LEVEL I:
ADVANCED FINANCIAL MODELER (AFM)

STUDY GUIDE
2017

Introduction

The Advanced Financial Modeler (AFM) exam is focused on the skills and knowledge required to build a financial model of a company.

This Study Guide document contains four sections and is intended to help AFM candidates to prepare for the exam:

1. Steps to prepare for the AFM exam
2. An eight-week preparatory study guide
3. A summary study table to help gauge study progress
4. Recommended exam day plan

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I. Steps to Prepare for the AFM Exam

1. Overview

1. If you are not a proficient modeler, you may want to take a modeling course from a reputable provider on how to build a financial model of a company. Please see our website for a list of Approved Training Providers.

2. While a good course will cover the steps and process to create a strong financial model, modeling mastery is all about practice. On average, individuals typically devote between 25 and 100 hours (depending on modeling experience) practicing in order to be ready for the exam.

3. Read through and understand all available information about the exam, including exam information available on the FMI website and all pre-exam preparation materials which are provided (including the Body of Knowledge, Technical Skills Checklist, Study Guide, and Sample Exams).

4. As part of your preparation process, you may want to review some of the books that are referenced in this Study Guide and the Body of Knowledge document.

5. Practice building and re-building financial models for different companies (including the sample model provided). It is helpful to focus on individual sections of the model as opposed to everything all at once (see the Eight-Week Preparatory Study Guide below). For example, you should practice building and re-building a complete revenue schedule for a company until you can do it without the help of any study aids or other resources. Once you are comfortable building the revenue schedule, you can move on to practicing the next section of the model.

6. The exam requires you to build a complete financial model of a company within 3.5 hours. If you are studying for the exam by re-building the Sample Model, you will likely want to be able to re-build this model in less than 3.5 hours in order to accommodate for the stress of being in an exam situation, and the fact that you will be writing the exam using a case study which you have not seen before.

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II. Eight-week Preparation Guide

Overall, candidates should apply whatever studying techniques work best for themselves. With that said, the following outlines an eight-week study program for the AFM exam. As noted above, the recommended preparation time will vary between candidates based on financial modeling experience.

1. ## Week 1: Model Planning, Setup and Assumptions

    1. Choose a public company of your preference in a simple industry. Read their most recent annual report
    2. In a new Excel file, re-name the first five tabs: Cover, Summary, Assumptions, Scenarios, and Model
    3. Enter three years of the company's historical financial statements (income statement, cash flow statement, balance sheet) on the Model tab (the historical financial statements will be provided in an Excel spreadsheet during the Exam)
    4. Create the cover tab. Include all relevant information, including the company name, date, etc. Use the sample model as a guide
    5. Think about all of the inputs and assumptions that are needed to forecast this company's financial statements. Enter these variables onto the "Assumptions" tab
    6. Build Scenarios for critical variables

Topics to Understand: model structure, design, and planning, inputs and assumptions, scenario analysis

2. ## Week 2: Revenues

    1. The focus during week 2 is on building a clear revenue schedule to forecast the company's sales
    2. It is recommended to forecast revenue as a function of price and volume as opposed to simply applying a revenue growth rate
    3. Use the sample company as a guide
    4. For your chosen company, think about their prices and volumes and forecast these items into the future
    5. If the company has multiple segments, forecasts and prices and volumes for the largest and most important segments
    6. If the company has small or insignificant segments, these can be grouped into a row called "Other" that you simply grow at an assumed growth rate
    7. Build your revenue schedule by factoring in prices, volumes and any discounts or deductions that might impact the company's revenues
    8. Use the sample model as a guide

Topics to Understand: prices and volumes, gross and net revenues, capacity constraints

3. Week 3: Operating Costs and Depreciation Expense

1. The focus during week 3 is on creating an operating cost schedule that properly captures the company's fixed and variable costs and a depreciation schedule to forecast the company's depreciation expense
2. For your chosen company, think about which of their costs are fixed and which are variable
3. Forecast their variable costs on a per-unit basis and then multiply these costs per unit by their annual sales volume in order to arrive at their total variable costs
4. Using the sample model as a guide, forecast the company's fixed costs on an aggregate basis
5. Properly capturing a company's cost structure will allow you to evaluate their operating leverage (how much profitability changes with changes in revenues)
6. Link the total revenue and total cost lines into the income statement and then calculate gross profit, EBITDA and operating profit on the income statement
7. Review the common methodologies that companies use to depreciate their fixed assets
8. Using the sample model as a guide, calculate the depreciation on existing assets
9. Use a lookup function to display the company's capital expenditures vertically
10. Build a waterfall on the depreciation schedule to calculate the company's depreciation expense on their forecasted capital expenditures

