FIN 470 – Financial Analysis in Excel

Individual Capstone Project

Project Instructions and Grading Rubric

Part I: Project Instructions

Overview

The capstone project is your opportunity to demonstrate mastery of both financial theory and Excel-based analytical techniques. You will identify a substantive problem or question in finance, develop a rigorous analytical framework grounded in established financial theory, and implement your analysis using advanced Excel tools and methods. The project should reflect the depth and technical sophistication appropriate to an upper-division finance course.

You have wide latitude in selecting your topic. Projects may involve valuation, forecasting, risk analysis, portfolio construction, capital budgeting, fixed-income analytics, derivatives pricing, financial statement analysis, or any other recognized area of finance. What matters is that your work integrates sound financial reasoning with technically proficient Excel implementation.

Project Requirements

Your project must satisfy each of the following requirements.

1. **Financial Foundation.** Your project must be grounded in an identifiable area of financial theory or methodology. You should articulate the financial concepts driving your analysis and explain why the chosen approach is appropriate for the problem at hand.
2. **Excel Implementation.** Your analysis must be implemented in one Excel workbook. The workbook should demonstrate sophisticated use of Excel features and go well beyond basic formulas and formatting. Examples of advanced techniques include, but are not limited to: dynamic named ranges, data validation, array formulas, Solver optimization, Goal Seek, scenario analysis with data tables, conditional formatting for dashboards, pivot tables, VBA macros or user-defined functions, Power Query, and advanced charting.
3. **Excel Spreadsheet.** Submit an Excel spreadsheet in D2L that implements your model. Be sure to include comments that explain the financial theory and methodology, the Excel implementation and the techniques employed. You may only submit one Excel file.

Deliverables

You will submit two items through D2L by the posted deadlines.

a. Excel workbook containing your complete analysis. All formulas, macros, and data connections must be intact and functional.

b. A brief project proposal, due at the posted earlier deadline, consisting of a one-paragraph description of your intended topic, the financial framework you plan to apply, and the Excel techniques you anticipate using.

Tips for a Strong Project

- Choose a topic that genuinely interests you. Depth and engagement matter more than selecting a topic you think will impress.
- Start early. The proposal deadline exists to help you commit to a direction and get feedback before investing significant effort.
- Prioritize depth over breadth. A thorough analysis of a focused question is far more valuable than a superficial treatment of a broad topic.
- Think creatively about Excel. The rubric rewards innovation. Look for opportunities to use Excel features in ways that go beyond textbook examples.
- Proofread and test. Before submitting, ensure all formulas work, all charts display correctly, and your written report is free of errors.

Part II: Grading Rubric

The project is worth 100 points, divided equally between two sections. Each section contains multiple criteria with specified point values. The descriptions below indicate the standard for full credit; partial credit will be awarded proportionally based on the degree to which work meets the stated standard.

Section A: Financial Theory and Methodologies (50 Points)

Criterion	Description	Points
Problem Definition	The financial problem or question is clearly stated, well-motivated, and situated within an appropriate area of finance. The significance of the problem is convincingly articulated.	10
Theoretical Framework	The project demonstrates a sound understanding of the relevant financial theory. Key concepts, models, and assumptions are correctly explained and appropriately applied to the chosen problem.	10
Methodology and Approach	The analytical methodology is appropriate for the stated problem. The student explains why the chosen approach is suitable and identifies alternatives that were considered.	10
Results and Interpretation	Results are clearly presented, correctly interpreted in light of the underlying financial theory, and supported by evidence from the analysis. Conclusions follow logically from the data.	10
Limitations and Assumptions	The student identifies key assumptions and limitations of the financial model or approach, discusses their impact on the validity of results, and proposes potential remedies or extensions.	10

Section B: Excel Implementation and Technical Sophistication (50 Points)

Criterion	Description	Points
Technical Sophistication	The workbook employs advanced Excel features beyond basic formulas and formatting. Techniques are appropriate to the complexity of the financial problem and are implemented correctly.	10
Innovation and Creativity	The student demonstrates creative or original use of Excel tools, whether through novel combinations of features, elegant solutions to analytical challenges, or inventive dashboard and visualization design.	10
Quality of Integration	Excel tools are not used in isolation but are meaningfully integrated into a cohesive analytical workflow. Data flows logically between worksheets, and the workbook functions as a unified analytical instrument.	10
Documentation of Methods	A clear technical appendix or section catalogs the Excel tools and functions used, explains the rationale for each,	10

	and provides sufficient detail that another competent Excel user could reproduce the analysis.	
Workbook Organization	The workbook is well-organized with clear labeling, logical worksheet structure, consistent formatting, and appropriate use of cell comments or documentation. The workbook conforms to course Excel guidelines.	10

Score Summary

Section	Points
A: Financial Theory	/50
B: Excel Implementation	/50
Total	**/100**

Part III: Sample Project Ideas

The following examples illustrate the range of acceptable project topics and approaches. These are suggestions only; you are encouraged to develop your own topic in consultation with the instructor. Each example can be adapted, combined with other ideas, or taken in a different direction.

