Sprint 2019 Study Guide For Midterm

Terms with explanation

The mid term test is on Friday, March 15. All You need to bring to class that day are a couple of pens or pencils. Standard Academic rules apply. The test will be 20 multiple choice/ fill in the blank. An example follows:

```
  5. [10pt] The purpose of financial markets is to: <br>
         A. Increase the price of common stocks. <br>
         B. Control inflation. <br>
         C. Lower the yield on bonds. <br>
         D. Allocate savings efficiently. <br>
```

These are the terms you will need to study. The terms come from our in-class lectures and discussions, looking over your notes from class will be useful.

There will be 4 or 5 coding questions after the multiple choice section.

1. Cash: Cash is also known as money, in physical form. Cash, in a corporate setting, usually includes bank accounts and marketable securities, such as government bonds and banker's acceptances. Although cash typically refers to money in hand, the term can also be used to indicate money in banking accounts, checks or any other form of currency that is easily accessible and can be quickly turned into physical cash.

   Cash in its physical form is the simplest, most broadly accepted and reliable form of payment, which is why many businesses only accept cash. Checks can bounce and credit cards can be declined, but cash in hand requires no extra processing. However, it's become less common for people to carry cash with them, due to the increasing dependability and convenience of electronic banking and payment systems.

   In finance and banking, cash indicates the company's current assets, or any assets that can be turned into cash within one year. A business's cash flow shows the net amount of cash a company has, after factoring in both incoming and outgoing cash and assets, and can be a good resource for potential investors. A company's cash flow statement shows all incoming cash, such as net income, and outgoing cash used to pay expenses such as equipment and investments.

2. Stock: You have probably heard a popular definition of what a stock is: "A stock is a share in the ownership of a company. Stock represents a claim on the company's assets and earnings. As

you acquire more stock, your ownership stake in the company becomes greater." Unfortunately, this definition is incorrect in some key ways.

To start with, stock holders do not own corporations; they own shares issued by corporations. But corporations are a special type of organization because the law treats them as legal persons. In other words, corporations file taxes, can borrow, can own property, can be sued, etc. The idea that a corporation is a "person" means that the corporation owns its own assets. A corporate office full of chairs and tables belong to the corporation, and not to the shareholders.

This distinction is important because corporate property is legally separated from the property of shareholders, which limits the liability of both the corporation and the shareholder. If the corporation goes bankrupt, a judge may order all of its assets sold – but your personal assets are not at risk. The court cannot even force you to sell your shares, although the value of your shares will have fallen drastically. Likewise, if a major shareholder goes bankrupt, she cannot sell the company's assets to pay off her creditors.

What shareholders own are shares issued by the corporation; and the corporation owns the assets. So if you own 33% of the shares of a company, it is incorrect to assert that you own one-third of that company; it is instead correct to state that you own 100% of one-third of the company's shares. Shareholders cannot do as they please with a corporation or its assets. A shareholder can't walk out with a chair because the corporation owns that chair, not the shareholder. This is known as the "separation of ownership and control."

3. What is a P&L: The profit and loss statement is a financial statement that summarizes the revenues, costs and expenses incurred during a specified period, usually a fiscal quarter or year. P&L statement is synonymous with the income statement. These records provide information about a company's ability or inability to generate profit by increasing revenue, reducing costs or both. Some refer to the P&L statement as a statement of profit and loss, income statement, statement of operations, statement of financial results or income, earnings statement and expense statement.

   P&L statement is synonymous with the income statement. The income statement summarizes income and expenses. These records provide information about a company's ability or inability to generate profit by increasing revenue, reducing costs or both The balance sheet shows assets, liabilities, and owner's equity. The cash flow statement summarizes your incoming and outgoing money from operations, investing, and financing.

   Income statement vs. balance sheet: The income statement answers whether the business is profitable whereas the balance sheet shows what a company is owed and what it owns.

4. Long on Cash, Long in a Stock : this means that you have lots of cash, or that you own some of a stock. A long (or long position) is the buying of a security such as a stock, commodity or currency with the expectation that the asset will rise in value. In the context of options, long is the buying of an options contract. An investor that expects an asset's price to fall will go long on a put option, and an investor that hopes to benefit from an upward price movement will be long a call option.

   Very often you will read in a "disclosure" section that a person is "Long on ..., ...". This is to disclose that if they are saying good things about a company that they have a self-interest in you purchasing shares in the company. For a person writing professionally this is a legal requirement.

5. "Take a position in"... The state of owning or owing a security or other asset. One has a long position when one owns something, while one has a short position when something is sold, especially sold short.

