**BUS 322 S22 Quiz 2**

**Notes**

**as of 3/26/22**

**THE CONCEPT of RISK**

**1. Risk:** the variability of returns associated with a given assets. A chance of financial loss.

**2. Portfolio:** a collection, or group of assets

**3. Return:** the total gain or loss experienced on an investment over a given period of time; calculated by dividing the asset’s cash distributions during the period, plus change in value, by its beginning of period value

**4. Risk averse:** the attitude toward risk in which an increased return will be required for an increase in risk.

**5. Sensitivity analysis:** an approach for assessing risk that uses several possible return estimates to obtain a sense of the variability among outcomes

**6. Range:** a measure of asset’s risk, which is found by subtracting the pessimistic (worst) outcome from the optimistic

**7. Probability:** a chance that a given outcome will occur

**8. Probability distribution:** a model that relates probabilities to the associated outcomes

**9. Continuous probability distribution:** a probability distribution showing all possible outcomes and associated probabilities for a given event

**10. Standard deviation:** the most common statistical indicator of an asset’s risk; it measures the dispersion around the expected value

**11.Coefficient of variation:** a measure of relative dispersion that is useful in comparing the risks of assets with differing expected returns

**12. Efficient portfolio:** a portfolio that maximizes return for a given level of risk or minimizes the risk for a given level of return

**13. Political risk:** risk that arises from the possibility that political turmoil will endanger the invested capital

**14. Total risk:** the combination of a non-diversifiable risk and diversifiable risk

**15. Diversifiable risk:** the portion of an asset’s risk that is attributable to firm specific causes. It is called unsystematic risk

**16. Non-diversifiable risk:** the relevant portion of an asset’s risk attributable to market factors that affect all firms. It cannot be eliminated through diversification. Also called “systematic risk”

**17. Beta coefficient:** a relative measure of non-diversifiable risk. An index of the degree of movement of an asset’s return in response to a change in the market return. The betas are calculated using historical data. When managers use betas for decision making, they should recognize that past performance may not accurately predict future performance

**18. Efficient market:** a market with the following characteristics: many small investors, all having the same information and expectations with respect to securities, no restrictions on investment, not taxes, and no transaction costs, and rational investors who view securities similarly and are risk averse, preferring higher returns and lower risk

**19. Focus on value:** a firm’s risk and expected return directly affect its share price. Risk and return and the key determinants of the firm’s value. It is therefore the management responsibility to carefully assess the risk and return of all major decisions so as to ensure that the expected returns justify the level of risk being introduced. Managers need to recognize, measure, and evaluate risk-return tradeoffs to ensure that their decisions contribute to the creation of value for owners.

**20. Risk and Returns:** the way management can expect to achieve the firm’s goal of increasing its share price (and therefore benefiting its owners) is to take only these actions that earn returns that at least commensurate with their risk and are higher than the firm’s cost of capital.

**21.Value Creation:** by focusing on value creation and by managing and monitoring the firm’s cash flow and risk, management should be able to achieve the firm’s goal of share price maximization

**22. Share Price:** the price of each share of a firm’s common stock is the value of each ownership interest. The value of the common stockholders’ claims is embodied in the cashflows that are entitled to receive from now to infinity. The present value of these expected cash flows is the firm’s share value

**23. Present Value (PV):** to determine the PV, forecast cash flows are discounted at the rate that reflects their risk. Riskier cashflow is discounted at a higher rate, resulting in lower present values than less risky expected cash flows., which are discounted at lower rates

**24. Share Value**: The value of the firm’s common stock is therefore driven by its expected cashflow (returns) and risk (certainty of the expected cashflows)

**SOURCES of RISK**

**25. Firm-specific risks: business risk, financial risk:**

**Business risk:-**the chance that the firm will be unable to cover its operating costs. The level of this risk is driven by the firm’s revenue stability and the structure of its operating costs (fixed vs. variable)

**Financial risk:-**the chance that the firm will be unable to cover its financial obligations. The level of this risk is driven by the predictability of the firm’s operating cashflows and its fixed cost financial obligations

**26. Shareholder-specific risk: interest rate risk, liquidity risk, market risk**

**Interest rate risk:-**the chance that changes in interest rates will adversely affect the value of an investment. Most investments lose value when the interest rate rises and increase in value when it falls

**Liquidity risk:** the chance that an investment cannot be easily liquidated at a reasonable price. Liquidity is significantly affected by the size and depth of the market in which an investment is customarily trade

**Market risk:** the chance that the value of an investment will decline because of market factors that are independent from investment (such as economic, political, and social events). In general, the more a given investment’s value responds to the market, the greater the risk; the less it responds, the smaller its risk

**27. Firm and Shareholder Risk: e vent risk, exchange rate risk, purchasing power risk, tax risk**

**Event risk:** the chance that an unexpected event will have a significant effect on the value of the firm or a specific investment. Example, government dictated actions

**Exchange rate risk:** the exposure of future expected cashflows to fluctuations in the currency exchange rates. The greater the chance of undesirable exchange rate fluctuations, the greater the risk of the cashflows and therefore the lower the value of the firm’s investment

**Purchasing power risk:** the chance that changing price levels caused by inflation or deflation in the economy will adversely affect the firm’s or investment’s cashflows and values. Typically, firms or investments with cashflows that move with general price levels have a low purchasing power risk, and those with cash-flows that do not move with general price level have a high purchasing power risk

**Tax risk:** the chance that unfavorable changes in tax laws will occur. Firms and investments with values that are sensitive to tax law changes are riskier

**28. Risk profile:** the probability distribution of the possible payoffs associated with the decision alternative or decision strategy

**29. Risk analysis:** the study of the possible payoffs and probabilities associated with a decision alternative or a decision strategy

**30. Risk premium:** is a difference between the expected value of the lottery and guaranteed payoff the decision maker is willing to pay.

