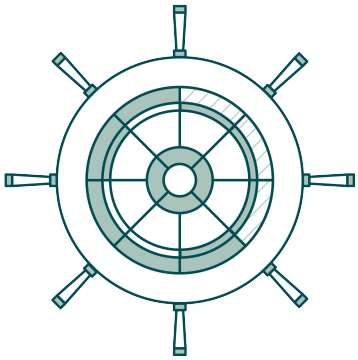

CMT LEVEL III

2019 Learning Objective Statements

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Level III. The Integration of Technical Analysis

Section One: Risk Management

1 System Design and Testing

Assess the value and challenges of using a system for trading or investing
Compare and analyze differences between discretionary and nondiscretionary systems
Evaluate the mind-set and discipline required to develop and trade with a system
Organize the basic procedures for designing a system
Inventory types of technical trading systems
Defend the necessity of risk management protocols in a trading system
Examine critical aspects of performing system tests
Compare and evaluate standard measures of system profitability and risk
Differentiate between various methods of optimization

2 Money and Portfolio Risk Management

Distinguish between trading strategies and money-management strategies
Evaluate the significance of the theory of runs and a martingale strategy
Model position size using risk of ruin and optimal f methods
Differentiate between diversifiable and correlated risk
Compare and analyze the various types of stops used to manage risk
Assess the minimum capital needed for trading a system

3 System Evaluation and Testing

Choose factors for system testing including objectives, parameters and test data
Assess the use of in-sample and out-of-sample data
Evaluate optimized test results for continuity and significance
Explain the basics of using genetic algorithms
Illustrate the concept of robustness in a trading system
Critique the use of performance and risk metrics based on a given objective

4 Practical Considerations

Plan for system development and testing: data, techniques, and initial evaluation of results
Assess the impact of runs and martingales on a trading system
Evaluate the trade-offs between trend-following and mean-reverting systems

5 Risk Control

Compare risk and performance metrics derived from the following: Sharpe Ratio, Information Ratio, Treynor Ratio, Calmar Ratio, Sortino Ratio
Interpret calculations of Value at Risk (VaR)
Compare various methods for setting stops and profit targets
Compare approaches to compounding positions
Calculate the risk of ruin
Calculate optimal f

6 Statistical Analysis

Assess random and nonrandom trends in trading system performance
Examine sampling and sample statistics in trading
Calculate relative frequency
Organize six elements of a statistical inference problem
Differentiate between theoretical and empirical probabilities
Derive a sampling distribution

7 Hypothesis Tests and Confidence Intervals

Differentiate between necessary and sufficient conditions
Compare the assertions of the null and alternative hypotheses
Defend why the null hypothesis should be framed as the target of a test

Section Two: Asset Relationships

8 Regression

Assess values generated by regression, multiple regression and tolerance calculations
Select meaningful predictor variables for multiple regression studies

9 International Indices and Commodities

Inventory the various indexes and markets discussed
Evaluate the intermarket relationships among the indexes and markets discussed

10 The S&P 500

Compare general correlations among the S&P 500, international indexes and other markets discussed

11 European Indices

Compare general correlations among international indexes, stocks and other markets discussed

12 Gold

Compare general correlations among gold, dollar, stocks and indexes

13 Intraday Correlations

Appraise correlation characteristics in various timeframes among the index futures discussed

14 Intermarket Indicators

Construct relative strength studies and evaluate the results
Compare intermarket indicators described in this chapter
Prepare recommendations based on asset correlation data

15 A Unique Way to Visualize Relative Strength

Appraise the trend and momentum of relative strength using Relative Rotation Graphs (RRG)
Assess relative strength using the indicators derived from the RRG concept

Section Three: Portfolio Management

16 Fact, Fiction and Momentum Investing

Defend the use of momentum strategies using historical data
Argue against common myths about momentum strategies

17 Analyzing the Macro-Finance Environment

Model the business cycle, the financial cycle and their relationship
Assemble a sector rotation model based on the business and financial cycles
Identify leading, coincident, and lagging indicators of economic activity

18 Portfolio Risk and Performance Attribution

Assess the statement "total risk = volatility = standard deviation of returns"
Interpret three formulations of total risk
Defend the assertion that "diversification reduces only firm-specific risk"
Discuss beta and its role in assessing portfolio risk
Employ the Sharpe and Treynor ratios for individual stocks and portfolios

Section Four: Behavioral Finance

19 Behavioral Biases

Distinguish between two types of biases: cognitive and emotional
Build a table of cognitive and emotional biases, their manifestations and ways to address them

20 Investor Psychology

Inventory general behavioral aspects that impact price action
Model behavioral elements that contribute to the development of chart patterns
Model behavioral elements that contribute to the persistence of trends
Model behavioral elements that contribute to periods of consolidation
Model behavioral elements that contribute to trend reversals

21 Are Two Heads Better than One?

Assess the negative consequences of group/committee decision making
Organize approaches to mitigating the effects of group biases

22 The Anatomy of a Bubble

Model the five stages of a bubble

23 De-Bubbling: Alpha Generation

Assess the three cross-section strategies that should benefit from a de-bubbling/deflationary period

24 Behavioral Techniques

Evaluate market reactions to events: planned news releases versus price shocks
Estimate reactions to events using the volatility ratio
Assemble a COT Index and a COT Sentiment Index from Commitments of Traders (COT) data

Section Five: Volatility Analysis

25 The VIX as a Stock Market Indicator
Compare movement in the VIX and the S&P 500
Evaluate VIX and VIX futures price relationships for signals
Formulate market forecasts that include volatility as an input

26 Hedging with VIX Derivatives
Defend the rationale behind hedging with VIX products
Propose hedge strategies using VIX options and futures

27 Advanced Techniques
Analyze the relationship between price and volatility
Inventory several measures of volatility
Model profit targets and stop-loss levels using volatility
Propose methods for filtering a system's signals based on volatility
Assess how fractal, chaos, and entropy concepts may be applied to trading
Explain the basics of using neural networks
Explain the basics of using genetic algorithms

Section Six: Classical Methods

28 Pattern Recognition
Compare pivot points and DeMark's calculations for price ranges
Examine intraday data for idiosyncratic patterns in stocks and currencies
Assess the use of opening gaps as trading signals

29 Multiple Time Frames
Evaluate chart data using Elder's, Krausz's and Pring's multiple time-frame methods
Inventory Krausz's six rules

30 Candlestick Analysis
Evaluate the strengths and weaknesses of candlestick charts
Categorize reversal and continuation candlestick patterns
Interpret the nine important price action guidelines
Appraise the significance of various Japanese candlestick patterns to pinpoint reversals and breakouts
Integrate candlestick charts with other technical studies

31 Progressive Charting
Evaluate candle patterns as they develop in a chart
Compose responses to the four questions posed at the outset of the chapter

32 Bringing it All Together: Real-World Charts
Predict likely price action based on candlestick patterns and the overall context of the price action
Propose entry and exit points based on patterns, price action, and risk
Assess trend persistence based on candlestick patterns and the overall context of the price action

33 Conclusions
Assess the validity of the 12 major conclusions about technical analysis the authors present
Defend the use of technical analysis when properly employed in a variety of market environments

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