Test 3, Lecture 5 Review

PROJECT ECONOMICS

In prior lectures, we discussed how uncertainty plays a role in capital budgeting. Now we try to relate this concept to the overall firm and our risk and return unit. In unit 2, we discussed Beta as a measure of the systematic risk of a firm. We talked in general terms of the volatility in stock returns and Beta. Now, we think about what creates volatility for a firm

* Beta: a risk index that measures the volatility of returns
	+ The higher the risk, the greater the volatility and the greater the beta
* Volatility is synonymous with standard deviation

What Drives the Risk of a Firm?

* Cyclical Revenues: revenues that move with the economy
	+ Increased cyclality increases volatility in earnings which increases beta
* Operating Leverage: percent of fixed costs versus the percent of variance costs
	+ An increased percentage of fixed costs increases operating leverage which increases volatility in earnings and increases beta
* Financial Leverage: percentage of debt on the balance sheet
	+ Increased debt increases fixed interest payments which increases volatility in earnings which increases beta

\*\*\*Large Beta = cyclical revenue, high operating leverage, and high financial leverage

Relating Volatility to Fixed Costs

* An increased percentage of fixed costs increases volatility which increases standard deviation in earnings, which increases Beta
* An increased percentage in fixed costs increases the change in EBITDA (between good and bad demand – see example)
	+ EBITDA is a proxy for cash flows

Measuring the Impact of Operating Leverage

* There are 2 Approaches to Measuring Operating Leverage:
1. Pre-Tax Cash Flow Operating Leverage
	* + If I increase sales by 1%, how much will cash flow increase (as a %)?

$$Cash Flow Operating Leverage=1+\frac{FC}{EBITDA}$$

* + - If the firm can increase sales by 1%, they will increase CF by \_\_%
1. Accounting Operating Leverage

Break-Even Analysis

* There are 2 Basic Break-Even Approaches:
1. Cash Flow Break-Even
	* + EBITDA Break-Even: The number of units the firm needs to break even on cash flows
		+ Break-Even Quantity: the number of units needed to recover fixed costs

$$Breakeven=\frac{FC}{P-VC}=\frac{FC}{CM}$$

* + - Cross-Over Level of Unit Sales: unit sales required to favor the higher fixed cost alternative
1. Accounting Break-Even
	* + - Just adds in depreciation and amortization

PERSONAL FINANCE

So far, we’ve learned to value stocks and bonds for investors. Now, we take a step back and look at how to get started investing

There are 6 Basic Types of Investments You Can Find on Wall St:

1. Individual Stocks
2. Individual Bonds
3. Mutual Funds: a portfolio of stock
	* Minimum investment of $1500-$3000
4. Exchange Traded Funds (ETF): a basket of goods that trades all day long, like stocks
	* Minimum investment of $100
	* Very liquid
5. Options: the right to buy/sell an asset at a set price
	* You want there to be big volatility when buying options
	* There are 2 Types of Options:
6. Call Option (“long”): the right to buy at a certain price
	* + - You are basically betting that the price is going to go up
7. Put Option (“short”): the right to sell at a certain price
	* + - You are basically betting that the price is going to fall
8. Commodities: buying gold, platinum, or silver

There are 6 Ways to Invest in the Market:

1. Full Service Broker (wealth manager)
	* Fees are 1% of managed assets
	* Use this when you want nothing to do with your money
2. Limited Service Broker
	* Less fees, less advice
3. Online Trading:
	* Companies like E-Trade and Scottrade
	* Cheap
4. App-Based Trading
	* Platforms called Acorn or Robinhood
5. Mutual Fund Company
	* You can buy directly from a mutual fund company
	* Ex: Vanguard
6. DRIP (Dividend Reinvestment Plan)
	* Very cheap but can only trade once a month
		+ Low cost, low liquidity

Advantages and Disadvantages of These Accounts:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Commissions | Liquidity | Investment Options | Advice |
| Full | High | High | Many | Good |
| Limited | Medium | Medium | Many | Good but self-directed |
| Online | Low | Medium | Many | Good but self-directed |
| App-Based | Low | Medium | Many | Good but self-directed |
| Mutual Fund | Varies | Low | Limited | Limited |
| DRIP | Very Low | None | None | None |

How Does a Mutual Fund Work?

* You are investing in a mutual fund company
	+ The fund pools from many different investors
	+ The fund buys assets that meet the objectives of the mutual funds
* When you start work, you will create a 401K Account, which is a retirement fund
	+ Most choices to invest in are mutual funds
	+ Advice #1: invest at least to the company match percentage
	+ Advice #2: Understand the types of funds

Types of Mutual Funds

1. Index Fund
* Targets assets from a specific market index
* Ex: the S&P 500 Index targets 500 of the largest firms in the US economy
* Fully diversified
1. Growth Fund
* Targets firms with growth potential (aggressive, mid cap, small cap)
* Riskier than an Index Fund but makes good returns over time
1. International Fund
* Targets firms in various geographic locations
* Fully diversified
1. Income Fund
* Targets stocks, bonds, and RE
* Invest in this when looking for a steady cash flow or income
	+ Lower risk, lower return
		- Favored retirees
1. Sector Fund
* Targets firms within a certain industry
* Ex: REIT, technology, healthcare, energy
* Not diversified
	+ Be careful because if an industry tanks, your fund will tank

2 Mutual Fund Keys:

1. Load or No Load
* Load has a participation fee of 2%-7%
	+ Can be negotiated
1. Portfolio turnover or Management Fees
* Fund managers make trades within the funds
	+ The higher the number of trades, the higher the commission

Vanguard and Fidelity have no load or fees