**UTILITY THEORY**

**31. Utility:** a measure of the total worth of consequences reflecting a decision maker’s attitude toward considerations such as profit, loss, risk. It is measure of personal satisfaction derived from money

**32. Utility function of money:** a curve that depicts the relationship between monetary value and utility. One is not more important than the other.

**33. Expected utility (EU):** the weighted average of utilities associated with a decision alternatives. The weights are the state of nature alternatives

**34. Risk avoider:** a decision maker who would choose a guaranteed payoff over a lottery with a better expected payoff. People who forgo a high expected value to avoid disaster with low probabilities

**35. Risk taker:** a decision maker who would choose lottery over a better guaranteed payoff. People who take a chance on a bonanza with a very low probability of occurrence in lieu of a sure thing

**36. Risk neutral:** a decision maker who is neutral to risk. For the decision maker the decision alternative with the best expected monetary value is identical to the alternative with the highest expected utility

**37. Utility Assessment:** the process of determining the utility of various outcomes. This is normally done using a standard gamble between any outcome for sure and a gamble between the worst and best outcomes

**38. Utility curve:** a graph or curve that reveals the relationship between utility and monetary value. When this curve is constructed, utility values from the curve can be used in the decision-making process

**DECISION ANALYSIS**

**39. Two Decision situations:** 1) Probabilities can be assigned to future occurrences and 2) probabilities that cannot be assigned

**40. A state of nature:** is an actual event that may occur in the future

**41. Chance event:** an uncertain future event affecting the consequences, or payoff, associated with a decision

**42. Consequences:** the results obtained when a decision alternative is chosen, and a chance event occurs. A measure of the consequences is often called a payoff

**43. Decision alternatives:** options available to the decision maker. The selected criterion is dependent on the risk personality and philosophy of the decision maker

**44. Decision strategy:** a strategy involving a sequence of decisions and chance outcomes to provide the optimal solution to a decision problem

**45. Expected value:** it is the weighted average of the payoffs. The weights are the state of the nature probabilities.

**46. Conservative approach:** an approach to choosing a decision alternative without using probabilities

**47. Maximax:** a maximization approach, selects the alternative with the highest possible return

**48. Maximin:** a minimization approach that. It leads to choosing the decision alternative that maximizes the minimum payoff.

**49. Expected value of perfect information (EVPI):** the expected value of information that would tell the decision maker exactly which state of nature is going to occur (i.e., perfect information). Is the maximum amount a decision maker would pay for additional information. EVPI equals the expected value, given perfect information, minus the expected value without perfect information

**50. Expected value of sample information (EVSI):** the difference between the expected value of an optimal strategy based on sample information and the “best” expected value without any sample information

**51. Opportunity loss, or regret:** the amount of loss (lower profit or higher cost) from not making the best decision for each state of nature. Minimax regret is a criterion that minimizes the maximum opportunity loss

**52. Payoff:** a measure of consequences of a decisions such as profit, cost, or time. Each combination of decision alternative and state of nature has an associated payoff (consequences)

**53. Payoff table:** a tabular representation of the payoffs for each decision problem

**54. State of nature:** the possible outcomes for chance event that affect the payoff associated with a decision alternative

**55. Efficiency:** the ratio of EVSI to EVPI as a percentage; perfect information is 100% efficient

**56. Bayes’ theorem:** a theorem that enables the use of sample information to revise prior probabilities. In Bayesian analysis additional information is used to alter the marginal probability of the occurrence of an event

**57. Prior probabilities:** the probabilities of the state of nature prior to obtaining sample information

**58. Posterior probabilities:** is the altered marginal probability of an event, based on additional information

**59. Risk premium:** the difference between the expected value of the lottery and the guaranteed payoff the decision maker is willing to pay

**60. The Hurwicz criterion:** a compromise between the maximax and maximin criteria. It multiplies the best pay-off by the coefficient of optimism and the worst payoff by the complement of the coefficient of optimism, for each decision, and the best result is selected

**61 LaPlace:** the equal likelihood. This criterion multiples the decision payoff for each state of nature by equal weights

**62. Dominant decision:** is the one that has a better payoff than another decision under each state of nature

**63. Decision-making with Certainty:** it is a decision-making environment in which the future outcomes are unknown, decisions are made based on historical information, this is a forensic decision-making environment, assumes that the certainty of the past events can be applied to the future events.

**64. Decision-making with Uncertainty:** is a decision-making environment in which several outcomes or states of nature may occur, and the probabilities of these outcomes are unknown

**65. Decision-making with Risk:** is a decision-making environment in which the probabilities of future outcomes are known, and the underlying system is stable

**GAME THEORY**

**66. Game theory:** the study of decision situations in which two or more players compete as adversaries. The combination of strategies chosen by the players determines the value of the game to each player

**67. Dominant strategy:** a strategy is dominant if another strategy is at least as good for every strategy that the opposing player may employ. A dominated strategy will never be selected by the player and as such can be eliminated in order to reduce the size of the game

**68. Lottery:** a hypothetical investment alternative with a probability of “p” of obtaining the best payoff and a probability of (1-p) of obtaining the worst payoff

**69. Mixed strategy:** a game solution in which the player randomly selects the strategy to play from among several strategies with positive probabilities. The solution to the mixed strategy game identifies the probabilities that each player should use to randomly select the strategy to play

**70. Pure strategy:** a game solution that provides a single best strategy for each player

**71. Saddle point:** a condition that exists when pure strategies are optimal for both players in a two-person, zero-sum game. The saddle point occurs at the intersection of the optimal strategies for the player, and the value of the saddle point is the value of the game

**72. Zero-sum games:** a game with two players in which the gain to one player is equal to the loss to the other player