasis on making a thorough review of all key areas so that there is minimal risk of bypassing the review of a key problem area that could lead to poor combined financial results. Chapter 7 notes several ways to increase shareholder value and discusses the reasons why enhanced cash flow is the predominant method for doing so, as well as how to use leverage to increase shareholder value, while being knowledgeable of the dangers of pursuing this strategy too far.

Chapter 8 describes how to calculate the value of several types of intangible assets, and also provides numerous suggestions for enhancing the results of research and development activities.

Chapter 9 covers the deceptively simple topic of breakeven analysis, which is the determination of the sales level at which a company makes no money. The discussion covers how to calculate the breakeven point, why it is important, the kinds of analysis for which it should be used, and how to use subsets of the breakeven analysis to determine breakeven levels of specific divisions or product lines.

Finally, Chapter 10 covers the forecasting of business cycles. Although this is an issue normally left to bank economists or chief financial officers (CFOs), the controller is sometimes called on to forecast expectations for the industry in which a company operates. This chapter gives practical pointers on where to obtain relevant information, how to analyze it, and how to make projections based on the underlying data. These chapters comprise the purely *financial* analysis part of the book. Though Part Two alone is adequate for the bulk of all analysis work that a controller is likely to handle, there are still many *operational* analysis issues that a controller should be able to review and render an opinion about. That is the focus of Part Three.

Part Three covers operational analysis, which is the detailed review of information about company operations, department by department. Chapter 11 covers the methods for choosing an appropriate set of performance review measures for each member of the management team, how to measure and report this information, and the types of behavioral changes that can result when these measures are used. Though the specific performance measures used are typically made by the CFO or the human resources director, these people may (and should) ask the controller's opinion regarding the best measures. If so, this chapter gives the controller a good basis on which to make recommendations.

Chapter 12 reviews how to analyze process cycles. These are the clusters of transactions about which a company's operations are grouped, such as the purchasing cycle and the revenue cycle. If there are problems with the process cycles, then there will be an unending round of investigations and procedural repairs needed to fix them; because the controller is usually called on to conduct the repair work, it makes a great deal of sense to analyze them in advance to spot problems before they fester.

Chapter 13 addresses a topic that many companies ignore —the evaluation of products and services with the goal of eliminating those that are unprofitable or which do not contribute to company goals.

Chapter 14 covers a *major* topic—the analysis of all primary departments, such as sales, production, engineering, and (yes) accounting. Specific measurements are noted for determining the efficiency and effectiveness with which each department is managed, alongside suggestions regarding why measurement results are poor and what recommendations to make for improving the situation.

Chapter 15 concludes the operational analysis section with a review of capacity utilization, how to measure it, why it is important, sample report formats to use, and recommendations to make based on the measured results. All of these chapters are designed to give a controller an excellent knowledge of how all company operations are performing, and what to recommend to the management team if problems arise.

Part Four covers a number of other analysis topics. Chapter 16 covers the primary formulas that a controller can use in the Microsoft Excel program to analyze financial statements, projected cash flows, investments, and risk. Chapter 17 expands on the use of Excel spreadsheets by detailing how they can be used to solve single- and multivariable problems. Chapter 18 includes many report formats that the reader can use for the reporting of such varied analyses as employee overtime, capacity utilization, and key weekly measures for the management team.

Chapter 19 discusses how to meld the cost of debt and equity to arrive at the cost of capital, and also notes how it should be used and where to use it. Finally, in Chapter 20, there is a discussion of risk—what it is, how it can impact a financial or operational analysis, what kinds of measurement tools are available for calculating its extent, and how to report a risk analysis to management in an understandable fashion.

There are also two appendices in the book. In Appendix A, there is a list of the most common symptoms of financial problems that a controller will encounter, alongside a list of recommended analyses and solutions for each symptom that will point one in the direction of how to obtain a fix to the problem. Appendix B contains a list of the most commonly used ratios, which are useful for analyzing both overall financial results and the specific operational results of individual departments.

This book is designed to give a controller, or anyone in the accounting and finance fields, a thorough knowledge of how to analyze an organization, from individual projects upward to complete departments, and on to entire divisions and companies. For those who are searching for specific analysis tools, it is best read piecemeal, through a search of either the table of contents or the index. However, for those who wish to gain a full understanding of all possible forms of analysis, a complete review of the book is highly recommended.

