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# FINANCIAL ANALYSIS AND MODELING

Using **Excel**<sup>®</sup> and **VBA**

SECOND EDITION + CD-ROM

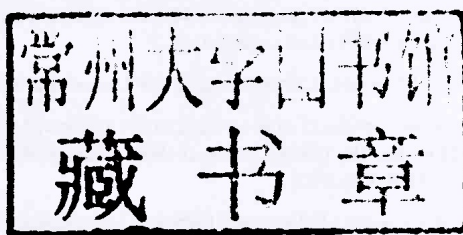
CHANDAN SENGUPTA

Covers  
Excel 2007 and  
earlier versions  
for XP and  
Vista



# **Financial Analysis and Modeling Using Excel and VBA**

**SECOND EDITION**



**CHANDAN SENGUPTA**



**WILEY**

**John Wiley & Sons, Inc.**

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## About This Book

**T**his second edition of *Financial Analysis and Modeling Using Excel and VBA* is designed for use with Excel 2007 as well as earlier versions of Excel going back to Excel 1997. It has been thoroughly updated and expanded to cover all the new features of Excel 2007 including its new efficient user interface—the Ribbon. Excel 2007 introduced many new powerful features, and depending on your needs you may benefit significantly from upgrading to Excel 2007. I have included a chapter discussing the important additions and improvements in Excel 2007 to help you decide if you would benefit from upgrading or you want to continue with the Excel version you are already familiar with.

Users of the first edition of this book will notice that its name has been expanded to include “Financial Analysis” because the book should be equally useful to both those who are interested in financial analysis and those who are interested in financial modeling. In reality, there is little difference between financial analysis and financial modeling. Most Excel spreadsheets that finance people create for financial analysis are actually financial models; they just do not look at them that way. Most people think of financial modeling as something esoteric and complex that is reserved for specialists. But that is not true. You will be able to develop more powerful and useful spreadsheets to do financial analysis if you start viewing them as financial models and applying to them the basic principles of financial modeling. I discuss this in more detail in the first chapter.

I have added several new chapters to cover in more detail topics and Excel features that you can use to develop more powerful models and spreadsheets faster than before. For example, you can use the significantly improved Pivot Table in Excel 2007 to create, in minutes, spreadsheets and models to analyze data that may otherwise take you hours. I have covered Pivot Tables in detail. Similarly, there are now new comprehensive chapters on writing formulas that can make decisions, doing statistical analysis, answering what if questions, finding iterative solutions to problems and so on that show you how to best use Excel’s built-in functions and tools in these areas.

Excel and its built-in programming language Visual Basic for Applications (VBA) remain the premier tools for most financial analysis and modeling. This book will help you learn and improve your financial analysis and modeling skills, making the best use of Excel and VBA.

## From the First Edition

How do you get to Carnegie Hall? You practice, practice, practice.

The same is true of financial modeling. The only way you can learn to develop good financial models is by practicing a lot. Fortunately if you learn and practice modeling the right way, you will not have to practice even one-tenth as hard as a performer does to get to Carnegie Hall.

The primary objectives of this book are to show you how to learn and practice financial modeling the right way and to provide you with a wide range of real-world financial models—over 75 of them—to imitate and use for practice so that you can be on your way to financial modeling’s Carnegie Hall. Financial modeling is an essential skill for finance professionals and students, and Excel and its built-in programming language, Visual Basic for Applications (VBA), are the preferred tools for the job. However, modeling using Excel and VBA is rarely presented as an integrated subject in books or classrooms. The result is that both practitioners and students follow time-consuming trial and error approaches to modeling and end up with models that are not sufficiently flexible and powerful.

This book, designed for self-study, classroom use, and reference, presents a comprehensive approach for developing simple to sophisticated financial models in all major areas of finance using both Excel and VBA. The approach is based on my long experience in the business world developing a wide variety of financial models and in the classroom teaching an MBA course in financial modeling that students find very useful not just in their other course work but in their subsequent professional careers as well.

Developing good financial models requires combining knowledge of finance, mathematics, and Excel and VBA using modeling skill. In each of these areas, the following is what I assume you already know and what you will learn from this book.

In finance and mathematics, I assume that you have the necessary basic knowledge. Nonetheless, in each chapter I have included a review of the theory and concepts you will find useful for working on the models within that chapter. Because I cover a wide range of topics in the book, I think some of this material will be new to you. By immediately applying the newly acquired knowledge to “real world” problems, you will expand your knowledge of finance in some areas in which you may have been interested for some time.

In Excel, I assume you know the basics, and I cover the advanced features of Excel that you need for modeling in detail. You may be amazed to find out how much those whiz kids from Redmond have squeezed into Excel that many of us do not even know about.

VBA will be one of the most important things you learn from this book. I assume that you know nothing about it. VBA is a powerful and very useful tool that people who have Excel already have sitting inside their computers. Unfortunately, very few people use it because they are afraid of learning “programming.” I will teach you VBA and modeling with VBA using a simple class-tested approach. The key is to learn VBA as a language the same way you learned your mother tongue—by imitating how to say things you want to say, without worrying about learning all the rules of grammar or trying to acquire a large vocabulary that you do not need. You will be surprised to find out how little you have to learn to be able to develop models with VBA that are often more useful, powerful, and flexible than Excel models.

Finally, I assume that you are new to modeling. Even if you have some experience, you will quickly find yourself challenged as you build on your skills. You will learn by imitating and practicing on numerous models from all areas of finance, and you will be able to challenge yourself further by developing extensions to these models.

I have not tried to cover every type of financial model that you may need to develop over the years, nor have I tried to cover modeling in depth for one or two particular areas of finance (such as derivatives). The reality—and my assumption—is that once you develop your financial modeling skill and learn to use Excel and VBA well, you will be able to develop models for any problem as long as you know the financial theory and mathematics needed to solve it conceptually. I have therefore focused on helping you develop the skill of financial modeling, and the best way to develop that skill is to work on a broad range of models instead of narrowly focusing on any one area of finance.

The CD that accompanies this book includes complete working versions of all the models in the book. In the text I provide the modeling strategy for each problem, detailed instructions on how to build each model, and thorough analysis of all the VBA codes for the models. I also explain how you can cover the material following different learning tracks depending on your background, how much time you have, and how good you want to become in financial modeling.

The book and the CD also include several special tools (for example, a VBA Quick Reference and a selected list of the most useful Excel and VBA built-in functions) that you can personalize, add to over time, and keep easily accessible on your computer’s hard disk.

Financial modeling is finance in action. It is challenging and it is a lot of fun. I hope this book will show you how to have fun with it and benefit from it at the same time.



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