Topics to Understand: fixed and variable operating costs, operating leverage, income statement, depreciation expense methodologies, capital expenditures, capitalizing fixed assets, lookup functions

4. Week 4: Income Tax Expense and Working Capital

1. The focus during this week is on creating a tax schedule to forecast the company's cash tax and deferred tax expense and a working capital schedule to forecast the company's non-interest bearing short term assets and liabilities
2. Forecast depreciation expense using local government rules
3. Calculate pre-tax earnings as they would appear on the accounting statements and on the company's tax return
4. Automate the number of days per period in the forecast using Excel's date functions
5. Calculate the historical days for each of the working capital accounts (ie. days receivable, days inventory, and days payable)
6. Forecast the working capital balances for each account into the future
7. Calculate the company's change in working capital, which will impact the cash flow statement
8. Use the sample model as a guide

Topics to Understand: major timing differences between accounting rules and government rules, with a particular focus on depreciation differences, cash taxes versus deferred taxes, deferred tax liabilities, a company's need for working capital, how to calculate a company's working capital line items into the future, the impact of these line items on cash flow

5. Week 5: Debt, Interest and Shareholders' Equity

1. The focus during this week is on creating schedules to forecast all of the company's debts, interest expense, and shareholders' equity
2. Create a section on the debt schedule for each piece of debt that will appear on the balance sheet
3. Create sections for both short-term and long-term debt
4. Make sure the model includes a section for bank debt (ie. a revolving credit facility) so that the company can access cash in the event of a bad year in the future
5. Calculate the company's total interest expense, and link this interest expense line into the income statement
6. Create a section on the equity schedule for each piece of equity that will appear on the balance sheet, including sections for common shares, preferred shares if applicable, and retained earnings
7. Calculate any dividends on the common and preferred shares and link these lines into the cash flow statement
8. Include a section to calculate shares outstanding that factors in any assumed share issuance and/or repurchases
9. Use the sample model as a guide

Topics to Understand: different types of debt, modeling fixed and variable interest rates, different types of equity, modeling dividends, calculating shares outstanding

6. Week 6: Financial Statements

1. The focus during this week is on forecasting the financial statements for your company so that they are linked and fully integrated
2. Using the schedules that were created in the prior weeks, create the financial statements by linking each line to the appropriate schedule
3. Use the sample model to review all appropriate linkages to create the financial statements
4. Understand circular references and decide whether or not to include circularity in your model

Topics to Understand: the purpose, make-up and creation of each of a company's financial statements, the linkages and interrelationships between the financial statements, model circularity

7. Week 7: Summary Page, Formatting, Presentation and Speed

1. The focus during this week is on creating a summary page to summarize key model outputs and proper formatting to ensure polish and presentation
2. Create a summary table that includes outputs for the base case, best case and worst case scenarios
3. Automate the summary page so that it updates each of the cases automatically whenever changes are made to the model
4. Add automated headers and footers onto each page
5. Set up print ranges so that the model prints nicely and looks like a presentation
6. Review and practice keyboard shortcuts to build the model as quickly as possible

Topics to Understand: creating and automating an effective summary page in the model, formatting a professional and presentable financial model, ensuring a print-ready document

8. Week 8: Model Troubleshooting, Fixing Errors and Avoiding Pitfalls

1. The focus during this week is on troubleshooting a model in order to find and resolve errors
2. Review key skills to check and audit a financial model
3. Understand how to find errors that prevent a balance sheet from balancing
4. Review modeling best practices to ensure a model is built as effectively as possible

Topics to Understand: model auditing and troubleshooting

III. Study Guide Summary Table

1. Weekly Planner

Week	Topic	Start Date	End Date
1	Model Planning, Setup and Assumptions		
2	Revenues		
3	Operating Costs and Depreciation Expense		
4	Income Tax Expense and Working Capital		
5	Debt, Interest and Shareholders' Equity		
6	Financial Statements		
7	Summary Page, Formatting, Presentation and Speed		
8	Model Troubleshooting, Fixing Errors and Avoiding Pitfalls		

If you complete all of the eight weeks of content and you can build a model from a blank spreadsheet in less than 3.5hours, you are ready to write the AFM exam. You can test your preparedness by writing a mock closed-book exam using the Sample Exam after studying the materials in weeks 1 through 8.