6. Real Estate: Land and the improvements on it. Real estate is one of the primary (and indeed one of the only) assets whose value does not depreciate over time. Depending on the particular title, ownership of real estate may include mineral rights to any geophysical aspects occurring thereon. Ownership of real estate does not automatically include the right to develop it, depending on local regulations. However, development of real estate (for example by building a house on it) usually increases the value. While supply of real estate does not vary, demand may change greatly depending on its particular features, number of people in the area, and cultural differences regarding land ownership. It is an attractive form of collateral because it cannot be stolen or destroyed.

7. What is Inflation? Inflation is the rate at which the general level of prices for goods and services is rising and, consequently, the purchasing power of currency is falling. Central banks attempt to limit inflation — and avoid deflation — in order to keep the economy running smoothly.

8. REIT (Real Estate Investment Trust) - legally required to pay out 80% of profits to investors. A real estate investment trust, or REIT, is a company that owns, operates or finances income-producing real estate. For a company to qualify as a REIT, it must meet certain regulatory guidelines. REITs often trades on major exchanges like other securities and provide investors with a liquid stake in real estate.

9. Price to Earnings Radio - In essence, the price-earnings ratio indicates the dollar amount an investor can expect to invest in a company in order to receive one dollar of that company's earnings. This is why the P/E is sometimes referred to as the price multiple because it shows how much investors are willing to pay per dollar of earnings.

There will be a question on how to calculate a PE ratio on the test. The formula for calculating it will be on the test.

10. What is a Derivative? In finance, a derivative is a contract that derives its value from the performance of an underlying entity. This underlying entity can be an asset, index, or interest rate, and is often simply called the "underlying."

11. High speed trading: High-frequency trading - HFT is a program trading platform that uses powerful computers to transact a large number of orders at fractions of a second. It uses complex algorithms to analyze multiple markets and execute orders based on market conditions. Typically, the traders with the fastest execution speeds are more profitable than traders with slower execution speeds.

12. Dividends: A dividend is a distribution of a portion of a company's earnings, decided by the board of directors, paid to a class of its shareholders. Dividends can be issued as cash payments, as shares of stock, or other property.

13. What is the "Yield"? In finance, the yield on a security is the amount of cash (in percentage terms) that returns to the owners of the security, in the form of interest or dividends received from it. Normally, it does not include the price variations, distinguishing it from the total return.

    There will be a question on calculating the Yield from the stock price and the amount of dividends on the test.

14. What is a basis point (BPS)? Example 50 BSP = 0.5%: Basis points, otherwise known as bps or "bips," are a unit of measure used in finance to describe the percentage change in the value or rate of a financial instrument. One basis point is equivalent to 0.01% (1/100th of a percent) or 0.0001 in decimal form.

    There will be a question of converting 75 BSP to a percentage on the test.

15. Stock Buy Back: A stock buyback, or repurchase, occurs when a company buys its own shares off the market and therefore reduces the amount of stock outstanding. It can do this in one of two ways: The company can either buy shares at current market prices or tender a fixed-price offer to current shareholders.

    Stock buy backs are a good indication that the company believes that its stock is a good investment. Also this is a way for the company to directly influence the price of the stock. Fewer shares sell for more for each share. This also will increase the dividends that are payd out.

    Stock buy backs are a bad thing when the company has to borrow to pay for them.

16. Index Fund: An index fund is a type of mutual fund with a portfolio constructed to match or track the components of a market index, such as the Standard & Poor's 500 Index (S&P 500). An index mutual fund is said to provide broad market exposure, low operating expenses and low portfolio turnover.

17. Insider Trading: Insider trading is the trading of a public company's stock or other securities (such as bonds or stock options) by individuals with access to nonpublic information about the company. In various countries, some kinds of trading based on insider information is illegal.

18. Bonds: A bond is a fixed income investment in which an investor loans money to an entity (typically corporate or governmental) which borrows the funds for a defined period of time at a variable or fixed interest rate. … Owners of bonds are debtholders, or creditors, of the issuer.

19. ICOs (Initial Coin Offering): An initial coin offering or initial currency offering is a type of funding using cryptocurrencies. Mostly the process is done by crowdfunding but private ICO's are becoming more common.

20. "Industrial Staker Sale" a token sale under a different name that isn't ICO.

21. Proof-of-Work describes a system that requires a not-insignificant but feasible amount of effort in order to deter frivolous or malicious uses of computing power, such as sending spam emails or launching denial of service attacks.

    In blockchain a proof of work is a race that is payed for to get a reward. This is how Bitcoin has been distributed.

22. Proof-of-Stake concept states that a person can mine or validate block transactions according to how many coins he or she holds. This means that the more Bitcoin or altcoin owned by a miner, the more mining power he or she has.

    The "stake" is at risk when mining occurs. If the miner lies then it looses some or all of its stake.

23. "Consumer Token Sale": Token sales are, quite simply, a process of generating and selling a new cryptocurrency. While the details change from sale to sale, this process involves building a smart contract on the blockchain, generating, and then selling the resulting coins.

