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Basic Trading Strategies

Learning Objectives

- Identify the different types of entries and exits in trading strategies
- Distinguish between exogenous and endogenous trading rules
- Construct a basic trading strategy

Agenda

Entries and Exits of Trading

Endogenous and Exogenous Rules

Exit Rules and Basic Strategies

Algo Trading	Discretionary Trading
Objective	
Metrics	
Pre-planned risk management	

Algo Trading	Discretionary Trading
Objective	Subjective
Metrics	
Pre-planned risk management	

Algo Trading	Discretionary Trading
Objective	Subjective
Metrics	Opinions and feelings
Pre-planned risk management	

Algo Trading	Discretionary Trading
Objective	Subjective
Metrics	Opinions and feelings
Pre-planned risk management	Profit no matter the risk

Trade Entry Rules

- Can be endogenous or exogenous or both
- Endogenous rules are based solely on performance of the security you are trading

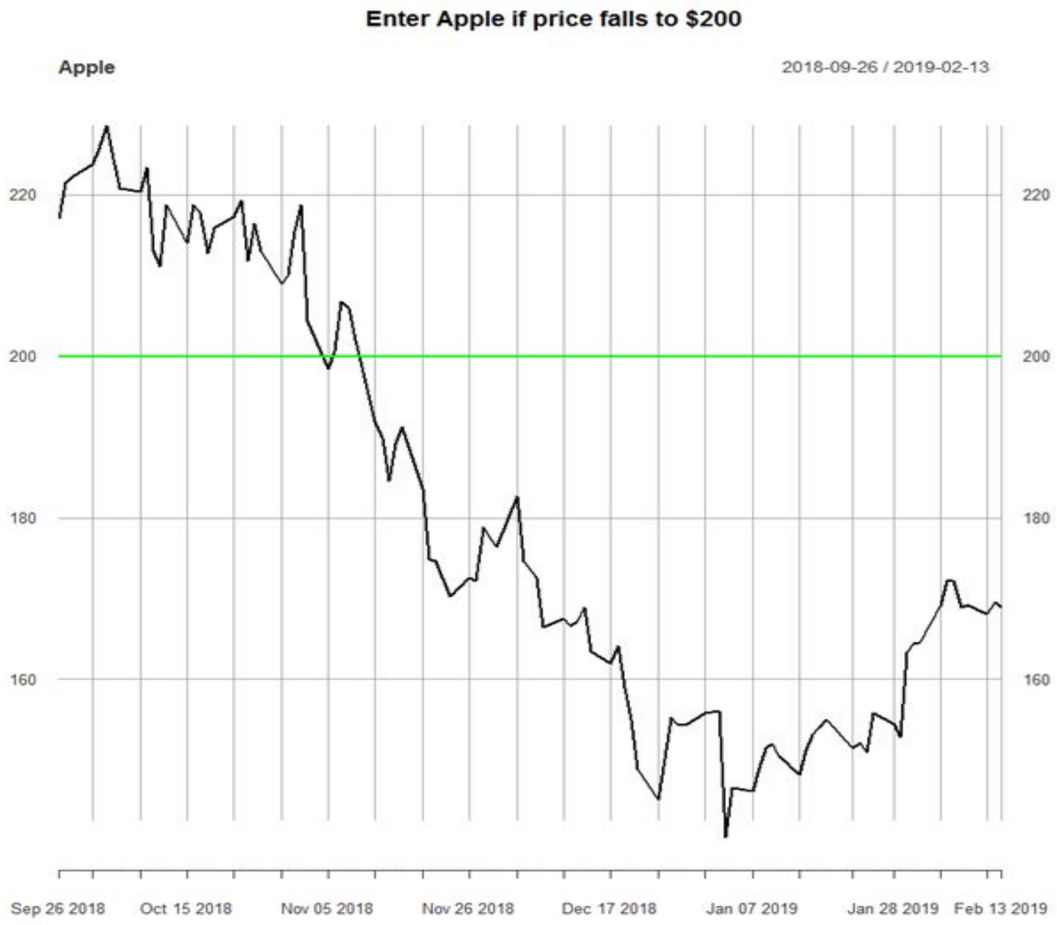
Agenda

Entries and Exits of Trading

Endogenous and Exogenous Rules

Exit Rules and Basic Strategies

Endogenous Trade Entry Rule



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More Complex Endogenous Trade Entry Rule I

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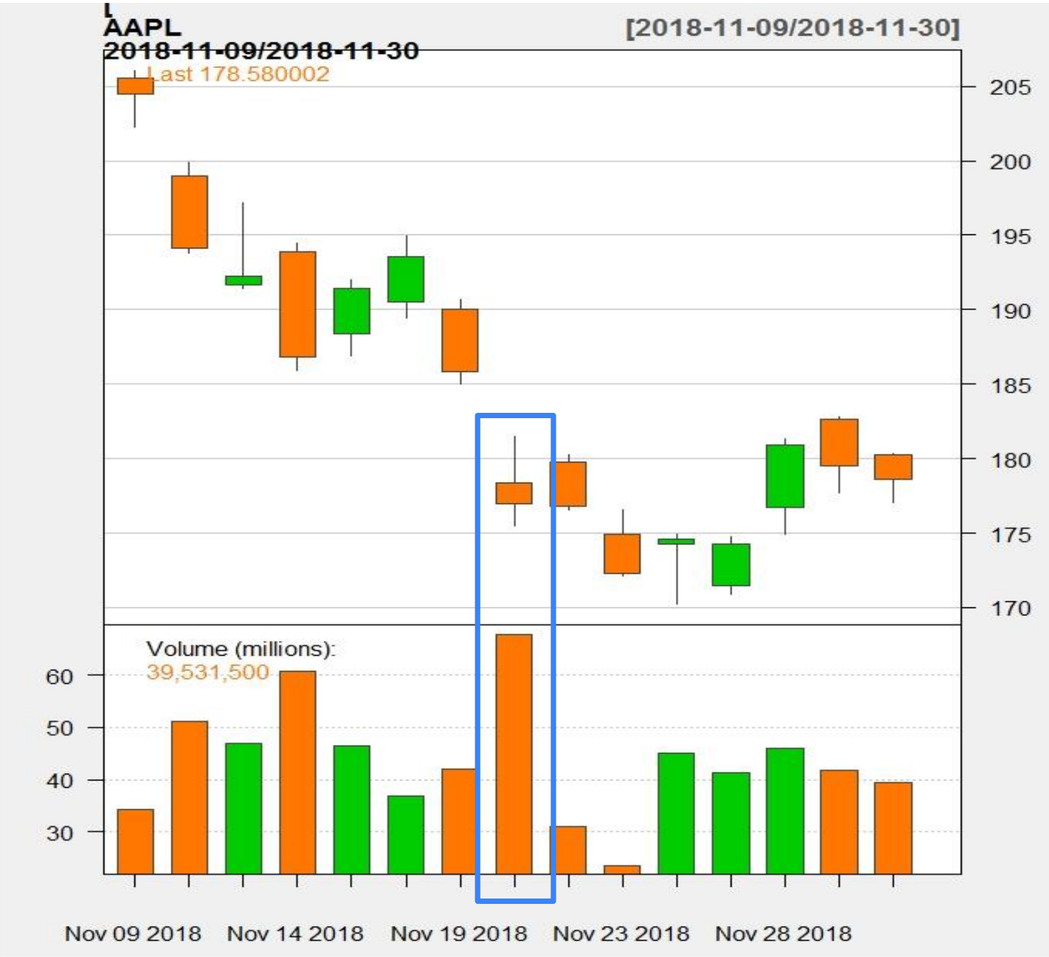
More Complex Endogenous Trade Entry Rule II

“Buy Apple if the volume exceeds the previous day’s volume ***and*** the closing price is lower than the daily average.”

Stock history = 

“Buy Apple if the volume exceeds the previous day’s volume ***and*** the closing price is lower than the daily average.”



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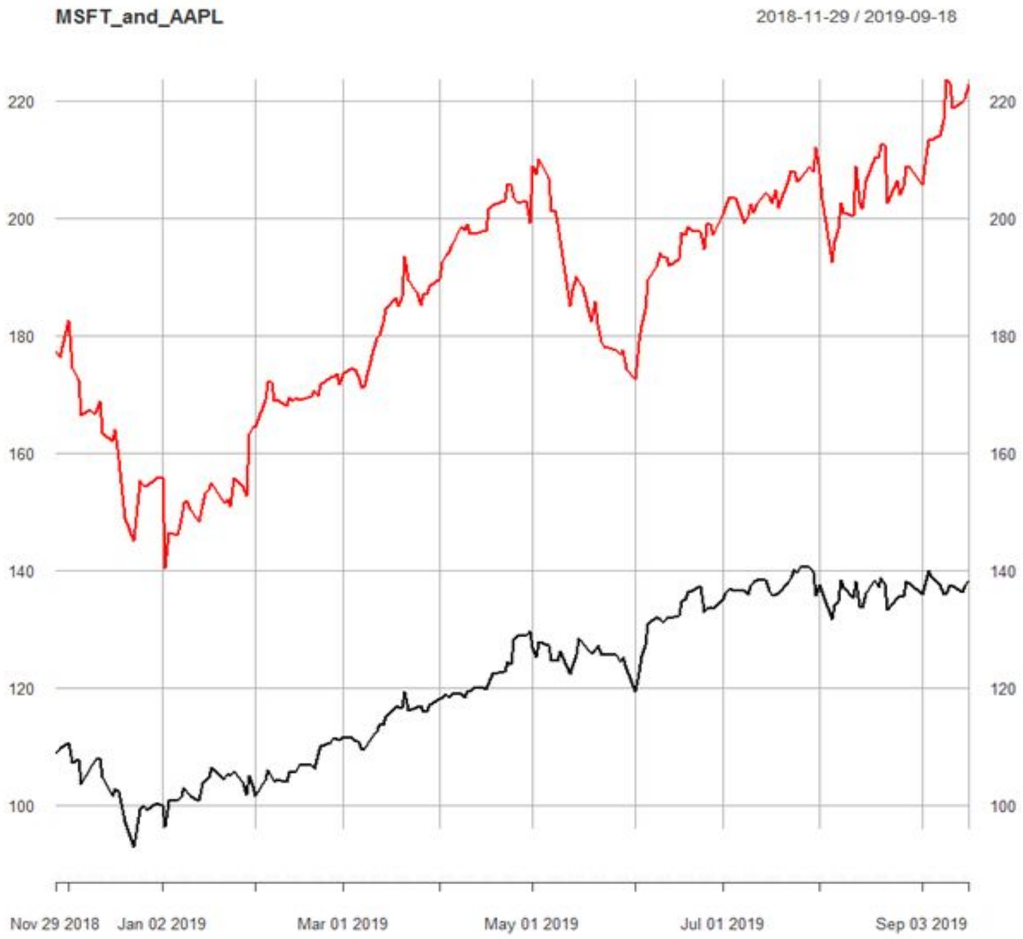
Exogenous Trade Entry Rule

- Uses data other than price and volume
- “Buy Apple if Microsoft’s price falls 5%.”