#	Project Title	Brief Description
1	**DCF Valuation Model**	Build a discounted cash flow model for a publicly traded company with scenario analysis using data tables and Solver-optimized assumptions.
2	**Bond Portfolio Duration Manager**	Construct a fixed-income portfolio tool that calculates duration, convexity, and immunization strategies with dynamic rebalancing.
3	**Monte Carlo Capital Budgeting**	Implement a Monte Carlo simulation in Excel to evaluate a capital investment under uncertainty, using VBA to automate iteration.
4	**Efficient Frontier Calculator**	Build a portfolio optimization tool that computes the efficient frontier for a set of assets using Solver and matrix algebra functions.
5	**Options Pricing Workbook**	Implement Black-Scholes and binomial tree models with sensitivity analysis across volatility and time parameters.
6	**Financial Ratio Dashboard**	Create an interactive dashboard that pulls financial statement data, computes key ratios, and benchmarks performance against industry peers.
7	**Loan Amortization Analyzer**	Develop a comprehensive amortization tool with variable rate support, prepayment scenarios, and total cost comparison charts.
8	**Sales Forecasting System**	Build a time series forecasting model using moving averages, exponential smoothing, and trend-cycle decomposition with accuracy metrics.
9	**Merger Accretion-Dilution Model**	Analyze the earnings impact of a hypothetical acquisition using pro forma income statement projections and sensitivity analysis.
10	**Value-at-Risk Calculator**	Implement parametric VaR, historical simulation, and stress testing for a multi-asset portfolio with conditional formatting alerts.
11	**Real Estate Investment Analyzer**	Model cash flows, cap rates, and internal rates of return for a commercial property investment with leverage scenarios.
12	**Credit Risk Scoring Model**	Build a scoring model using weighted financial ratios to assess the creditworthiness of corporate borrowers with data validation controls.
13	**Break-Even and Sensitivity Tool**	Create a dynamic break-even analysis with multi-variable sensitivity tables, tornado charts, and scenario manager integration.

14	**Foreign Exchange Hedging Model**	Model currency exposure for a multinational firm and evaluate hedging strategies using forwards, options payoff diagrams, and cost analysis.
15	**Retirement Planning Calculator**	Build a comprehensive retirement model with variable contribution rates, inflation adjustment, Social Security integration, and Monte Carlo longevity risk.
16	**Working Capital Optimizer**	Analyze accounts receivable, inventory, and payable cycles with Goal Seek to identify optimal working capital targets.
17	**Cost of Capital Estimator**	Compute WACC using CAPM beta estimation, debt yield analysis, and capital structure sensitivity with automated data retrieval.
18	**Technical Trading Backtester**	Implement and backtest moving average crossover and RSI strategies on historical price data with performance metrics and equity curves.
19	**Financial Statement Forecaster**	Build a three-statement pro forma model with linked income statement, balance sheet, and cash flow projections driven by revenue assumptions.
20	**Lease vs. Buy Decision Model**	Compare the net present value of leasing versus purchasing an asset under multiple scenarios with tax implications and residual value analysis.
21	**Dividend Discount Model Suite**	Implement Gordon growth, two-stage, and H-model dividend discount approaches with comparative valuation output and sensitivity charts.
22	**Insurance Portfolio Analyzer**	Model expected losses, premiums, and loss ratios across multiple lines of insurance with pivot table summaries and conditional risk alerts.
23	**Startup Financial Model**	Construct a five-year financial projection for a startup including revenue ramp, burn rate, funding rounds, and dilution analysis.
24	**Sovereign Debt Comparison Tool**	Compare yield curves, debt-to-GDP ratios, and credit spreads across multiple countries with dynamic charts and Power Query data import.
25	**Personal Budget and Net Worth Tracker**	Build a comprehensive personal finance workbook with income and expense tracking, net worth calculation, savings goal progress, and visual dashboards.