LECTURE 2 – Concept Questions – ONLY ANSWERS

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**IV.**

A. **Market buy and sell orders:** A market buy order is a simple instruction to buy a stock immediately at the best price available, while a market sell order does the same for selling. These orders are executed instantly based on current market conditions.

B. **Limit buy and sell orders:** A limit buy order allows you to set a maximum price you're willing to pay for a stock—so the order only gets filled if the stock reaches that price or lower. On the other hand, a limit sell order specifies the minimum price at which you're willing to sell, ensuring you only sell at that price or higher.

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**V.**

A. **Bid price for a security:** The bid price represents the highest price someone is willing to pay for a stock. Essentially, it's the price at which a seller can instantly sell their shares. It’s usually the highest unfilled limit buy order.

B. **Asked price for a security:** The asked price is the lowest price at which someone is willing to sell a stock. For buyers looking to purchase shares right away, this is the price they'll have to pay.

C. **Spread for a security:** The spread is simply the difference between the asked price and the bid price. It's calculated as:

Spread = Asked price - Bid price

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**VI.**

A. **Current asked price for DZX stock:** Looking at the limit sell orders, the lowest price available is $43.55. So, the asked price is $43.55.

B. **Current bid price for DZX stock:** The highest limit buy price is $43.40, so that’s the current bid price.

C. **Price execution for a market sell order of 100 shares:** A market sell order will execute at the current bid price, which is $43.40.

D. **Price execution for a market buy order of 100 shares:** A market buy order will execute at the current asked price, which is $43.55.

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**VII.**

A. **What Tom does when his inventory of WMN stock becomes too high:** If Tom's inventory is too high, it means he's been buying more from sell orders than he's been selling to buy orders. This is probably due to bad news about WMN, causing him to lower both his bid and asked prices. Lowering the bid price reduces the number of market sell orders he buys from, while lowering the asked price increases his chances of selling more shares. His goal is to minimize inventory and price risk, since he's not aiming to hold stocks long-term but rather to make money off the spread.

B. **What Tom does when his inventory of WMN stock becomes too low:** When Tom's inventory is too low, he has sold more than he has bought, possibly due to good news driving up demand. In this case, he'll raise both his bid and asked prices to encourage more market sell orders to increase his stock and to discourage buying. Again, his aim is to maintain balance and minimize price risk, not to hold inventory for long periods.

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**VIII.**

A. **Impact of increased price volatility on QJV's spread:** When a stock's price becomes more volatile, the spread tends to widen. This is because the price risk for dealers holding inventory increases.

B. **Impact of increased trading volume on QJV's spread:** Higher trading volume usually leads to a narrower spread. With more trades happening, dealers can adjust their inventory more quickly, reducing their exposure to price risk.

C. **Impact of good news on QJV's spread:** While good news can raise both the bid and asked prices for QJV, it doesn't directly affect the spread itself. The spread remains the same since the cost of providing liquidity doesn't change.

D. **Impact of more dealers/market makers on QJV's spread:** When more dealers are competing in the market, the spread generally narrows. Increased competition pushes down the asked price and raises the bid price, which reduces the difference between the two.

E. **Impact of informed investors executing market orders on QJV's spread:** If more market orders are being executed by informed investors, the spread will widen. This happens because limit orders become more vulnerable to being taken advantage of by better-informed participants, so the spread must increase to compensate for that risk

# Stock Positions and Portfolio Return

Sai Nishanth Mettu

## I. Introduction

In this exercise, I will be analyzing Jane's investment strategies with KLV stock during the month of June 2010. She has $12,000 available to invest and can either purchase KLV stock on margin or short sell the stock. I will walk through the calculations of return, portfolio fraction, percent margin, and final account values for both strategies.

## A. Return on KLV Stock

At the end of May 2010, the price of KLV stock is $50, and at the end of June 2010, it rises to $57.50. No dividends were paid during this period.

$$\text{Return on KLV stock} = \frac{57.50 - 50}{50} = 15\%$$

## B. Buying KLV Stock on Margin

Jane decides to borrow $3000 from her broker at the end of May 2010, which she combines with the $12,000 in her brokerage account to buy KLV stock on margin.

### 1. Value of Brokerage Account at the Start of June 2010

The total value of KLV stock purchased is:

$$\text{Value of KLV stock} = 12,000 + 3,000 = 15,000$$

However, since Jane borrowed $3000, her net worth remains $12,000.

### 2. Fraction of Portfolio Invested in KLV Stock

The fraction of her portfolio invested in KLV stock is:

$$w_{\text{KLV,p(start 6/10)}} = \frac{15,000}{12,000} = 1.25$$

### 3. Fraction of Portfolio in Riskless Asset

The fraction of her portfolio in the riskless asset is negative due to the borrowing:

$$w_{\text{f,p(start 6/10)}} = \frac{-3,000}{12,000} = -0.25$$

### 4. Percent Margin at the Start of June 2010

The percent margin is:

$$\text{Percent Margin} = \frac{12,000}{15,000} = 80\%$$

### 5. Return on Her Portfolio in June 2010

Using the return on KLV stock and the riskless rate (1% per month):

$$R_{\text{p(6/10)}} = 1.25 \times 15\% + (-0.25) \times 1\% = 18.5\%$$

### 6. Value of Brokerage Account at the End of June 2010

The net worth at the end of June 2010 is calculated as:

$$\text{Net Worth(end 6/10)} = 12,000 \times (1 + 0.185) = 14,220$$

## C. Short Selling KLV Stock

Jane instead decides to short sell $9000 worth of KLV stock at the end of May 2010 and keeps the proceeds in her brokerage account.

### 1. Value of Brokerage Account at the Start of June 2010

The total value of her account is:

$$\text{Cash from Short Sale} = 12,000 + 9,000 = 21,000$$

Her net worth remains $12,000 since she owes $9000 for the short sale.

### 2. Fraction of Portfolio Invested in KLV Stock

The fraction invested in KLV stock is negative because of the short sale:

$$w_{\text{KLV,p(start 6/10)}} = \frac{-9,000}{12,000} = -0.75$$

### 3. Fraction of Portfolio in Riskless Asset

$$w_{\text{f,p(start 6/10)}} = \frac{21,000}{12,000} = 1.75$$

## 4. Percent Margin at the Start of June 2010

$$\text{Percent Margin} = \frac{12,000}{9,000} = 1.3333\,(or\,133.33\%)$$

## 5. Return on Her Portfolio in June 2010

$$R_{\text{p}(6/10)} = -0.75 \times 15\% + 1.75 \times 1\% = -9.5\%$$

## 6. Value of Brokerage Account at the End of June 2010

$$\text{Net Worth(end } 6/10) = 12,000 \times (1 - 0.095) = 10,860$$