ONLINE LIBRARY
(www.onekhmer.org/onlinelibrary)

Title: Financial Economic

Name of Author	Sonariddh Mao
Name of University	Monash University
Country of Study	Australia
Major	Business Economics
Degree	Master
Course Title	Financial Economic
Type of Document	Assignment
Year	

1. **Please write an essay on why we have derivatives. Please include in your answer whether we should have derivatives and reasons why OR why not.**

The definition of a derivative instrument is the contract within two sides under certain conditions which include dates and the resulting values of the underlying variables. And the payments are to be made between the parties according to the values of the underlying variables(Rubinstein, 1999).

The idea of derivatives began from the 1900s when Bachelier considered to apply the development of continuous time finance to devise a way to model instantaneous random asset price movement(Stephen,nots5). The development of derivatives has not been significantly promoted until Black and Scholes (1973) discovered the fundamental partial differential equation to price an option using the CAPM . In addition, the alternative way found by Merton (1973a) also had exerted profound influences on it. According to Stephen ,as the model became available to the public, the liquidity and trading volume have risen dramatically.

In addition, reasons to demonstrate the presence of derivatives includes but not limited to the following aspects. The fundamental reason for establishing derivative system is to hedge against non-financial risks as well as alternative risk factors(Stephen). In the 1970s , with the breakdown of the Bretton Woods System as well as the depreciation of US currency ,the international monetary system shifted from the fixed exchange rate

system to floating exchange rate system. Especially because of the two oil cissies, many western countries as well as US fell in stagflation and high price level. In order to deal with the high inflation, US government had to take interest rate and exchanging rate as a instrument and tool, which further enlarged the fluctuation of financial market. Generally, the changing of interest rate exerts opposite effects on the price of securities, which directly influence the revenue of investors. In order to deal with the giant fluctuation together with the high risk of the financial market, business banks , investment organization and enterprises were forced to develop a financial tool, which can hedge risk. Subsequently, financial options , futures as well as other financial derivatives gradually came into being(Hunt & Kennedy, 2004).

Secondly, the financial deepening pointed by R.J.Mckinnon as well as E.S.Show in the 1980s further promoted the development of financial derivatives. With the concept of the financial liberalization widely accepted by authorities, relative laws, rules, regulations and administrative controls had been concealed or loosened to establish a new financial system which is more in line with the market operating mechanism. The financial liberalization not only promoted the competition in financial market but also made the fluctuation in share market and bonds market more frequent, which pushed investors to try to hedge risk. And the furious competition in return made business banks begin to consider derivatives as the potential profits resource(http://www.amgroup.com.hk/NewsView.Asp?ID=62).

The last main reason is the contributions of information communication techniques(ICTs). With the breakneck development of computer and communication technology , the widely use of computer network and the information processing in the international financial market makes more and more individuals and institutions engaged in the financial derivatives trading(http://www.amgroup.com.hk/NewsView.Asp?ID=62).

Although there is no deny that the use of derivatives reduces the cost of insurance together with allowing hedgers to lay off their risks on speculators because derivatives allow risk which is bound up with the price of the underlying asset to be transferred from one party to another (Stephen). It is argued that derivatives is dangerous and there seems to be various cases to bear witness to this. In order to protect derivative counterparties ,the use of derivatives to mask credit risk from third parties contributed to both the financial crisis of 2008 in the United States and the European sovereign debt crises in Greece and Italy(Simkovic, 2009). In addition, derivatives provide leverage as the fact that a small movement in the underlying value can result in a significant change in the value of the derivative(Shirreff, 2004).

According to Hull(2006), the term "Derivative" indicates that it has no independent value, i.e. its value is entirely "derived" from the value of the underlying asset. The underlying asset can be securities, commodities, bullion, currency, live stock or anything else. In other words, Derivative means a forward, future, option or any other

hybrid contract of pre determined fixed duration, linked for the purpose of contract fulfilment to the value of a specified real or financial asset or to an index of securities. As the meaning of "derivative", it just indicates there is no actual value together with derivatives because its value is entirely "derived" from the value of the underlying asset which include securities, commodities, bullion, currency, live stock or anything else. By and large, derivatives just means the pre determined fixed duration of hybrid contract ,such as a forward, future and option, connected with the contract fulfilment to the value of a specified real or financial asset or to an index of securities(Hull, 2006).It is somehow more like a gambling and zero-sum game and is not positive for the entire economy development.

