25/03 600 FINANCIAL DATA
Group Discussion
Course Overview
M1: Fixed Income Data
M2: Equities and Cryptocurrencies
M3: Working with Portfolios and Tick Data
M4: Alternative Data
M5: News Data and Sentiment Analysis
M6: Geospatial and Satellite Data
M7: Integrating Ethics and Critical Thinking with Financial Data
FD Forum M7
END OF COURSE SURVEY
End of Course Survey
LESSON 1: CLIMATE DATA
Required Readings
Lesson Notes
LESSON 2: MATRIX NORMALIZATION AND SPARSE CLIMATE DATA COMPRESSION
Lesson Notes
LESSON 3: NUMERICAL METHODS FOR DATA PREPARATION AND STATISTICAL ANALYSIS
Lesson Notes
LESSON 4: NUMERICAL METHODS FOR CORE MODELING, MODEL REFINEMENT, AND FINDING OPTIMAL SOLUTIONS
Lesson Notes
ASSESSMENTS
FD Group Work Project 2 M7
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FD Graded Quiz M7

Time left: 22:16

QUESTIONS

1 2 3 4 5
6 7 8 9 10
11 12 13 14 15
16

Question 1

What is described as the key limitation when students focus solely on one technical aspect?

- ○ They produce incorrect mathematical derivations
- ○ They write code that doesn't compile
- ◉ They fail to connect how the methodology solves previously unsolved problems or improves existing solutions
- ○ They create inefficient algorithms

Question 2

For a dataset with mean = 15, standard deviation = 3, and x = 21, what is the z-score?

- ○ 1.5
- ◉ 2
- ○ 1
- ○ 2.5

Question 3

What is the primary advantage of using reanalysis data over direct observations?

- ○ It reduces the cost of data collection
- ◉ It provides consistent global coverage without spatial or temporal gaps
- ○ It provides more focused temperature readings on a region
- ○ It eliminates the need for weather stations

Question 4

What is the primary purpose of using cubic spline fitting in yield curve analysis?

- ○ To eliminate outliers in yield data
- ○ To predict future interest rates
- ○ To calculate bond duration
- ◉ To estimate missing yield information while maintaining curve smoothness

Question 5

Which approach would best integrate multiple normalization methods for a climate dataset?

- ◉ Select specific methods based on each variable's characteristics
- ○ Apply all methods sequentially
- ○ Use the average of all methods
- ○ Randomly assign methods to variables

Question 6

How would you calculate the adjusted closing price given a 2-for-1 stock split and a $1 dividend?

- ○ Only subtract the dividend
- ○ Only divide the closing price by 2

- ○ Only divide the closing price by 2
- ○ Multiply the closing price by 2 and add the dividend
- ◉ Divide the closing price by 2 and subtract the dividend

Question 7

In the context of GARCH models, what is being regressed?

- ◉ Today's volatility using yesterday's volatility and squared return
- ○ Today's price using yesterday's price
- ○ Today's return using yesterday's return
- ○ Today's volume using yesterday's volume

Question 8

For a 30-day rolling window, if the mean is 20 and std is 5, what is the normalized value for x = 25?

- ○ 2
- ○ 0.5
- ○ 1.5
- ◉ 1

Question 9

What is the key benefit of incorporating climate data into financial analysis?

- ○ It guarantees higher investment returns
- ○ It simplifies investment decision-making
- ◉ It helps identify and manage climate-related risks and opportunities in investments
- ○ It eliminates the need for traditional financial metrics

Question 10

In the context of outlier detection in financial time series, what is the most robust approach for identifying extreme values?

- ◉ Combine statistical measures, domain expertise, and diagnostic plots
- ○ Remove all data points beyond 3 sigma
- ○ Apply simple moving averages
- ○ Use only standard deviation thresholds

Question 11

What factors should be considered when choosing between different normalization methods?

- ○ Only the sample size
- ○ Only the data distribution
- ○ Just the presence of outliers
- ◉ Data distribution, presence of outliers, and intended analysis method

Question 12

What transformation would you apply to create a volume-weighted average price (VWAP)?

- ○ Sum of Price times Sum of Volume
- ○ Average of Price divided by Volume
- ◉ Sum of (Price × Volume) divided by Total Volume
- ○ Median of Price weighted by Volume

Question 13

What approach would you take to implement a robust debugging system for a financial model?

- ○ Compare with other models only
- ○ Run the model multiple times
- ◉ Implement systematic checks for financial constraints and mathematical consistency
- ○ Add print statements throughout the code

Question 14

Calculate the column ID for a value in position (2, 3) in a 5x5 matrix.

- ○ 1
- ○ 2
- ○ 4
- ◉ 3

Question 15

How does reanalysis improve the quality of climate data?

- ○ It combines historical observations with forecasted data to fill gaps and provide consistent global coverage
- ○ It only uses satellite data to eliminate ground station errors
- ◉ It removes all inconsistencies from historical data
- ○ It replaces observed data with modeled data completely

Question 16

How would you develop a comprehensive factor model for portfolio risk assessment?

- ○ Apply single-factor CAPM model
- ○ Use only market factors
- ○ Rely solely on historical correlations
- ◉ Combine PCA, fundamental factors, and statistical factors with cross-validation

SUBMIT