Exogenous Trade Entry Rule



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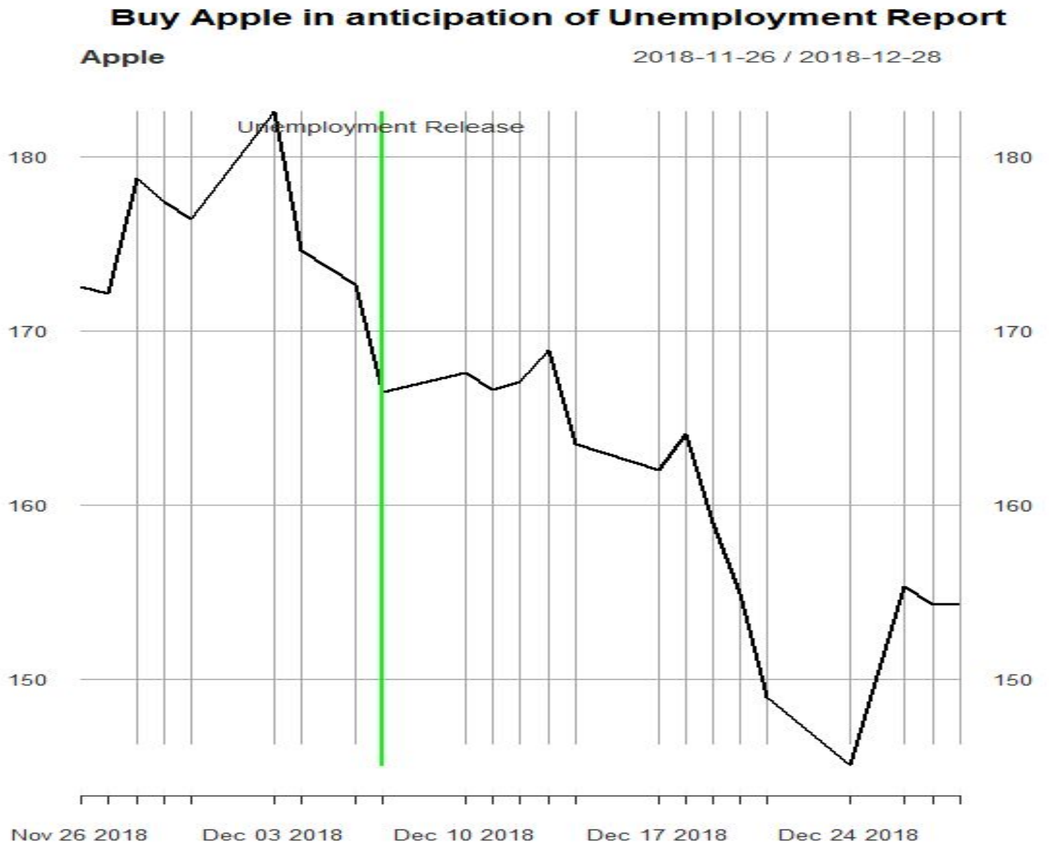
Exogenous Trade Entry Rule with Macroeconomic Data

- “Buy Apple if the U.S. unemployment rate decreases.”
- Optimism = Higher Equity Prices
- Driven by macro info released on a pre-specified schedule



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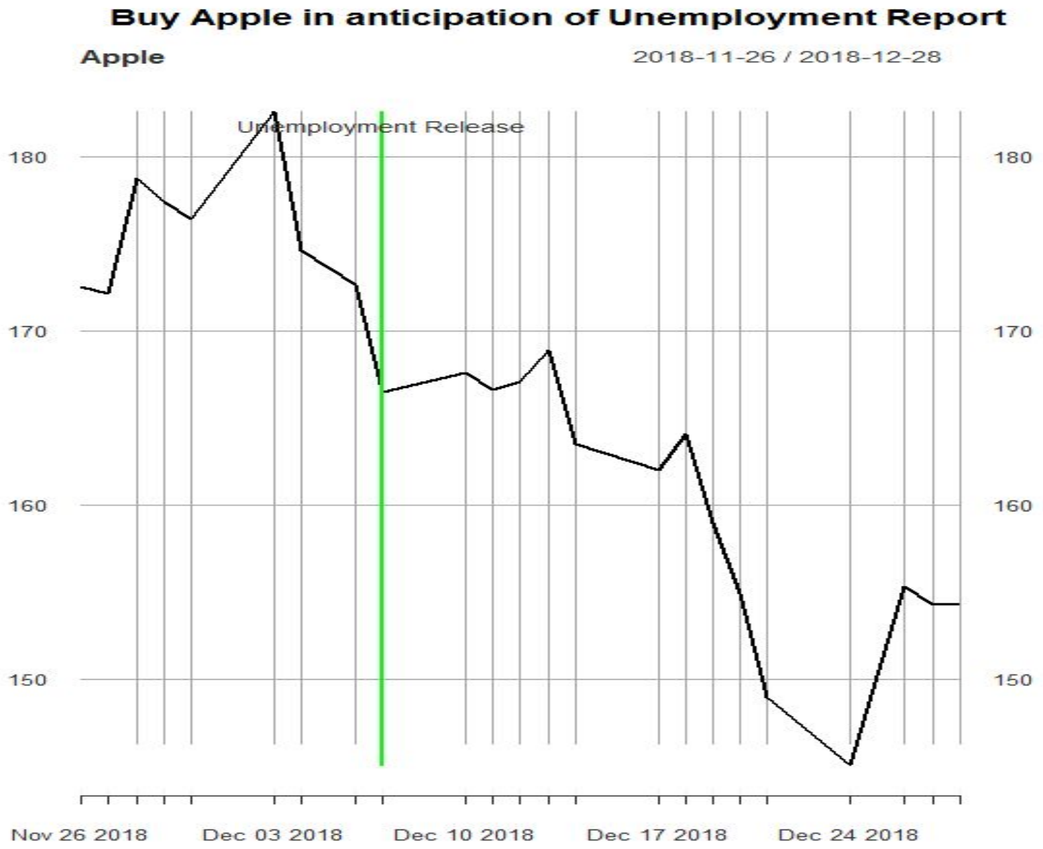

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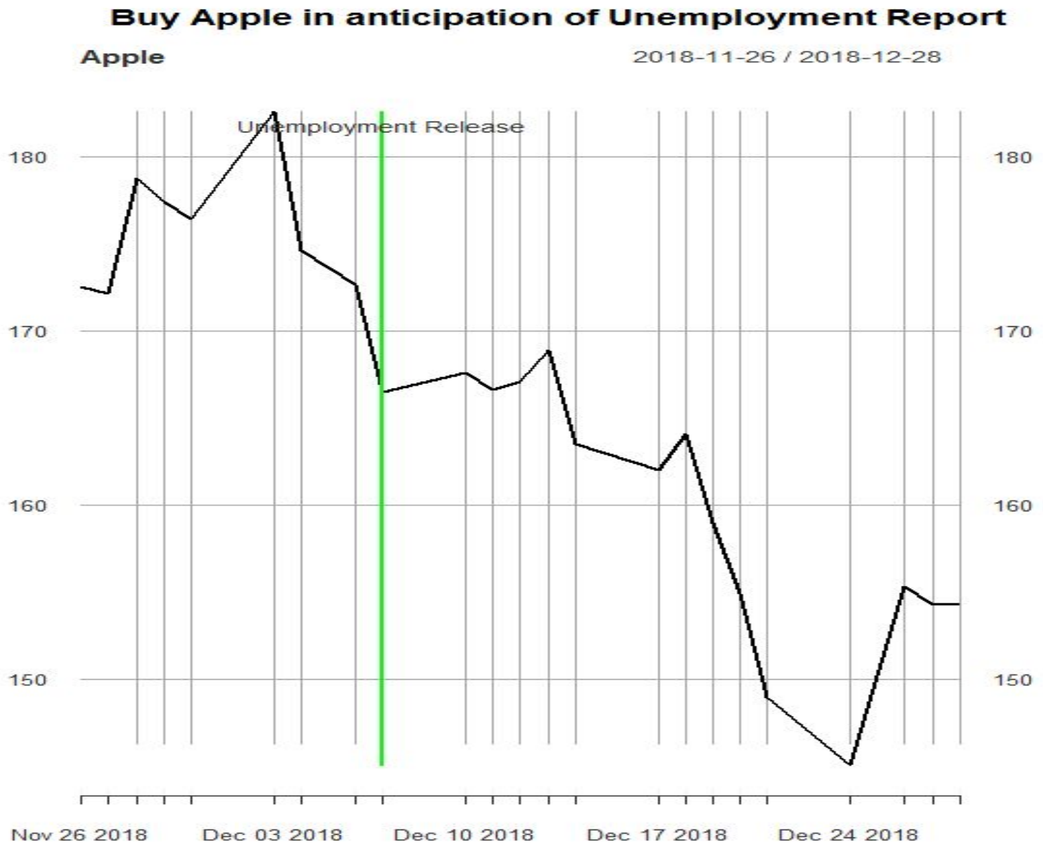