IV. Exam Day Plan

1. Strategies on Exam Day

Given the time constraints during the exam, it will be helpful to develop a "game plan" for writing the exam. The following is a suggested plan for exam day:

1. Create a tab for each section of the model you will be required to build (eg. Cover, Summary, Assumptions, Scenarios, Model)
2. Build your cover page immediately to ensure "easy marks"
3. Read the case study and centralize/organize your model assumptions and scenarios using the information provided
4. Build the model in an organised fashion. For example, you can build sections/schedules as needed for the financial statements (eg. starting with the income statement, build a revenue schedule, a cost schedule, etc.)
5. Build the summary section last and ensure it is customized to fit the needs of the case
6. Allow enough time to format the exam in order to maximize your exam score. For example, ensure everything is appropriately labelled, the exam is printable, footnotes are added, etc.
7. Ensure that you are using your time wisely and maximizing your exam score against the marking criteria. For example, if you are running out of time during the exam you may consider preparing a summary section even if your model doesn't balance, since marks will be allocated for the summary

V. Selected Readings

Accounting, Microsoft Excel, and Financial Modeling

- The following represents a list of selected readings to be used as additional reference material. These readings are not mandatory, but meant as supplemental resources to aid in exam preparation.

1. *Building Financial Models* by John Tjia
   a. Chapter 1: A Financial Projection Model
   b. Chapter 2: Best Practices
   c. Chapter 3: Setting the Stage
   d. Chapter 4: Accounting for Modeling
   e. Chapter 5: The Model Building Toolbox: F Keys and Ranges
   f. Chapter 6: The Model Building Toolbox: Functions
   g. Chapter 7: Building a Pilot Model
   h. Chapter 8: Circular References and Iterative Calculations
   i. Chapter 9: Variations on Balancing Plugs
   j. Chapter 10: Preparing to Build a Full Model
   k. Chapter 11: Building an Integrated Financial Model: Part 1
   l. Chapter 12: The Cash Flow Statement
   m. Chapter 13: The Cash Sweep
   n. Chapter 15: Forecasting Guidelines
   o. Chapter 19: Tips and Tricks

2. *Crunch The Numbers - Accounting Fundamentals* by AdkinsMatchett&Toy
   a. Chapter 1: Introduction
   b. Chapter 2: Revenues and Costs
   c. Chapter 3: What is Working Capital?
   d. Chapter 4: What are Non-Current Assets?
   e. Chapter 5: The Sources of Funding
   f. Chapter 6: Organizing the Cash Flows

3. *Crunch The Numbers – Modeling* by AdkinsMatchett&Toy
   a. Chapter 1: Introduction
   b. Chapter 2: Modeling Basics
   c. Chapter 3: Setting up the Model Templates
   d. Chapter 4: Input Historical Numbers
   e. Chapter 5: Calculating Ratios and Building Assumptions
   f. Chapter 6: Projecting the Income Statement
   g. Chapter 7: Projecting the Balance Sheet
   h. Chapter 8: Balancing the Balance Sheet
   i. Chapter 9: Interest Income and Interest Expense

