

MSFA AY 2016-2017 Assessment

Phase 1: Assessment Plan

Learning Outcome assessed:

1-1 Analytical Tools

Finance Employ fundamental quantitative techniques essential in financial analysis and investment management including (i) the time value of money, (ii) the basics of statistics and probability theory, (iii) probability theory applied in the field of investment valuation and financial risk management, and (iv) joint behavior of two or more variables, including correlation and linear regression.

Assessment Method:

Midterm Exam

Targeted performance, based on rubrics:

80% of students will score 15/20 (75%) on exam.

Evaluation Process:

Exam question with open-ended question. 67 students evaluated.

Rubric:

Test key

Course where learning outcome was assessed:

MSFA 714-40, Corporate Finance

Evaluator(s):

Torben Voetmann

Phase 2: Results Assessment and Planned Action

Results:

Scores on the problem were as follows:

18-20 (90% or >)	15-17 (75-85%)	<15 (<75%)
42	13	12

82% of 67 students achieved “satisfactory level” on test.

Suggested Action:

Performance goals on the time value of money attained, however, room to improve understanding of this concept in the lower tail of the class. As this is a fundamental skill, planned action is to provide more opportunities to practice and feedback in assigned problems.

Phase 3: Closing the Loop

We will continue to assess this LOS using a targeted question on a required midterm. We consider this the best way to measure student understanding on this fundamental concept as early as possible in the program.

Problem 3 (20 Points)

Nicole just completed her undergraduate degree from the University of San Francisco. She is planning on entering an MBA program four years from today. The tuition will be \$25,000 per year for two years, paid at the beginning of each year. In addition, Nicole would like to retire 15 years from today and receive a pension of \$80,000 for 20 years with the first payment being received 15 years from today. Nicole can borrow and lend as much as she likes at a stated annual interest rate (SAIR) of 7%, compounded annually. In order to fund her expenditures, Nicole will save money both (1) in the years before entering graduate school, starting one year from today, and (2) during the time she is working. In other words, Nicole will save at the end of years 1-3 and at the end of years 6-14.

- a) Calculate the **constant annual dollar amount** that Nicole must save at each of these times to cover all of her expenditures (tuition and retirement)?

Answer:

$$\text{PV}(\text{Savings 1-3}) = C \cdot \left(\frac{1}{0.07} - \frac{1}{0.07 \cdot (1.07)^3} \right) = C \cdot 2.6243 \text{ (4 points)}$$

$$\text{PV}(\text{Savings 6-14}) = C \cdot \left(\frac{1}{0.07} - \frac{1}{0.07 \cdot (1.07)^9} \right) \cdot (1.07)^{-5} = C \cdot 4.6453 \text{ (4 points)}$$

$$\text{PV}(\text{Tuition}) = -\$25,000 \cdot (1.07)^{-4} + -\$25,000 \cdot (1.07)^{-5} = -\$36,987 \text{ (4 points)}$$

$$\text{PV}(\text{Pension}) = -60,000 \cdot \left(\frac{1}{0.07} - \frac{1}{0.07 \cdot (1.07)^{20}} \right) \cdot (1.07)^{-14} = -\$328,683 \text{ (4 points)}$$

Solve for **C** (the annual constant payment)

$$C = (36,987 + 328,683) / (2.6243 + 4.6453) = \mathbf{\$50,289} \text{ (4 points)}$$