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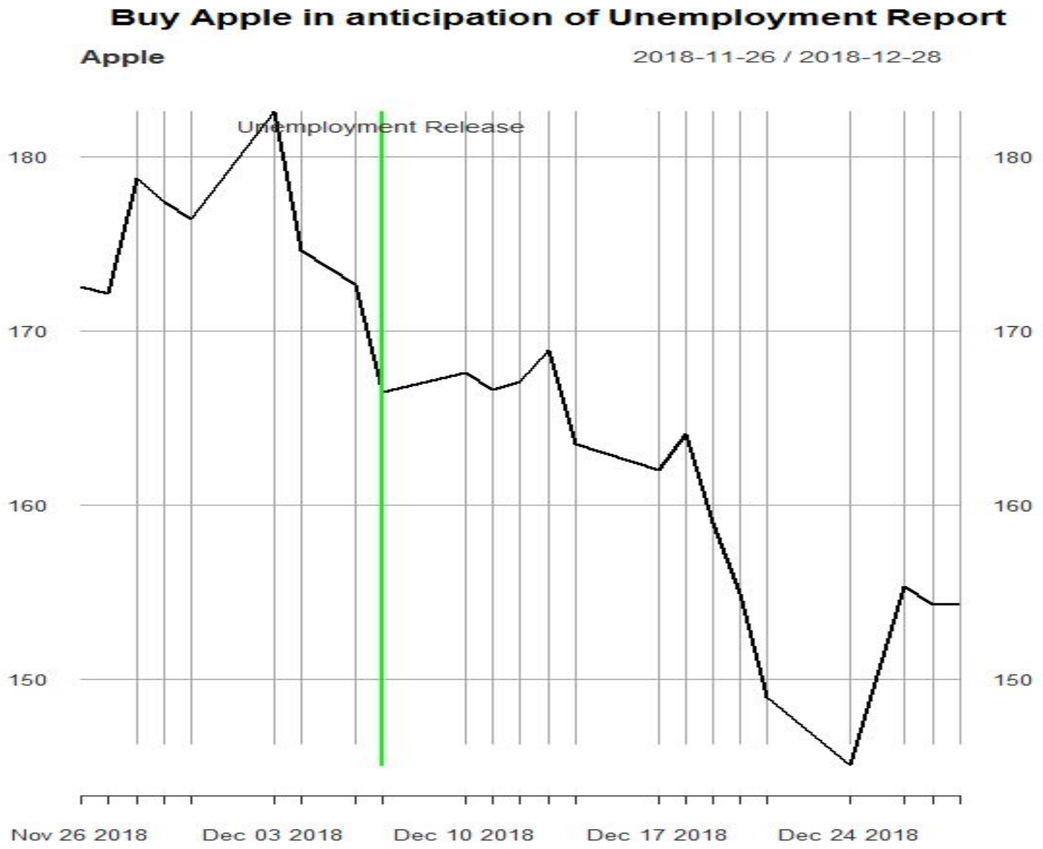

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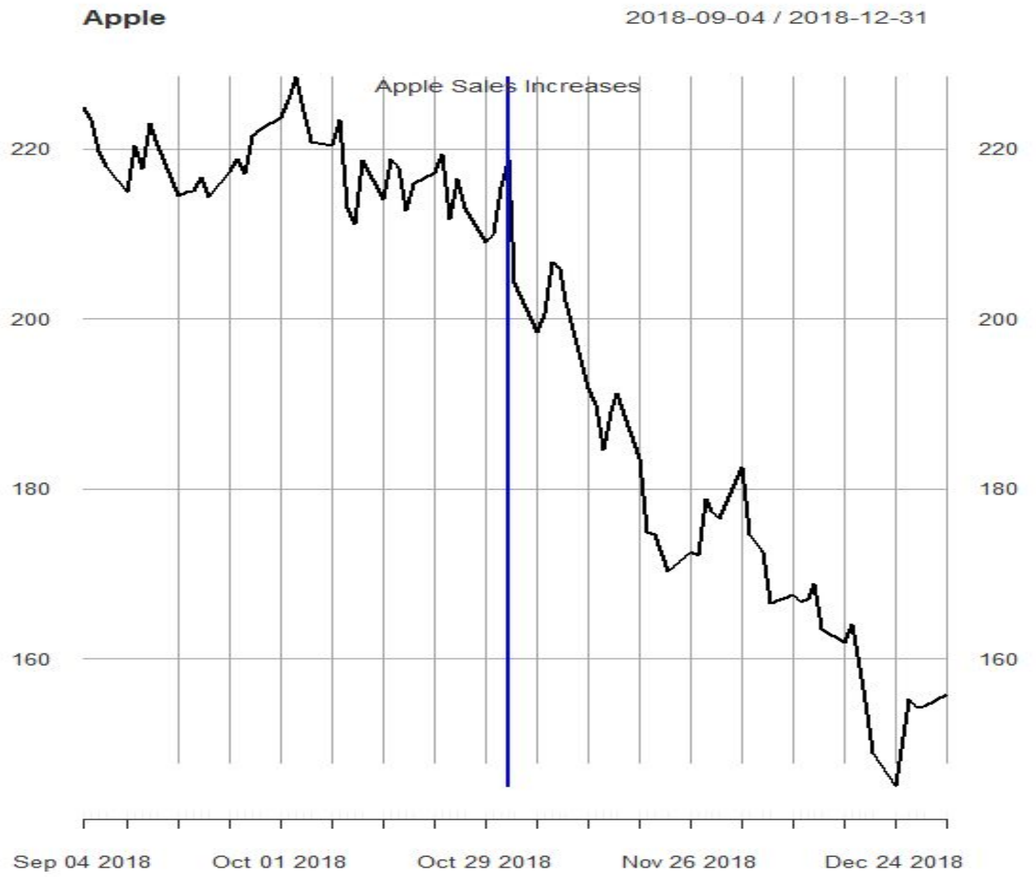
Exogenous Trade Entry Rule with Fundamental Data

- “Buy Apple if the reported quarterly sales increased ***or*** profits exceed analyst expectations.”
- Driven by fundamental data released quarterly



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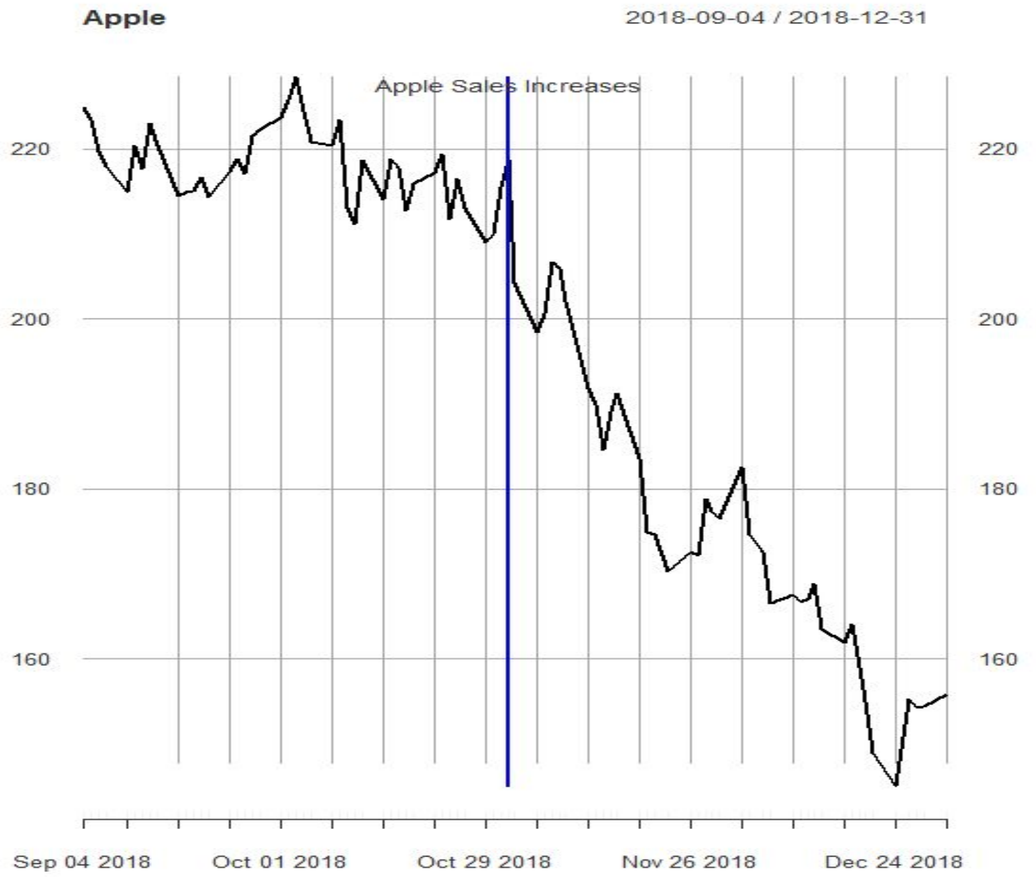

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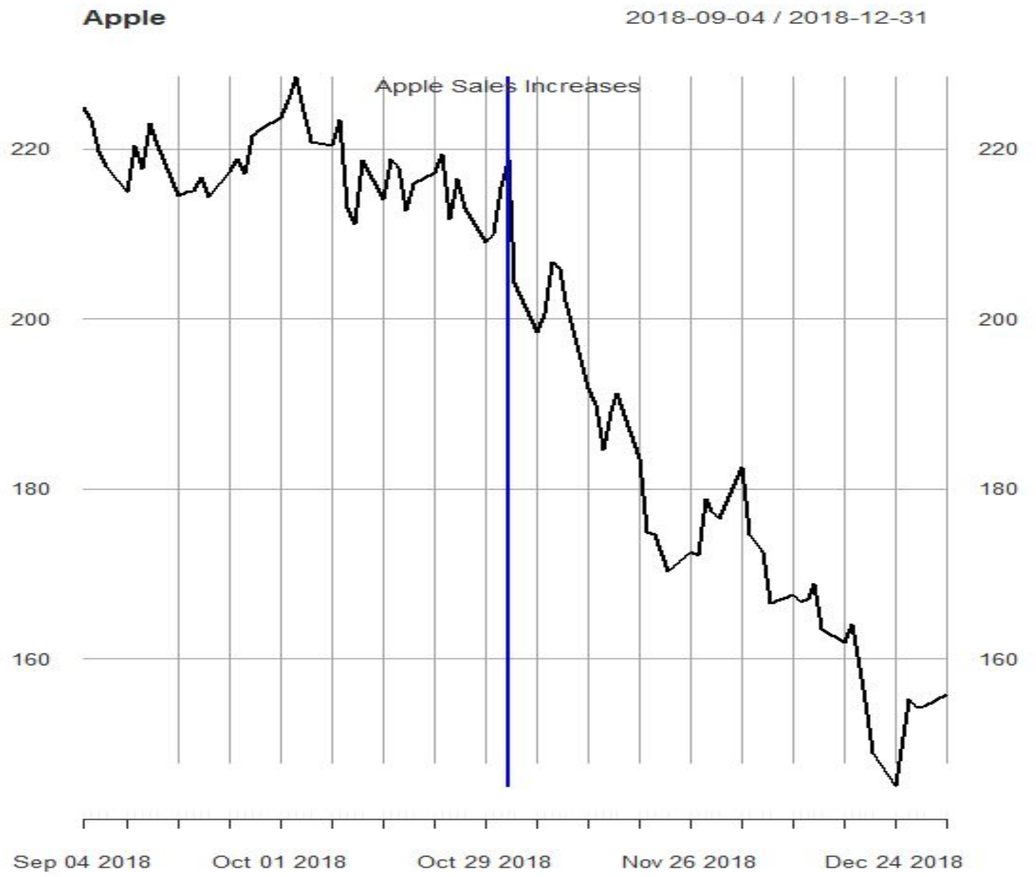

