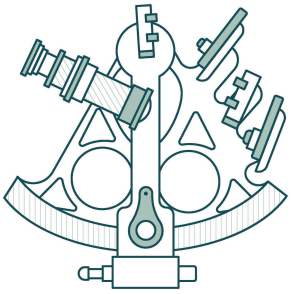

CMT LEVEL II

2020

Learning Objective Statements

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Level II. Theory and Analysis

Section One: Chart Development and Analysis

1 Charting

Explain the six basic tenets of Dow Theory
Diagram the three phases of bull and bear markets
Differentiate between primary, secondary, and minor trends
Examine a chart for support and resistance
Demonstrate the use of trendlines in identifying trends, support and resistance, and channels
Interpret trend signals using trendlines
Compare different types of gaps and their significance
Contrast various continuation patterns and reversal patterns
Draw examples of various top formations and bottom formations
Apply price objectives to various chart patterns and trend breakouts
Interpret candlestick formations for signals

2 Moving Averages

Contrast various types of moving averages used in trend analysis
Illustrate four ways moving averages are used by technicians
Analyze trend movement using Directional Movement Indicators
Compare common envelope, channel, and band indicators

3 Time-Based Trend Calculations

Examine methods for forecasting price direction
Calculate a simple approach to momentum
Inventory various weighting methods for moving averages
Explain the drop-off effect and its impact on technical indicators

4 Trend Systems Part 1

Explain three reasons why trend systems work
Demonstrate appropriate asset selections based on trend and forecast
Diagram how buy and sell signals are used with indicators and tools for measuring trend, such as: Moving Averages, Bollinger Bands, Keltner Channels, Percentage Bands, Volatility Bands, and combinations of bands and other indicators
Illustrate use of the 10-day moving average rule in a trading system

5 Trend Systems Part 2

Analyze how a trader or investor would go about selecting the right moving average, trend method, and speed
Compare the role of each moving average in a two-trend or three-trend method of trading
Contrast two general rules for generating an exit signal when using moving averages, and explain which one of the two is considered better than the other
Describe the “Golden Cross” and the “Death Cross”

6 Momentum and Oscillators

Differentiate between momentum and rate of change studies in technical analysis
Distinguish among various calculations of momentum
Demonstrate use of momentum for trend indication and associated signals
Demonstrate use of momentum for finding price extremes and associated signals
Illustrate the use of MACD to generate trading signals
Compare various oscillators and their trading signals including RSI, stochastics, and TRIX

7 Volume, Open Interest, and Breadth

Use standard interpretation of volume and open interest in the context of price trends in stocks and futures
Compare various volume indicators such as On-Balance Volume, Accumulation Distribution, and VWAP
Analyze changes in breadth in the context of price trends
Interpret breadth indicators such as the McClellan Oscillator
Interpret indicators that combine breadth with volume such as Arms Index and Thrust Oscillator
Examine approaches to incorporating volume and breadth into systematic methods

8 Bar Chart Patterns

Critique the controversy over whether tradeable patterns exist in technical analysis
Discuss the influence that computer technology has had on the study of patterns
Diagram classic chart patterns such as triangles, and double and triple tops and bottoms
Draw rounding chart patterns such as head-and-shoulders
Illustrate "half-mast" chart patterns such as flags and pennants
Demonstrate methods for determining price objectives from patterns

9 Short Term Patterns

Analyze reversals in longer-term trends using short-term price patterns
Interpret the significance of various types of gaps that occur on price charts
Compare and analyze wide-range and narrow-range bars and their implications for volatility
Diagram one- and two-bar reversal patterns
Draw common candlestick patterns and analyze their significance within a trend

10 Single Candle Lines

Interpret market psychology from candle shapes
Diagram and interpret notable individual candles: hammer, hanging man, doji and others in this chapter
Demonstrate the importance of such candles in the context of trends
Differentiate between the buying and selling activity represented by real bodies and shadows in these candles

11 Multi-Candle Patterns

Diagram and interpret notable patterns formed by multiple candles: engulfing, stars, windows and others in this chapter
Demonstrate the importance of the prevailing trend when interpreting candle patterns
Differentiate between the buying and selling activity represented by real bodies and shadows in these candle patterns
Interpret candle patterns for support and resistance

12 Candle Pattern Forecasting and Trading Techniques

Analyze candle patterns on charts for indications of trend reversal and continuation
Interpret candle patterns for support and resistance indications and confirmation
Illustrate how to combine Western technical indicators with candles
Employ candlestick analysis for risk management
Demonstrate using candles in multiple time frames

13 Concepts in Cycle Theory

Illustrate the causes of the "mid-cycle dip" and "3/4 cycle high"
Analyze the implications of an inversion
Examine the cyclical explanation for rounded tops and "V-bottoms"
Interpret the implications of left and right translation
Calculate a centered moving average (CMA) envelope
Demonstrate the use of a valid trend line (VTL)

14 Applied Cycle Analysis

Diagram the steps to a comprehensive cycle analysis
Differentiate tools that find cycles from tools that phase cycles
Illustrate how to identify a dominant cycle with a spectrogram
Compare the phasing of smaller harmonics to larger harmonics

Section Two: Volatility Measures in Today's Financial Markets

15 Options

Explain the purpose of options markets
List the major terms of an option contract
Describe "the Greeks"
Define implied volatility