4. *Excel 2016 Bible* by Walkenbach
   a. Chapter 1: Introducing Excel
   b. Chapter 2: Entering and Editing Worksheet Data
   c. Chapter 3: Essential Worksheet Operations
   d. Chapter 4: Working with Cells and Ranges
   e. Chapter 6: Worksheet Formatting
   f. Chapter 7: Understanding Excel Files
   g. Chapter 8: Using and Creating Templates
   h. Chapter 9: Printing Your Work
   i. Chapter 10: Introducing Formulas and Functions
   j. Chapter 11: Creating Formulas That Manipulate Text
   k. Chapter 12: Working with Dates and Times
   l. Chapter 13: Creating Formulas That Count and Sum
   m. Chapter 14: Creating Formulas That Look Up Values
   n. Chapter 15: Creating Formulas for Financial Applications
   o. Chapter 16: Miscellaneous Calculations
   p. Chapter 24: Customizing the Excel User Interface
   q. Chapter 25: Using Custom Number Formats
   r. Chapter 27: Creating and Using Worksheet Outlines
   s. Chapter 29: Excel and the Internet
   t. Chapter 30: Protecting Your Work
   u. Chapter 31: Making Your Worksheets Error Free
   v. Appendix A: Worksheet Function Reference
   w. Appendix B: Excel Shortcut Keys

5. *Financial Accounting: An Introduction to Concepts, Methods and* **Uses** by Schipper, Francis, Weil, Stickney
   a. Part 1: Overview of Financial Statements
   b. Part 2: Accounting Concepts and Methods
   c. Part 3: Measuring and Reporting Assets and Equities Using Generally Accepted Accounting Principles
   d. Part 4: Synthesis

6. *Financial and Managerial Accounting* by Warren, Reeve, Duchac
   a. Chapter 1: Introduction to Accounting and Business
   b. Chapter 2: Analyzing Transactions
   c. Chapter 3: The Adjusting Process
   d. Chapter 4: Completing the Accounting Cycle
   e. Chapter 5: Accounting for Merchandising Businesses
   f. Chapter 6: Inventories
   g. Chapter 8: Receivables
   h. Chapter 9: Fixed Assets and Intangible Assets
   i. Chapter 10: Current Liabilities and Payroll
   j. Chapter 11: Corporations: Organization, Stock Transactions, and Dividends
   k. Chapter 12: Long-term Liabilities: Bonds and Notes
   l. Chapter 14: Statement of Cash Flows
   m. Chapter 19: Cost Behaviour and Cost-Volume-Profit Analysis

7. *Financial Modeling and Valuation: A Practical Guide to Investment Banking and Private Equity* by Paul Pignataro
   a. Part One: Financial Statements and Projections

8. *Financial Modeling in Excel For Dummies* by Danielle Stein Fairhurst
   a. Chapter 1: Introducing Financial Modeling
   b. Chapter 2: Getting Acquainted with Excel
   c. Chapter 3: Planning and Design Your Financial Model
   d. Chapter 4: Building a Financial Model by the Rulebook
   e. Chapter 5: Using Someone Else's Financial Model
   f. Chapter 6: Excel Tools and Techniques for Financial Modeling
   g. Chapter 7: Using Functions in Excel
   h. Chapter 8: Applying Scenarios to Your Financial Model
   i. Chapter 9: Charting and Presenting Model Output
   j. Chapter 10: Building an Integrated Financial Statements Model
   k. Chapter 12: Budgeting for Capital Expenditure and Depreciation
   l. Chapter 13: Ten Strategies for Reducing Error
   m. Chapter 14: Ten Common Pitfalls to Avoid

9. *Financial Statements: A Step-by-Step Guide to Understanding and Creating Financial Reports* by Ittelson
   a. Section A: Financial Statements: Structure & Vocabulary

10. ***Using Excel for Business Analysis: A Guide to Financial Modelling Fundamentals*** by Danielle Stein Fairhurst
    a. Chapter 1: What is Financial Modeling
    b. Chapter 2: Building a Model
    c. Chapter 3: Best Practice Principles of Modeling
    d. Chapter 4: Financial Modeling Techniques
    e. Chapter 5: Using Excel in Financial Modeling
    f. Chapter 6: Functions for Financial Modeling
    g. Chapter 7: Tools for Model Display
    h. Chapter 8: Tools for Financial Modeling
    i. Chapter 9: Common Uses of Tools in Financial Modeling
    j. Chapter 10: Model Review
    k. Chapter 11: Stress-Testing, Scenarios and Sensitivity Analysis in Financial Modeling
    l. Chapter 12: Presenting Model Output

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We are dedicated to global excellence in Financial Modeling and recognized certifications.