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Endogenous vs Exogenous

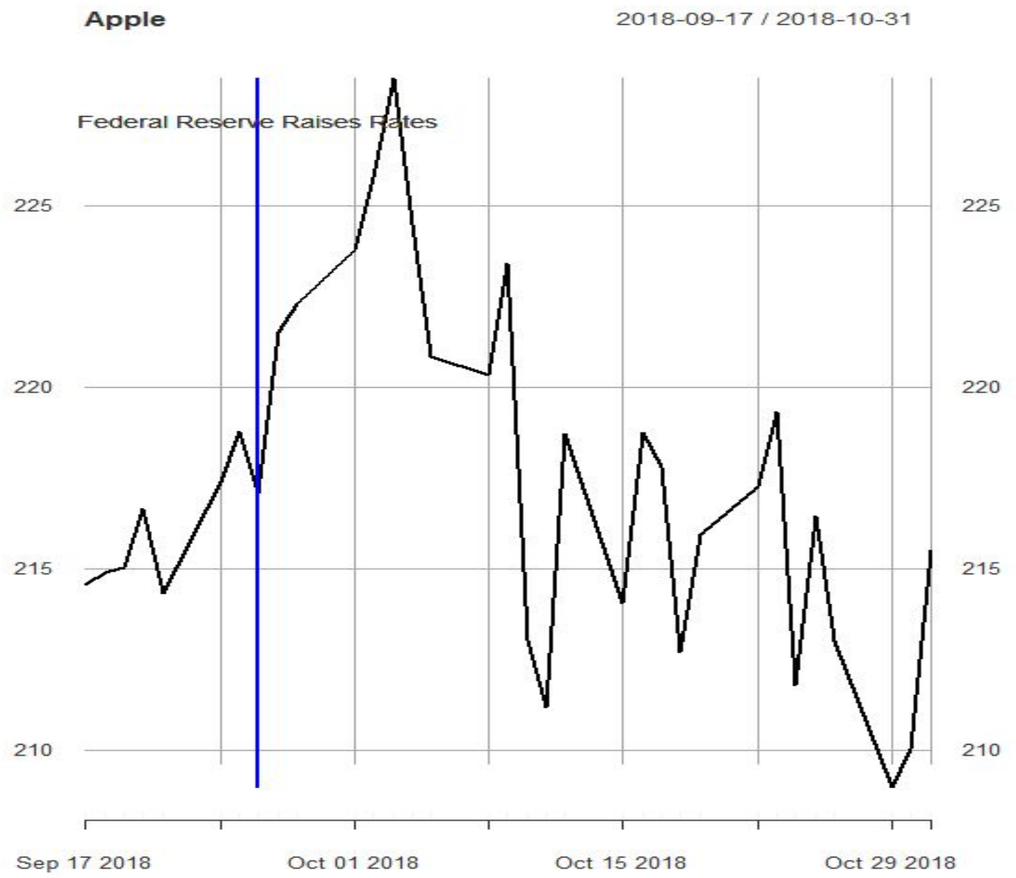
- Endogenous:
  - Are stock price and volume data sufficient to enter a trade?
  - Can patterns of past prices and volumes predict future prices?
  - Is there useful information in the structure of the data itself?
  - Can you extrapolate data patterns?

Endogenous vs Exogenous

- Exogenous
  - Based on:
    - Price of another security or
    - Fundamental data or
    - Macroeconomic data
- Data synthesis vs extrapolation

Exogenous Trading Rules

- Monetary policy
- Geopolitical factors
- Derivatives markets



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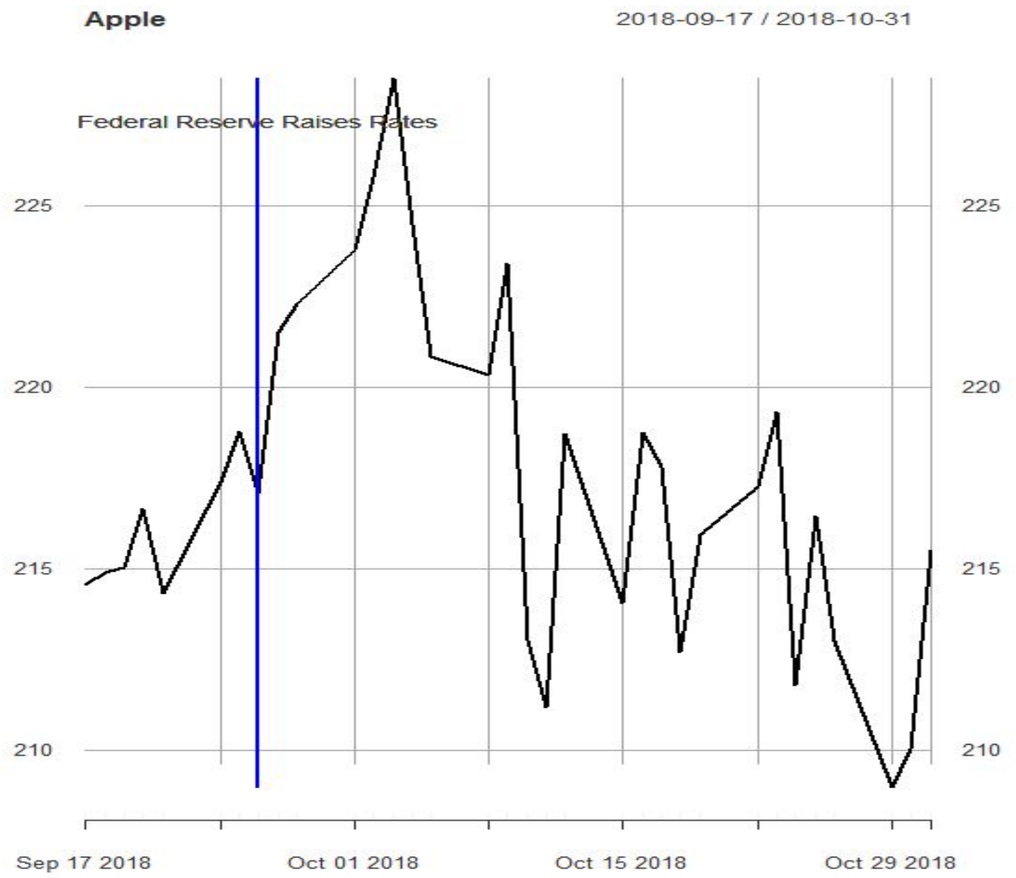

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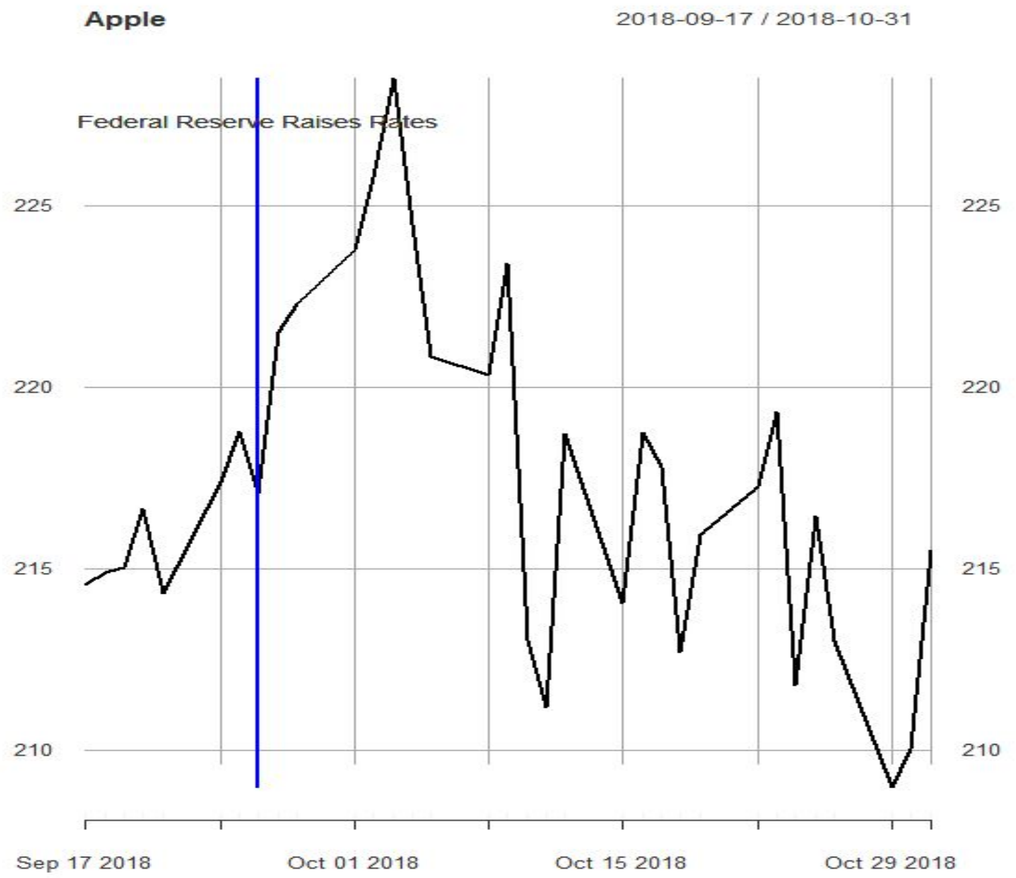