Chapter 2

The Role of Financial Analysis

Historically, the primary purpose of the accounting department has been to process transactions: billings to customers, payments to suppliers, and the like. These are mundane but crucial activities that are unseen by the majority of company employees, but still necessary to an organization's smooth operations. However, the role of the accounting staff has gradually changed as companies encounter greater competition from organizations throughout the world. Now, a company's management needs advice as well as a smooth transaction flow. Accordingly, the controller is being called on not only to fulfill the traditional transaction processing role, but also to continually review company operations, evaluate investments, report problems and related recommendations to management, and fulfill requests by the management team for special investigations. All of these new tasks can be considered financial analysis, for they require the application of financial review methods to a company's operational and investment activities.

There are several types of financial analysis. One is the continuing review and reporting of a standard set of measures that give management a good view of the state of company operations. To conduct this type of analysis, a controller should review all key company operations, consult the literature for examples of adequate measures that will become telltale indicators of operational problems, develop a timetable and procedure for generating these measurements on a regular basis, and then devise a suitable format for issuing the results to management. For these operational reviews, there are several points to consider:

- *Target measurements*. There is no need to create and continually recalculate a vast array of measures that will track every conceivable corporate activity. Instead, it is best to carefully review operations, with a particular view of where problems are most likely to arise, and create a set of measurements that will track those specific problems.
- *Revise measurements*. No measurement will be applicable forever. This is because a company's operations will change over time, which calls for the occasional review of the current set of measurements, with an inclination to replace those that no longer yield valuable information with new ones that focus on new problems that are of more importance in the current operating environment.
- *Educate management about the measures used*. Though most financial analysis measurements appear to be very straightforward and easily understood, this is from the perspective of the accounting staff, which has been trained in the use of financial measurements. The members of the management group to whom these measurements are sent may have no idea of the significance of the information presented. Accordingly, the controller should work hard not only to educate managers about the contents of financial analysis formulas, but also to keep reeducating them to ensure that explanations do not fade in their memories.
- *Add commentary to measurements*. Even a well-trained management team may not intuitively understand the underlying problems that cause certain measurement

results to arise. To forcibly bring their attention to the key measurements, a controller should add a short commentary to any published set of measurements. This is an excellent way to convert a numerical report into a written one, which many people find much easier to understand.

In short, the financial analysis that relates to the continuing evaluation of current operations involves a great deal of judgment regarding the applicability of certain measures, as well as a great deal of work in communicating the results to management for further action.

A second type of financial analysis that a controller will sometimes be called on to perform is the analysis of investments. Though this work should fall within the range of responsibility of the treasurer’s staff in the finance department, many smaller organizations have no finance staff at all, which means that the work falls on the accounting staff instead. Three subcategories of analysis fall under the review of investments:

1. *The analysis of securities*. When a company either has or is contemplating investing its excess funds in various investment vehicles, such as bonds or stocks, the controller can evaluate the rate of return on each one and render an opinion regarding it. The tools for making this analysis were developed long ago and are simple to calculate. However, the controller may also be called on to evaluate the relative risk of each investment, which is not so subject to quantitative analysis. Instead, the controller must have an excellent knowledge of the liquidity of an investment, as well as its risk of default. This requires additional security analysis skills, heavily seasoned with judgment.

2. *The analysis of financing options*. The controller is frequently called on to review the cost of various financing options when a company is considering acquiring assets. To do so, the controller must not only be able to provide an accurate and well-documented answer that clearly reveals the least expensive alternative, but also have a sufficient knowledge of available options to suggest other financing variations that have not yet been tried.

3. *The analysis of capital expenditures*. When a company wishes to make a capital expenditure, the ultimate test of whether the right decision was made is if the acquisition eventually creates a cash flow that exceeds the cost of financing it. The controller is called on to analyze predicted cash flows in advance, determine the cost of capital, calculate the net present value of cash flows, and pass judgment on the reasonableness of the acquisition, while factoring in the risk of cash flows being inaccurate. These tasks require not just a knowledge of cash flow analysis and discounting methods, but also how to rationally judge the accuracy of predicted cash flows and estimate the risk associated with them.

In the final type of financial analysis, the controller receives a special request from management to perform a financial analysis. Such a request can cover any topic at all. Some examples of one-time management requests that require financial analysis are:

- What would happen to sales if credit levels were tightened?
- What would happen to the accounts receivable balance if credit levels were loosened?
- What would happen to the raw material turnover rate if purchases were made in weekly increments instead of monthly?
- What will be the inventory investment if the company adds one distribution warehouse?
- What will be the savings if the company passes through freight costs to customers?