**Chapter Preview: Chapter 10**

**19102127**

**ITM Suho Lee**

**Answer the following questions briefly.**

**Q. How to measure the risk?**

* Using the standard deviation (volatility)
* Risk has two types – Common & Independent
* Independent risk can eliminate through diversification of investment.
* Now we have only one “Common Risk”.
* How to measure only for the “Common Risk” = There’s no answer.
* But, indirectly measure the “Common Risk” = Beta
* Beta is for the measure the “Systematic Risk” to determine the risk premium.

1. Volatility (변동성)

= standard deviation of a return

= refers to the degree of variation or fluctuation in the price or value of a financial asset over a period of time.

= High volatility implies that the price or value of the asset can change rapidly in a short period of time, while low volatility indicates stability and predictability.

1. Common risk, independent risk (공통위험, 독립위험)

**Common risk** = Common risk is also known as systematic risk and refers to the risks that are *inherent in the overall market or economy* and cannot be diversified away.

**Independent risk** = unsystematic risk and refers to the risks that are *unique to a particular company or industry* and can be reduced through diversification.

1. Firm-Specific, Systematic Risk (기업특정위험, 시장전반적위험)

Firm-specific = independent risks, risks are unrelated across stocks

risk that is specific to an individual company and is caused by factors such as management decisions, competitive pressures, and so on.

Systematic Risk = for each stock will average out and be diversified.

risk that affects the entire market or economy and is caused by factors such as changes in interest rates, inflation, geopolitical events, and so on.

1. Risk premium (위험 프리미엄)

: It is the additional return that investors expect to earn for taking on additional risk when compared to a risk-free asset such as government bonds.

1. Market risk premium (시장 위험 프리미엄)

: It is the difference between the expected return of the market as a whole and the risk-free rate of return.

: It includes the investor’s risk about patience so which determines the market price of risk in the economy.

1. Efficient portfolio and a market portfolio. (효율적 포트폴리오, 시장 포트폴리오)

: An efficient portfolio is a portfolio of assets that offers the highest expected return for a given level of risk or the lowest level of risk for a given expected return.

: **The efficient portfolio which can maximize the expected return in a given risk or Minimize the risk in a given expected return. => 교수님의 정의**

: A market portfolio is a portfolio that contains all of the assets in the market and is often used as a benchmark for measuring the performance of other portfolios.

: **maximizing diversified portfolio**

2. Explain why the risk premium of diversifiable risk is zero.

: The risk premium of diversifiable risk is zero because diversifiable risk, also known as unsystematic risk or company-specific risk, can be reduced or eliminated by diversifying the portfolio.

: The firm specific risk is diversified by variance so that they can earn profit without any risk.

In this situation, they borrow the money and invest to this portfolio, then, they can earn a high return with less risk. After that, Many people can find this change of “Arbitrage” and gathered. The firm’s value is increased and expected return will be decreased until the law of one price is applied. Therefore, risk premium of diversifiable risk is zero.

3. Define the beta of a security.

: **measure the systematic risk of a security to determine the risk premium** by calculating the sensitivity of the security’s return to the return of the market portfolio, known as the beta (b) of the security.

: The beta of a security is the expected % change in its return given a 1% change in the return of the market portfolio.

4. How can you use a security's beta to estimate its cost of capital?

: The beta of a security is used by investors *to determine the level of risk associated with that security and to estimate its expected return.*

: The beta represents the sensitivity of the security's returns to changes in the market returns.

: A beta of 1 indicates that the security has the same volatility as the market, while a beta greater than 1 means that the security is more volatile than the market, and a beta less than 1 means that the security is less volatile than the market.

: A beta of 0 indicates that the security is not correlated with the market.