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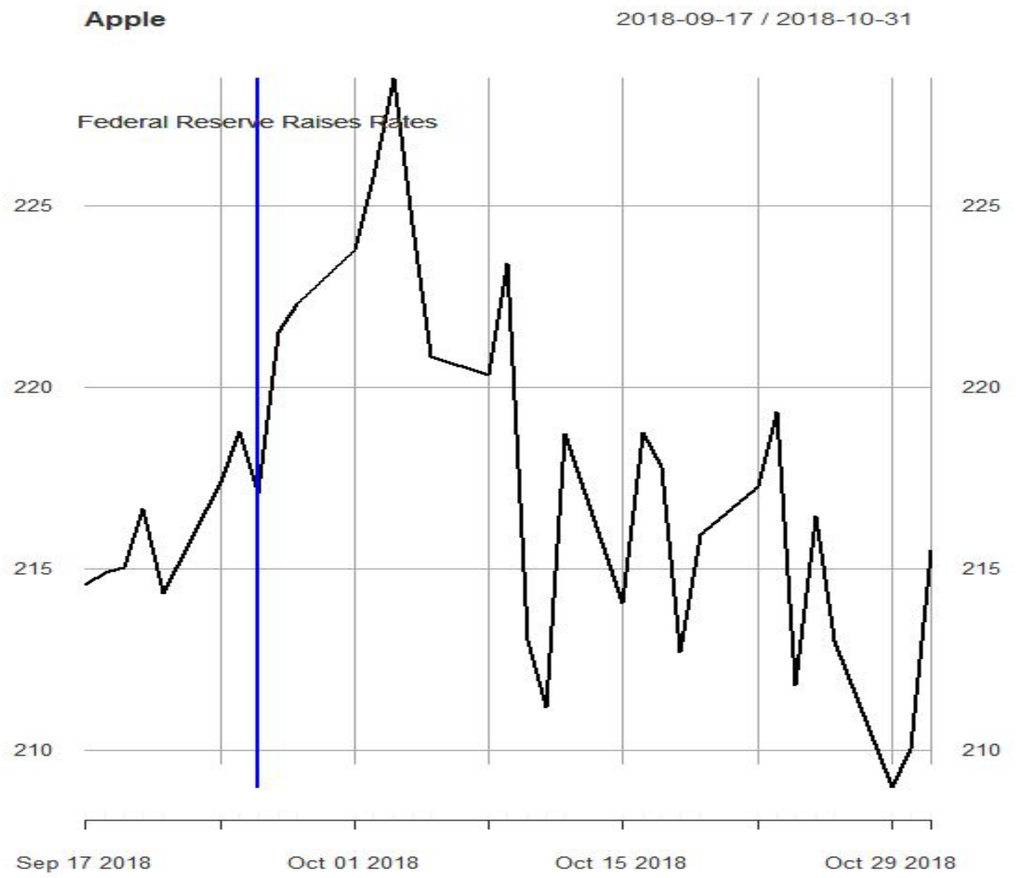

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Exogenous Trading Rules

- Are based on “extra” variables
- Provide better predictions than price and volume alone
- Help you choose and incorporate extra variables into your trading model using Machine Learning

Endogenous vs Exogenous

- Endogenous rules often based on technical analysis
- Exogenous rules used by:
  - Quantitative trading groups
  - Statistical arb groups
  - Strategists

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Agenda

Entries and Exits of Trading

Endogenous and Exogenous Rules

Exit Rules and Basic Strategies

Trade Exit Rules

This is a profit-exit

This is a stop-loss

This is a time-out

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Profit Exit Example

“Make 25 basis points.”

- Buy at $100
- Sell at $100.25

  Return

  = (100.25-100) / 100

  = 0.25% or 25 bps

Profit Exit Example

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- Buy at $100
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Profit Exit Example

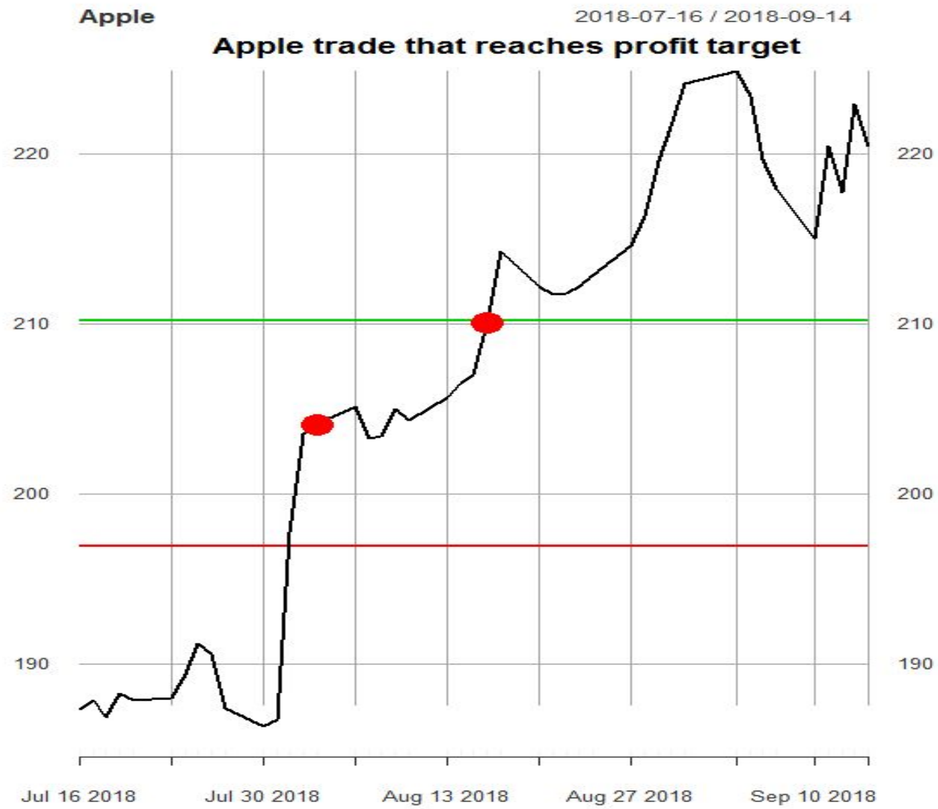
"Make 300 basis points (3%)."

- Buy at $100
- Sell at $103

Return = (103-100) / 100

=3% or 300 bps

Ex: BUY AAPL @ 203.88 SELL @ 210



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Profit Exit Example

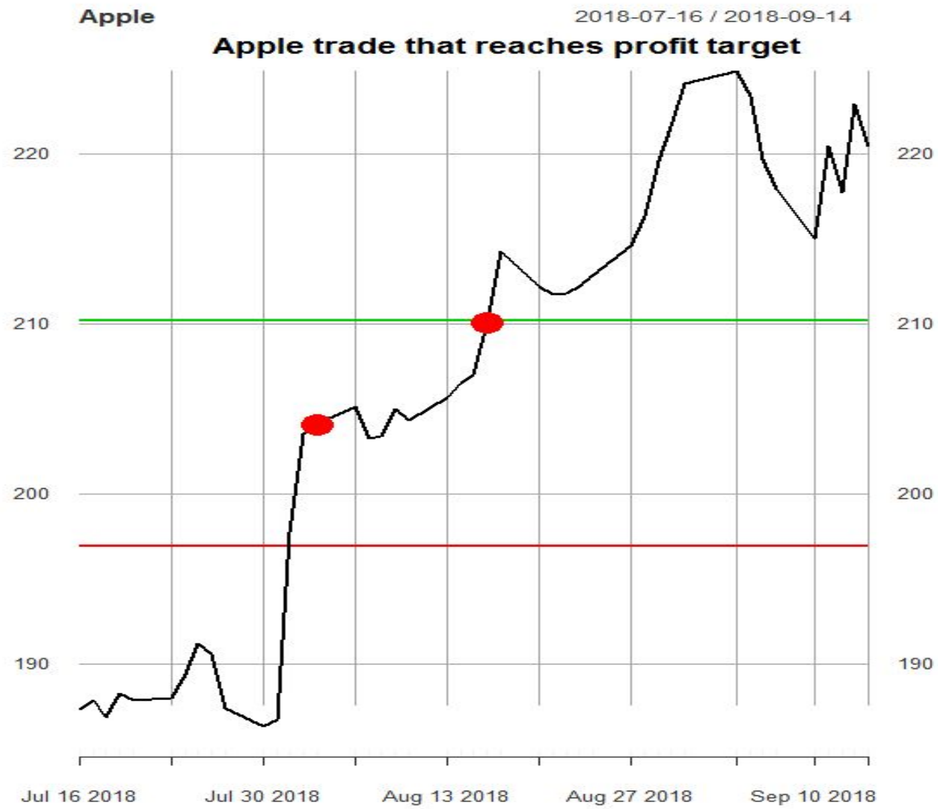
"Make 300 basis points (3%)."

- Buy at $100
- Sell at $103

Return = (103-100) / 100

=3% or 300 bps

Ex: BUY AAPL @ 203.88 SELL @ 210



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Setting a Profit Exit Level

- Cover market costs
  - Bid-Ask spread
  - Brokerage commissions
  - Exchange Fees
- Capture level of profit
  - Meets required return on trading capital

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Getting Stopped Out

- Incorrect prediction = market moves against you
- Close position at acceptable loss

“Close position if down 150 bps.”

- Enter at $100
- Exit if price falls to $98.50

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“Close position if down 150 bps.”

- Enter at $100
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Time-Out Exit

- Is based on time rather than price
- Affects day traders
  - Can’t risk holding overnight positions
- Can have a big impact on trading profits if there are significant overnight price movements

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Advanced Concepts in Trading Strategies

Learning Objectives

- Identify the different types of stop loss orders
- Distinguish between static and dynamic stop losses
- Construct rules to specify each type of stop loss