24. Junk Bonds refers to high-yield or non-investment-grade bonds. Junk bonds are fixed-income instruments that carry a credit rating of BB or lower by Standard & Poor's, or Ba or below by Moody's Investors Service. Junk bonds are so called because of their higher default risk in relation to investment-grade bonds.

25. Mutual Fund is an investment vehicle made up of a pool of money collected from many investors for the purpose of investing in securities such as stocks, bonds, money market

instruments and other assets. … A mutual fund's portfolio is structured and maintained to match the investment objectives stated in its prospectus.

Mutual funds have both a managed and an index variety. Usually the costs of a managed mutual fund and the tax that you pay on it will make it less profitable than an index fund. Consider the returns on the Vanguard S&P 500 index fund over the last 25 years. Only 1% of managed mutual funds have out performed the Vanguard S&P 500 Fund.

26. Asset allocation refers to the strategy of dividing your investments among different asset categories, such as stocks, bonds, real estate, cash, and cash alternatives. Asset allocation aims to control risk by diversifying an investment portfolio.
27. Expense Ratio for a Mutual Fund. The expense ratio, also known as the management expense ratio (MER), measures how much of a fund's assets are used for administrative and other operating expenses. An expense ratio is determined by dividing a fund's operating expenses by the average dollar value of its assets under management (AUM).
28. Prospectus. A prospectus, in finance, is a disclosure document that describes a financial security for potential buyers. … In the context of an individual securities offering, such as an initial public offering, a prospectus is distributed by underwriters or brokerages to potential investors.
29. Pro Forma: Pro forma is a Latin term that describes a method of calculating and presenting financial results to emphasize either current or projected figures. Pro forma literally means "for the sake of form" or "as a matter of form." In the world of investing, pro forma refers to a method by which firms calculate financial results. This method of calculation emphasizes present or projected figures.
30. KYI - Know Your Investor (See SEC 506(d)).

    You can have up to 34 friends and family as an exemption.
31. Accredited Investor. An accredited investor is a person or entity that can deal with securities not registered with financial authorities by satisfying one of the requirements regarding income, net worth, asset size, governance status or professional experience. The term is used by the Securities and Exchange Commission (SEC) under Regulation D to refer to investors who are financially sophisticated and have a reduced need for the protection provided by regulatory disclosure filings. Accredited investors include natural individuals, banks, insurance companies, brokers and trusts.
32. Going Public. Going public refers to a private company's initial public offering (IPO), thus becoming a publicly traded and owned entity. Businesses usually go public to raise capital in

hopes of expanding. Venture capitalists may use IPOs as an exit strategy (a way of getting out of their investment in a company).

33. Money Laundering. Money laundering is the process of creating the appearance that large amounts of money obtained from criminal activity, such as drug trafficking or terrorist activity, originated from a legitimate source. The money from the illicit activity is considered dirty, and the process “launders” the money to make it look clean.
34. Cost of “going public.” Going public is the process of selling shares that were formerly privately held to new investors for the first time. Otherwise known as an initial public offering (IPO). Going public is very expensive. Usually a company today needs $250,000,000.00 in revenue to justify going public. Before Enron it was common to see companies go public with a revenue of $10,000,000.00 a year.

Go Related

for

Different syntax and ways for loops can be used in Go code. How do you build an infinite loop wit a for in go. What are `break` and `continue` in a loop.

See: https://gobyexample.com/for

Functions and Multiple Return Values

Examples of returning more than one value from a function. How to declare a function.

See: https://gobyexample.com/multiple-return-values

Maps

```
package main

import "fmt"

func main() {

	m5 := make(map[string]string)

	m5["star trek"] = "yes"
	m5["star wars"] = "no"
```

```
        m5["ghostbusters"] = "no"
        m5["star trek original"] = "yes"

        fmt.Printf("m5 in: %+v\n", m5)

        for key, value := range m5 {
                m5[key] = string.ToUpper(value)
        }

        go func() {
                delete(m5,"ghostbusters")
        }()

        fmt.Printf(": %+v\n", m5)
}
```

See: https://gobyexample.com/maps

Be able to modify the above map so that it has a lock and prevents concurrent access to the map. In lecture 05 look at the use of Lock and Unlock.

Be able to change the above code to wait for the completion of the go-routine running. In lecture 07 there is an example, ex0.go.

Slices and Arrays

See: https://gobyexample.com/slices

Be able to create a sub-slice of an existing slice. Suppose that you have a string:

```
        var s string
        s = "http://127.0.0.1:8000/"
```

You want the first 5 characters to see if this is a `http:` or a `https` connection.

```
        if s[0:5] == "http:" {
```

Interfaces

See: https://gobyexample.com/interfaces

Be able to write a simple interface that has a function.

Closure

See: https://gobyexample.com/closures

Be able to write a simple closure.