

# PRINCIPLES OF FINANCE WITH EXCEL

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## CAPITAL BUDGETING AND TIME VALUE OF MONEY

### PRELIMINARY CHAPTERS\*

#### Foreword to the reader

Finance is the study of how to value assets. It is inherently a topic requiring lots of computation. In this book the computation is done in, and illustrated with, Excel, the premier business computational tool. Your knowledge of both finance and Excel will be enhanced by carefully working through the examples and exercises in each chapter.

Finance is a very practical discipline. Most of you will be studying it not only to increase your understanding of the valuation process, but also in order to *get answers to practical problems*. You will find that the extensive computation required in this book will not just enable you to get numerical answers to important problems (though that alone would justify the Excel-centered focus of this book)—it will also deepen your understanding of the concepts involved.

#### What do I expect you to know in Excel?

This book will teach you—alongside with finance—the more advanced Excel concepts needed for finance. However, you should not expect the book to be a complete Excel text. I expect that, before you start your finance course, you will know how to do the following things in Excel [some of these will be covered in book chapters not yet posted]:

- Open and save an Excel workbook
- Use basic Excel functions, for example: **Sum( )** ...
- Format numbers: Here's an example of something I don't usually explain in the text:

	C	D	E	F	G
6	(\$6,144.57)	<-- =PV(10%,10,1000)			
7					
8					
9	-6,144.57	<-- In many cases I prefer this format			

- Using absolute and relative values in copying and formulas

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\* **Notice:** Attached are preliminary drafts of some chapters on capital budgeting from *Principles of Finance with Excel* by Simon Benninga ([benninga@wharton.upenn.edu](mailto:benninga@wharton.upenn.edu)). Check with the author before distributing this draft (though you will probably get permission). Make sure the material is updated before distributing it. There is an accompanying Excel workbook which is available on request. All the material is copyright and the rights belong to the author.

- Graphing—building the basic Excel charts. Especially used in this book: XY charts. You should know how to label axes, put in chart titles, format axes, etc.

### **Advanced Excel concepts**

At some point in the future, I will write and post chapters on the following topics:

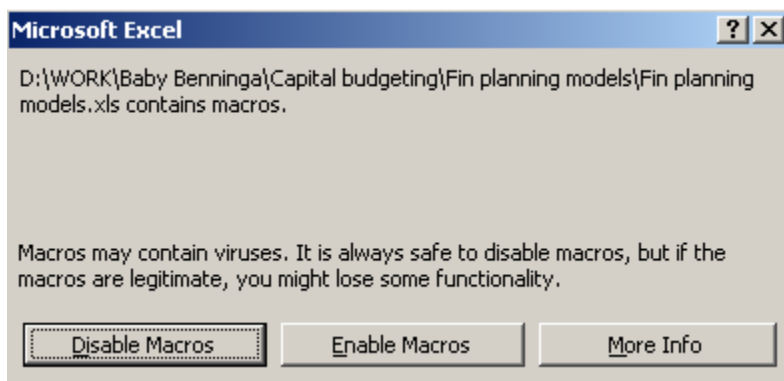
**Data tables:** “Data table” is Excel jargon for “sensitivity table.” The data table technique is a little tricky, but it is well-worth learning (for some reason, data tables are often not covered in introductory Excel courses). In the capital budgeting chapters I have tried to avoid using data tables except where absolutely necessary (one example where you really need data tables is financial planning models, Chapter 6)

### **Dates in Excel**

### **Excel functions**

### **Charts in Excel**

**Attached spreadsheets:** Each chapter is accompanied by a spreadsheet. When you open the spreadsheet you will see the following message informing you that there is a macro attached to the spreadsheet:



This message refers to a macro which dynamically updates cell references, so that output like the following will automatically retain the correct cell references even if I move things around or add rows:

	A	B	C	D
1	<b>CALCULATING PRESENT VALUES WITH EXCEL</b>			
2				
3	X, future payment	100		
4	n, time of future payment	3		
5	r, interest rate	6%		
6	Present value, $X/(1+r)^n$	83.96	<-- =B3/(1+B5)^B4	
7				
8	<b>Proof</b>			
9	Payment today	83.96		
10	Future value in $n$ years	100	<-- =B9*(1+B5)^B4	

You can safely enable this macro.\*\*

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\*\* In the final version of the book, it will be left out of the spreadsheets.