Agenda

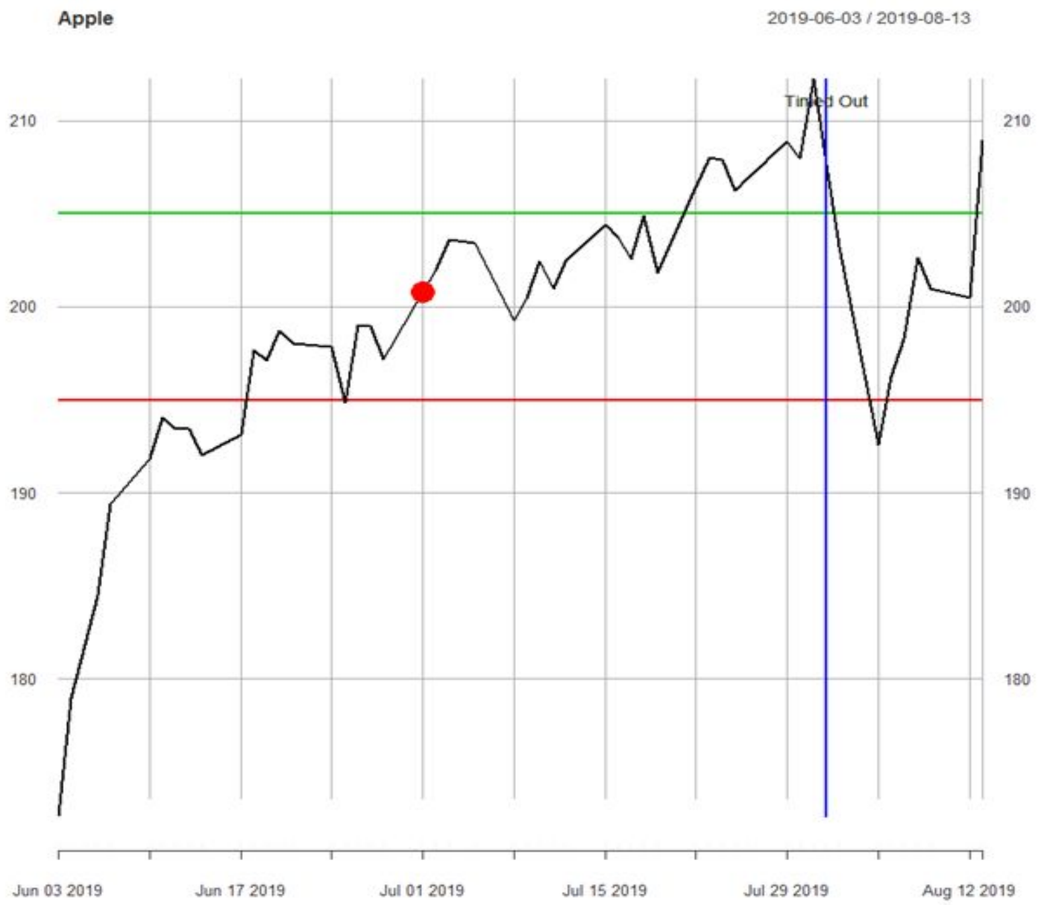
Stop Losses

Setting Static Stop Losses

Setting Dynamic Stop Losses

Basic Trading Model Parameters

1. Entry signal
2. Profit exit
3. Stop-loss
4. Time-out



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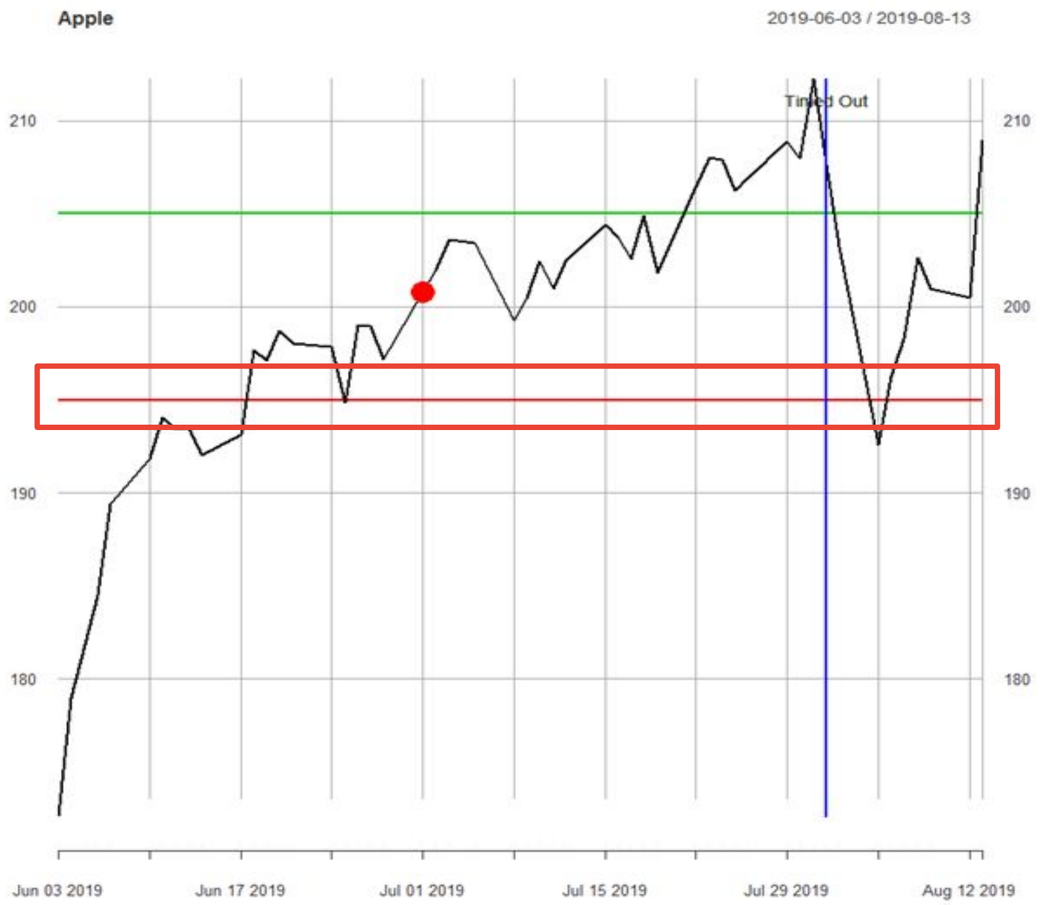

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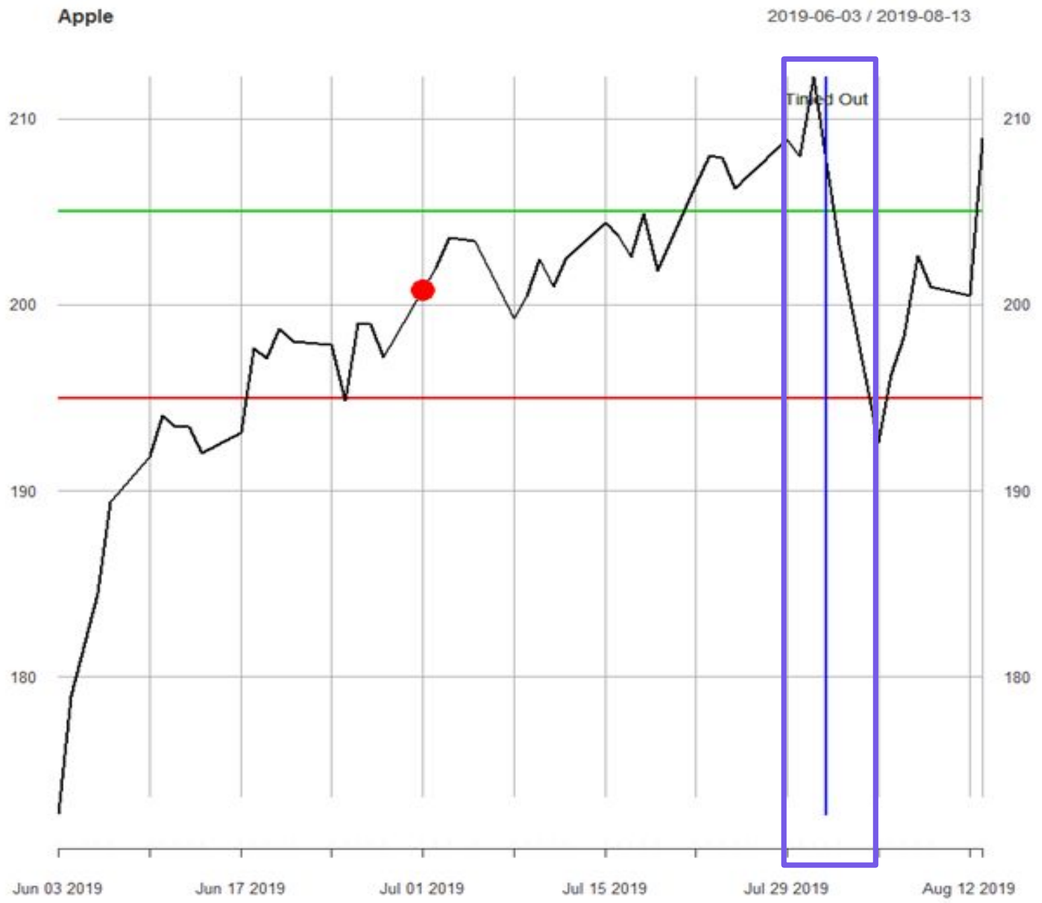

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Time Outs and Stop Losses

- **Time outs are optional** and can be used to:
  - Manage position risk
  - Force a periodic strategy re-evaluation
- **Stop losses are mandatory** and are either be set by the trader or imposed by risk management

Stop Losses

Reduce risk

- **Expected** changes in market conditions:
  - Noise in prices
  - Increases in volatility
- **Unexpected** changes:
  - Fraud by management
  - Natural disasters and political risk

Stop Losses

Steinhoff Stock Price 2017 (GBP)

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Agenda

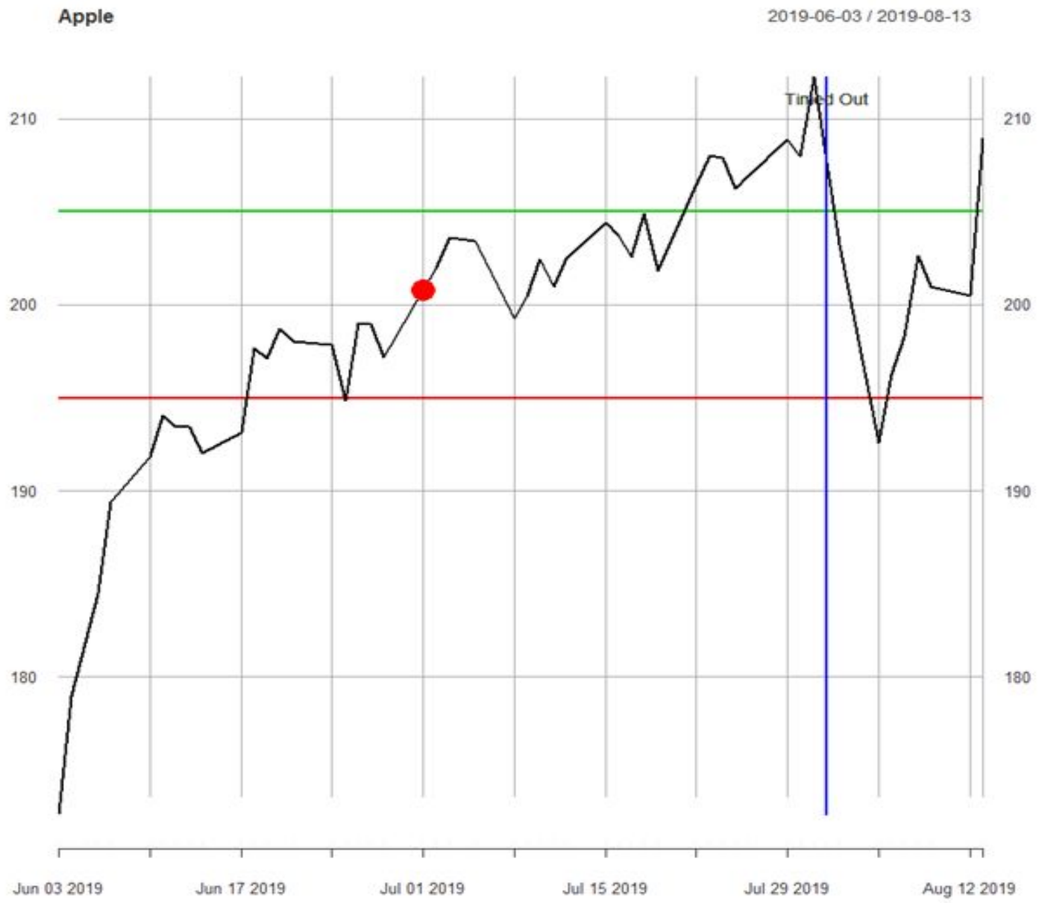
Stop Losses

Setting Static Stop Losses

Setting Dynamic Stop Losses

Stop-Loss Levels Based on Risk Tolerance

- Enter trade at $200
  - 2.5% risk tolerance ⇒$195 S/L
  - 1.5% risk tolerance ⇒$197 S/L
  - 1.0% risk tolerance ⇒$198 S/L
- Market order to sell position if AAPL trades at or below the stop-loss price