16 Understanding Implied Volatility

Contrast historical and implied volatility when used in price analysis and forecasting
Interpret implied volatility as the market's estimate of possible future asset prices
Calculate single-day implied volatility
List the inputs to an option pricing model

17 About the VIX Index

Explain how the VIX is impacted by put-call parity and options supply
Interpret the VIX as an indication of market sentiment
Interpret changes in the VIX as part of a market forecast
Calculate expected 30-day movement of an index or a stock

Section Three: Topics in Behavioral Finance

18 Prospect Theory

Compare utility theory and prospect theory
Describe loss aversion
Describe the single greatest limitation of prospect theory

19 Perception Biases

Describe each of the four perception biases covered in this chapter
Illustrate how each of these biases might affect investor behavior

20 Inertial Effects

Describe each of the three inertial effects covered in this chapter
Illustrate how each of these might affect investor behavior

21 Analyzing Sentiment in the Stock Market

Analyze the impact of insider activity on a security's price action
Compare insider buying vs insider selling
Analyze short interest and the short interest ratio
Interpret sentiment as drawn from surveys of investors and professionals

22 Analyzing Sentiment in Derivatives Markets

Interpret changes in futures open interest in the context of price action
Analyze the Commitments of Traders report
Employ options put/call ratios as sentiment indicators
Interpret volatility data drawn from the options market

Section Four: Statistical Applications for Technical Analysts

23 Inferential Statistics

Compare descriptive and inferential statistics
Demonstrate the use of hypothesis testing to frame statistical tests
Explain confidence intervals, statistical significance and the base rate fallacy
Compare coefficients of correlation and determination
Differentiate between correlation and causation
Examine the use of regression analysis in technical studies

24 Correlation

Compare Pearson's and Spearman's methods
Describe the importance of linearity and normality to useful correlation studies
Analyze the effect of outliers on a regression study

25 Regression

Interpret values generated by regression, multiple regression and tolerance calculations
Demonstrate the process of selecting meaningful predictor variables for multiple regression studies

26 Regression Analysis

Analyze the concept behind the ARIMA method
Describe the ARIMA process
Employ the results of the ARIMA forecast to generate trading signals
Demonstrate use of linear regression to generate trading signals
Illustrate the use of linear regression for relative strength studies

Section Five: Technical Methods and Market Selection

27 Selection of Markets and Issues

Differentiate between buy-and-hold, position, swing and day trading, and the use of technical analysis in each
Compare significant factors in trading stocks versus futures
Distinguish between bottom-up and top-down approaches
Contrast secular and cyclical emphasis
Explain the basic concepts of intermarket analysis
Explain the principles behind relative strength analysis
Compare four methods for calculating relative strength

28 Intermarket Analysis

Interpret the rotation of stocks, bonds, and commodities in the typical business cycle
Describe methods of determining intermarket relationships
Illustrate the importance of measuring correlation for portfolio diversification and asset selection

29 Relative Strength Strategies for Investing

Illustrate a general approach to a momentum strategy using relative strength
Analyze the use of hedging and non-correlated assets in a long-only relative strength model

30 A Stock Market Model

Define an environmental model
Contrast internal and external indicators
Sketch the basic components of Davis' Fab Five model

31 A Simple Model for Bonds

Categorize each of the four indicators in Zweig's original model as internal or external
Categorize the additional indicator in the modified version as internal or external, trend following or mean reversion

32 Perspectives on Active and Passive Money Management

Differentiate between alpha and beta
Compare the Efficient Market Hypothesis with general concepts in behavioral finance and with the Adaptive Markets Hypothesis

Section Six: Designing and Testing Technical Trading Systems

33 The Statistics of Backtesting

Explain the statistical challenges faced when backtesting
Appraise four important statistical features of time-series price data
Illustrate why log returns are often used in backtesting
Analyze three statistical concerns in backtesting
Differentiate between signal testing and backtesting

34 The Scientific Method and Technical Analysis

Examine the possibilities and challenges of applying the scientific method to traditional technical analysis
Analyze the three forms of the EMH as to their information content
Explain "null hypothesis" as used in the scientific method
State the five stages of the hypothetico-deductive method
Critique the three consequences, articulated in this chapter, of adopting the scientific method in technical analysis

35 Theories of Nonrandom Price Motion

Analyze why the existence of nonrandom price motion is a premise of technical analysis
Describe an "efficient market"
Analyze behavioral finance as a theory of nonrandom price motion
Illustrate the two foundations of behavioral finance
Interpret feedback loops in price action

36 Case Study of Rule Data Mining for the S&P 500

Examine data mining and data-mining bias in testing trading rules
Define and examine data-snooping bias in testing trading rules

37 System Design and Testing

Differentiate between discretionary and nondiscretionary systems
Illustrate the advantages and disadvantages of nondiscretionary trading systems
Inventory the five initial decisions for constructing a trading system per the authors of this chapter
Distinguish between four types of technical trading systems
Compare various metrics for evaluating trading systems such as profit factor, percent profitable, and average trade net profit
Differentiate between methods of optimization
Define "robustness" as it applies to trading systems
Examine risk-adjusted performance metrics such as Sharpe, Sterling, and Sortino ratios

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