

The development of capm finance essay

Finance



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-Introduction

In finance, the essential question is how the risk in investment would affect the expected return. The Capital Asset Pricing Model (CAPM) is a way to demonstrate the relationship between the risk of a specific asset or stock portfolio and the expected return to the investors in a reasonable equilibrium market. Although at first sight it just looks like an ordinary formula, the capital asset pricing model stands for an historic achievement to understand and quantify that risk is not at all simple. Conceived and developed by economist William Sharpe (1964), Jack Treynor (1962), John Lintner (1965) and Jan Mossin (1966). CAPM has been acclaimed, assessed, doubted and attacked by economists ever since. Even so, today the CAPM is still widely recognized and employed in application range from business capital budgeting to setting public utility rates. Because of the insights it gives into capital markets and it is sufficient for many important industries and applications. In this paper will discuss what CAPM is and analyze partly from theory and empirical test. In addition, this paper will probe into the CAPM's practical use.

-The Development of CAPM

The CAPM builds on the model of portfolio theory developed by Harry Markowitz (1952). He showed that a portfolio has expected return and risk. Expected return is related to the securities' expected return while risk is more complex. Risk is related to the risks of the individual components the same as the correlations what makes risk a complicated feature that human beings have trouble to handle. If we put evaluate of risk and return relevance into a certain given condition and find efficient portfolios, in this way, we can

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get more return for a given risk and less risk for a given return. He also proposed "all the eggs should not be placed in the same basket". According to his portfolio selection, the complicated and multidimensional problem of portfolio choice with reference to a great quantity of diverse assets is reduced to a conceptually ordinary two-dimensional problem that known as mean-variance analysis. According to the Harry Markowitz (1952) the model of portfolio selection, William Sharpe (1964) and John Lintner (1965) invented the Capital Asset Pricing Model (CAPM). The CAPM divides the risk influencing an asset's expected return into two categories, one type is unsystematic risk or specific risk, and the long-term average returns for this typical risk should be naught. Another type is due to general economic uncertainty, CAPM asserts that the risk is priced by rational investors is systematic risk, because that risk cannot be eliminated by diversification when an investor holds the market portfolio that each individual asset in the portfolio entails specific risk. CAPM is a model that attempts to describe the relationship between the risk and the expected return of an investment that is used to determine an investment's suitable price. The formula used to create CAPM is the expected return of a stock equals the risk-free rate plus the portfolio's risk premium multiplied by the expected excess return of the market portfolio. The CAPM demonstrates that risks can be used in the capital market that risks can be traded and assessed. The prices of risky assets are adjusted to make portfolio decisions become more corresponding by this means. CAPM has been doubted and attacked by economists all the time. Although in the early empirical test, the Black (1972) version of the CAPM which can adapt to a tradeoff of average return for market beta has some success, after that the later research begins to expose variables like <https://assignbuster.com/the-development-of-capm-finance-essay/>

various price ratios and size that add to the interpretation of average returns provided by beta. The problems are severe enough that invalidate a majority of applications of the CAPM (Eugene F. Fama and Kenneth R. French 2004). A large amount of recent empirical tests of the CAPM state that there are many obviously disadvantages of explanation of the model, they also argued the stock returns are more reasonably related to the total variability and book value of the stock rather than a beta calculated. The problems are serious enough to invalidate most applications of the CAPM. Despite limitations the CAPM remains the best explanation of long-term tradeoffs between risk and return in the capital markets. In spite of a minority of investors practically utilize the CAPM without any modification, its theories are quite valuable and function as a sufficient guide for the average long-term investors. CAPM is successful in forecasting the price of individual assets and providing a rational illustration of asset prices that the expected return is proportional to the systematic risk and the expected excess return to the market.

-CAPM's Practical use

The capital asset pricing model of using the model provides about the market pricing of securities and expectation return rate determination of thoughts, it can also be widely used in the investment management and corporate finance. Its many uses make it popular among investment practitioners. (a) Used for risk investment decision. A calculated risk adjusted rate of capital asset pricing model provides with the portfolio theory a single securities risk measurement index to help investors expect a single asset undiversifiable risk. This model can be expressed as: the expected return on investment (or expected return rate) = risk-free return rate + risk return rate

= risk-free rate of return rate + risk premium oblique x risk degree of risk degree with standard deviation and variation coefficient of measurement. Risk/reward slope depends on the investor's risk aversion attitude can be measured by statistical method. The model is used for risk investment project decision, the most commonly used method is the risk-adjusted discount rate method. The basic idea of this method is for high-risk projects that use a higher discount rate (risk adjusted rate) to calculate the net present value, then the options according to the rules of net present value method. (b) Used for portfolio decisions in the capital asset pricing model is derived from the portfolio theory, and in turn for portfolio decisions. As mentioned earlier, a portfolio's beta coefficient is equal to the combination of the beta coefficient weighted average of the sum of the individual securities, capital asset pricing model can be expressed as: portfolio return rate = risk-free return rate + (the city average return on the risk of risk-free return rate) x portfolio's beta coefficient. The portfolio decision-making model is the basic method: firstly, determine the different securities portfolio B coefficient; Secondly, calculate the securities portfolio rate of return on risk of portfolio risk = (market average return on the risk of risk-free return rate) X portfolio's beta coefficient. Thirdly, the rate of return of each portfolio combined with the investor's risk attitude and the wind risk yield for a portfolio project decision-making. Or with one step calculation these securities portfolio return rate, compared with the lowest return rate expected to choose or not. For each level of expected return, we can solve for the portfolio combination of assets that has the lowest risk. Or for each level of risk, we can solve for the combination of assets that has the highest expected return. The efficient

frontier consists of the collection of these optimal portfolios, and each investor can choose which of these best matches their risk tolerance.

-Conclusion

Is Beta Dead?" Wallace (1980). S. Ross (1976) published a different model APT (Arbitrage Pricing Theory) and then the CCAPM (Consumption-based capital asset pricing model) appeared as an expansion of the CAPM, which prove CAPM has many limitations and expansibilities. In my view, who attempt to modify the CAPM is not negation of the model but expansion of the model. It is a recognition of the widely feasibility of the CAPM that plenty of individuals have transformed, improved, or modified it to accommodate the specific situations. So the CAPM is not dead. It is an essential contribution to our understanding of the critical factor of asset prices. Moreover, the model is applied widespread in practical research and become a significant basis for decision-making in different areas. CAPM will never die. The CAPM is considered the backbone of modern price theory in financial markets. And it will help many individuals to get inspiration from CAPM to promote the modern price theory and create a more efficient capital markets.