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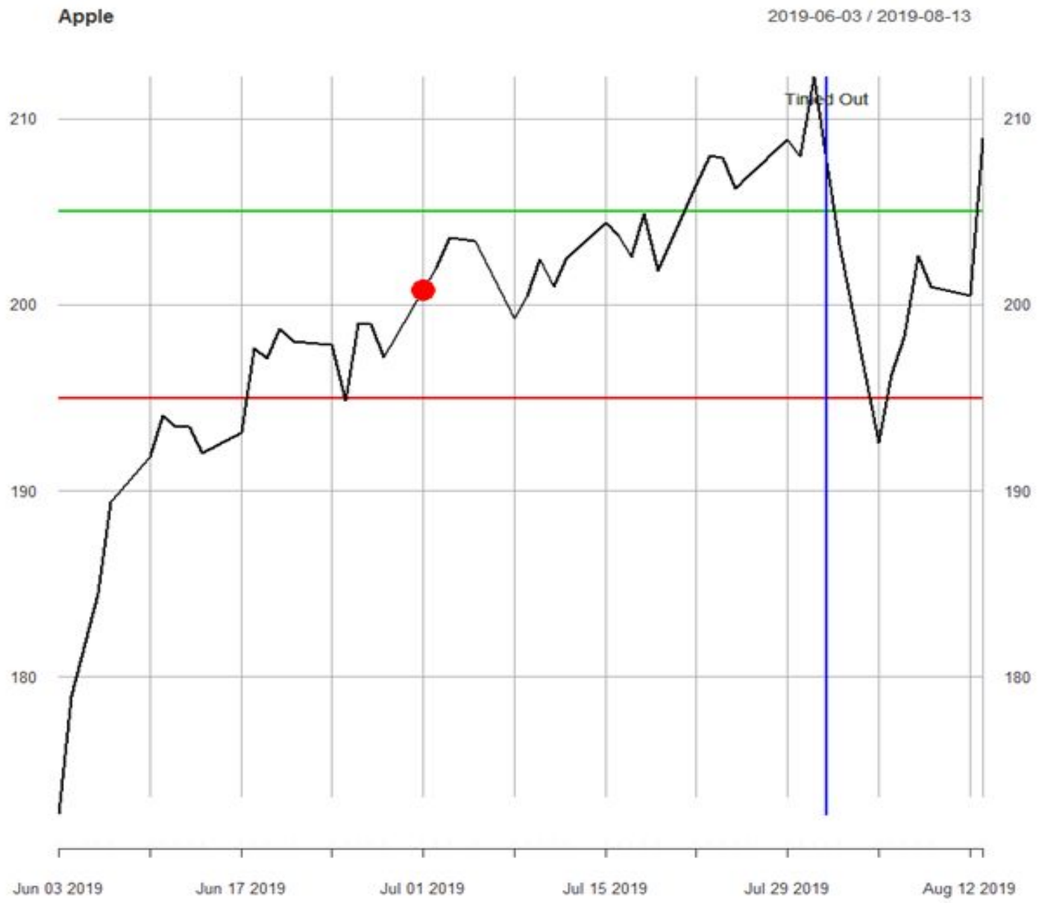
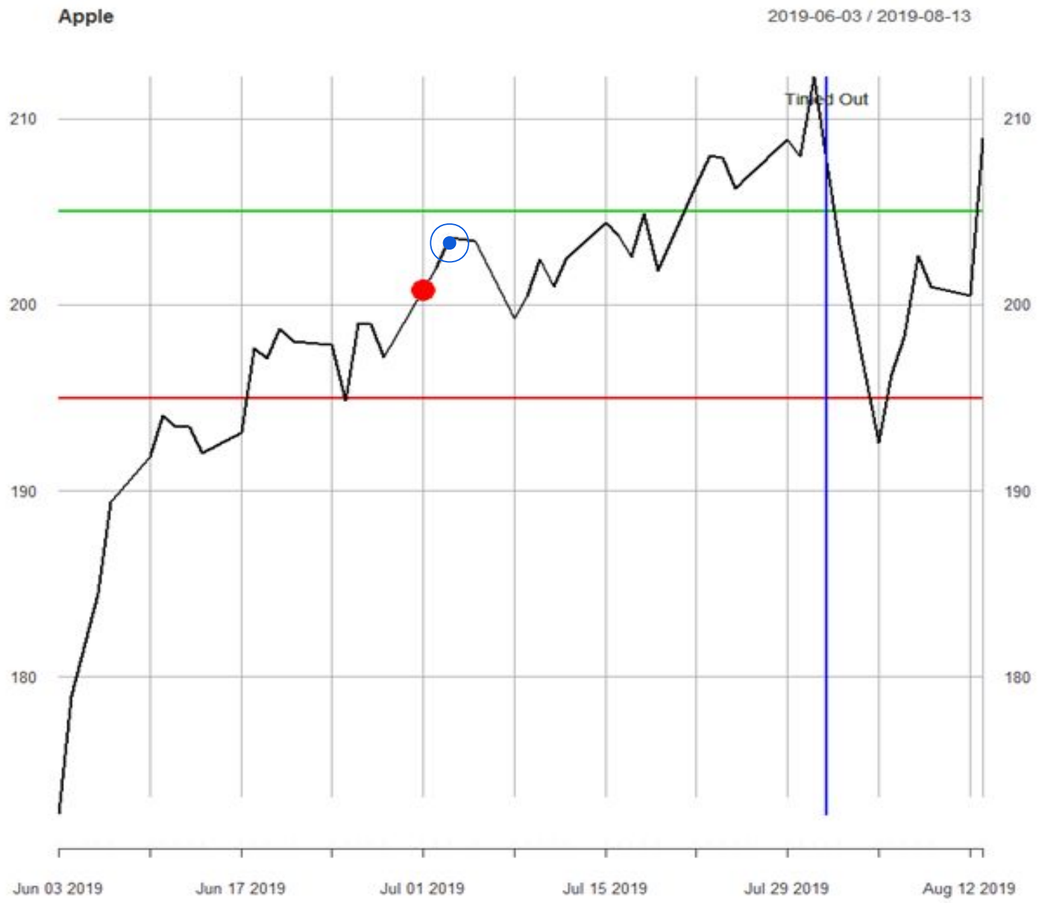
Ideal Stop-Loss Level

- Market noise can trigger a stop loss due to temporary price drop
  - Common in volatile and less liquid markets
- Too tight stop losses limit risk but can trigger a lot of small losses
- Loose stop losses are less sensitive to noise but increase exposure to large losses



Adjusting Stop-Loss Levels Based on Market Moves

- Enter trade at $200
- AAPL moves to $203 giving you an unrealized gain of $3 (150 bps)
- Do you keep your stop loss at $195?



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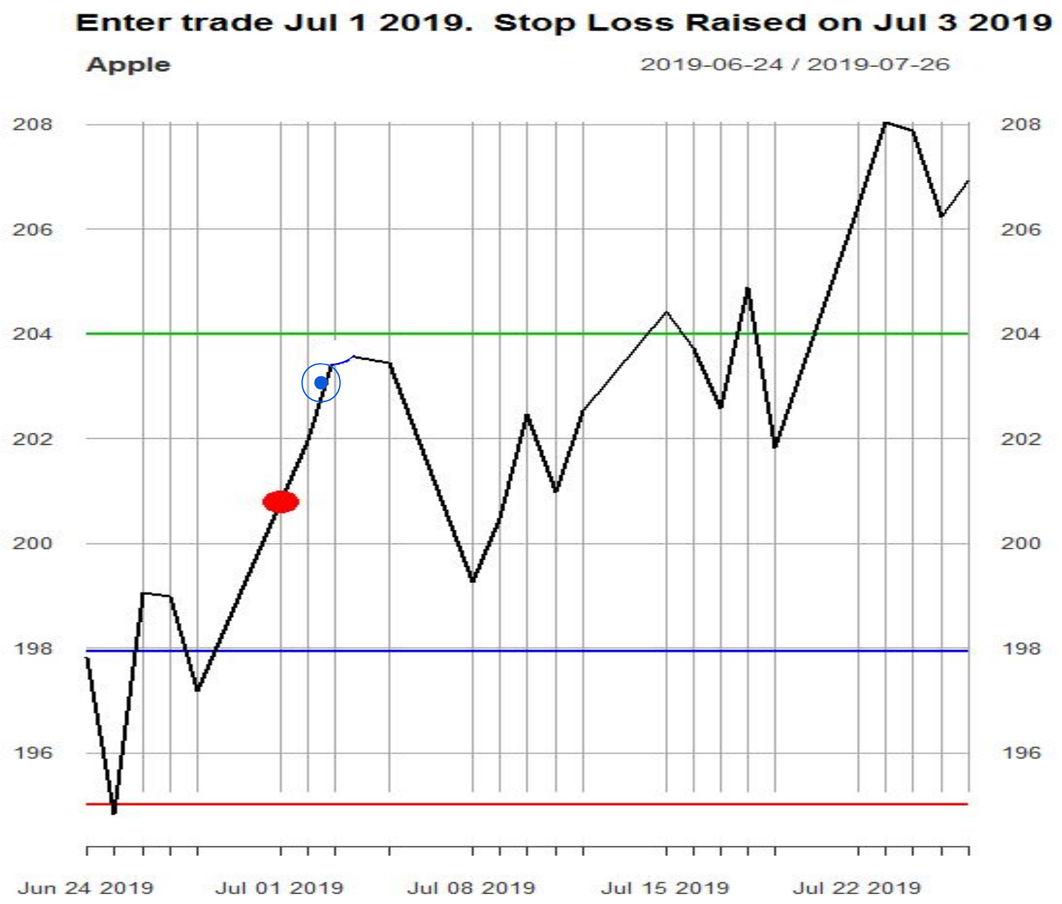
Adjusting Stop-Loss Levels Based on Market Moves

- Dynamic stop loss adjusted to 2.5% below highest realized price
- S/L Level = 97.5% of highest price
- AAPL rises to **$203**



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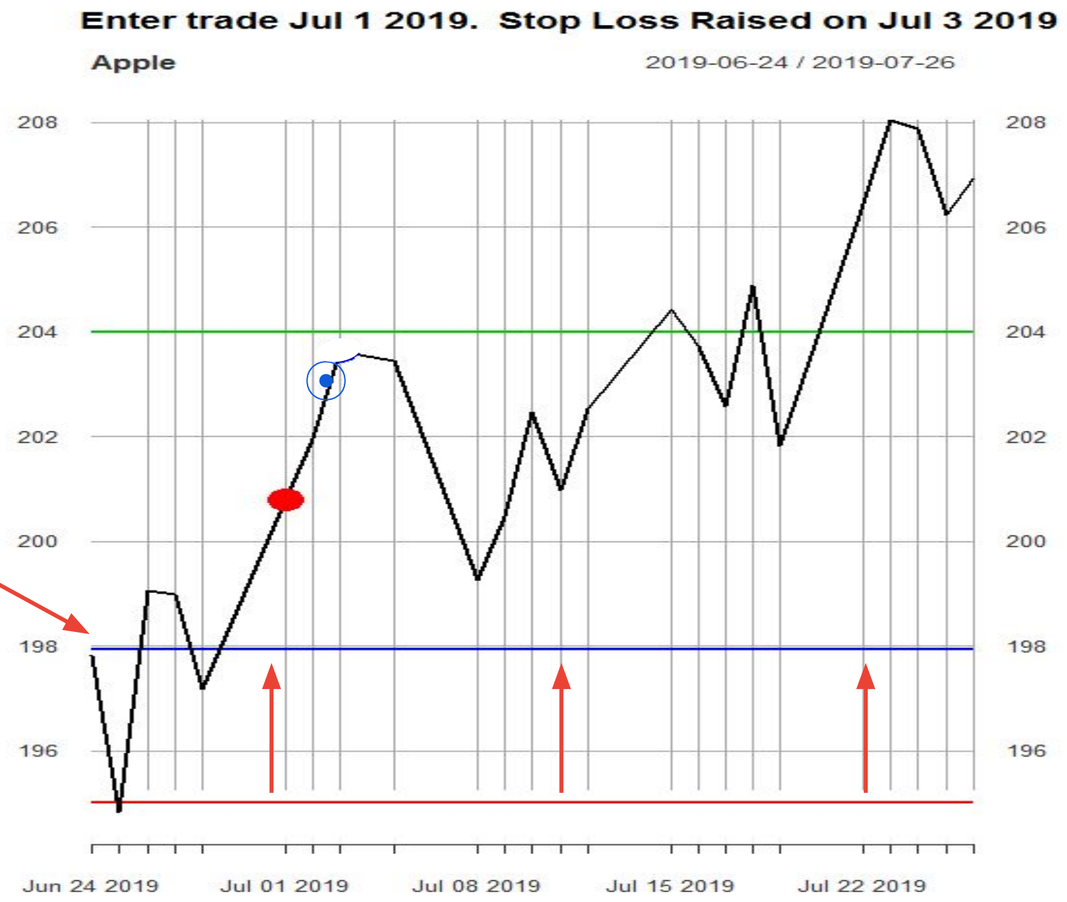
Adjusting Stop-Loss Levels Based on Market Moves

- Dynamic stop loss adjusted to 2.5% below highest realized price
- S/L Level = 97.5% of highest price
- AAPL rises to **$203.07**

⇒ S/L = $203.07*(97.5%) = $198

Max Loss ≃ $200-$198 = $2.00

= 1%



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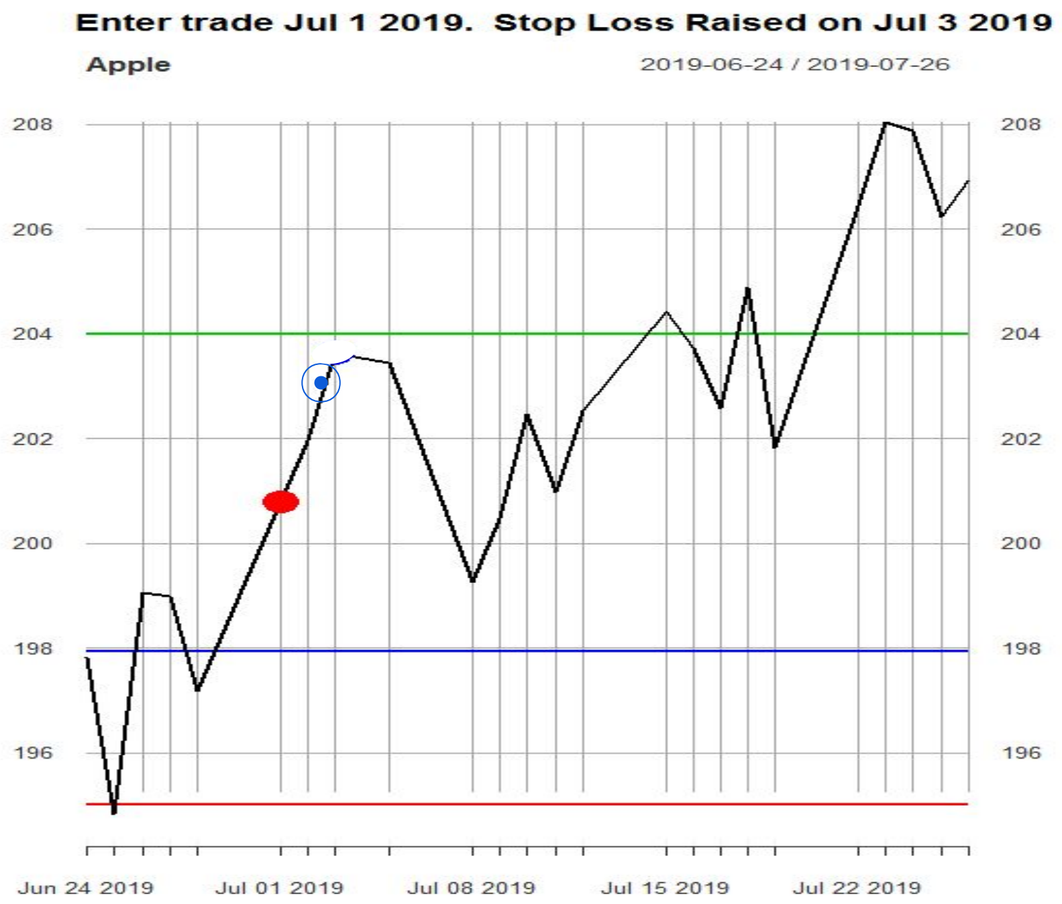
S/Ls Based on Market Moves and Risk Tolerance

- S/L follows the high price rather than the entry price
- Can also adjust the S/L percentage



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S/Ls Based on Market Moves and Risk Tolerance

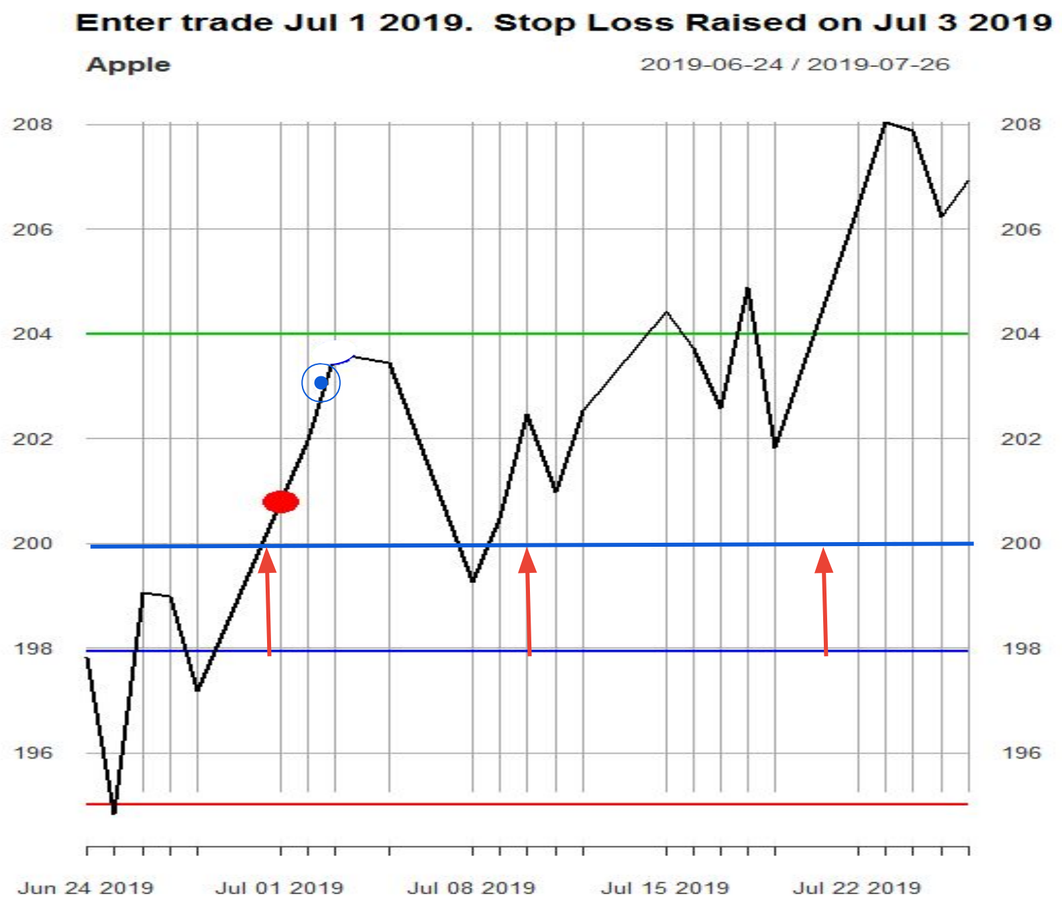
- S/L follows the high price rather than the entry price
- Can also adjust the S/L percentage

Original S/L = 2.5%

New S/L = 1.5%

⇒ S/L = $203*(98.5%) ≃ $200

Max Loss ≃ $200- 200 ≃ $0



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Find the Optimal Stop Loss based on Back Testing

- Use your 4 parameter model
- Backtest model with market data:
  - Static Stop Loss
  - Dynamic Stop Loss
  - Variable Dynamic Stop Loss
- Compare results and choose optimal type of stop loss

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