Ipso facto from my perspective, we should not have derivatives or more stringent laws and controls should be taken to regulate the derivatives to make sure the actual economy not be hurt by derivatives.

2. Please write an essay about whether asset pricing theory matters. Please include in your answer a discussion of any pros and cons of asset pricing theory that come to mind.

A fundamental question in finance is how the expected return is affected by the potential risk of its investment(Perold, 2004). However, the Capital Asset Pricing Model (CAPM) provided the first coherent framework to address this problem. The model provides a rigorous demonstration from a classical economic perspective in

terms of uncertainty, the cost of capital includes a price of time as well as a price of risk(Stephen). To derive the static version of the model, the following assumptions must be made:1) All asset returns are joint normal 2) The same beliefs about the joint probability distribution of those returns is known and shared by investors 3) A utility function defined by the mean and variance of returns which is subjected to a wealth constraint is maximized by every investor 4) No taxes or transactions costs do not exist 5) As the existence of a risk free interest rate, individuals can engage in unlimited borrowing and lending 6) No limits on borrowing(Stephen).

There are generally two types of risks in this model, systematic risk(β) and unsystematic risk. Systematic risk is the risk associated with aggregate market returns while unsystematic risk is the company-specific or industry-specific risk in a particular portfolio, which is as a result not bound up with aggregate market returns(Sharpe, 1970). After isolating alpha, it shows that the alpha is the difference between the average excess return on asset i and the average excess return on the market portfolio multiplied by the beta. Ipso facto beta is the key element in the market model(Stephen).And it is shown that low beta stocks indicates better than the standard model predicts, while high beta stocks tend to do worse, so there is a negative relationship between beta and stock predicts(Stephen). According to Miller(2006), if a country's beta is not only positive but also greater (less) than one, it is riskier (safer) than the average investment opportunity around the world. If it is equal to one, the risk level is the same as the world market.

To calculate the expected return of a stock, two sorts of information are needed to be collected by the investors: the risk premium of the overall equity market and the stock's beta versus the market(Perold, 2004).

In terms of the applications of CAPM, it is widely used as follows:1) what the expected return of an asset does not depend on. 2) If an asset cannot be diversified away, its risk can be measured by beta. 3) In CAPM, there is no direct relationship between a stock's expected return and the growth rate of its expected future cash flows(Perold, 2004).

The CAPM is a useful method with profound implications for asset pricing and investor behaviour for three reasons. As what is pointed out by Perold in 2004," First, we can examine whether real world asset prices and investor portfolios conform to the predictions of the model, if not always in a strict quantitative sense, and least in a strong qualitative sense. Second, even if the model does not describe our current world particularly well, it might predict future investor behaviour-for example, as a consequence of capital market frictions being lessened through financial innovation, improved regulation and increasing capital market integration. Third, the CAPM can serve as a benchmark for understanding the capital market phenomena that cause asset prices and investor behaviour to deviate from the prescriptions of the model."

The drawbacks of CAPM, first of all, the 6 assumptions of CAPM are hard to be

achieved simultaneously, such as risk free and no tax .In addition, beta is relatively hard to be calculated accurately especially with the high speed of economic development. Besides, individuals tend to have fragmented portfolios or multiple portfolios rather than identical portfolios which is assumed before(Shefrin & Statman, 2000). In addition, CAPM is only suitable for capital market ,and the human asset cannot be bought and sold.

To sum up, the Capital Asset Pricing Model is a inter-temporal contribution to the understanding of the determinants of asset prices. Although there are some limitations of the model, before the arrival of the CAPM, the relationship between expected returns and related risk had been posed, but never been addressed.

3. Based on what you know about the Australian banking system, is there anything you would change? Please include in your discussion what you think should be and should not be changed, AND why.

4. Please write an essay on how the capital asset pricing model is relevant for thinking about financial market practice today. You may include a discussion of why the model does not help too.

Now a days , the resent methods to calculate asset price can be categorized into three ways: neoclassical methods(traditional asset pricing), behaviour finance and chaos,

synergetic model(Kurschner, 2008). Neoclassical methods includes smaller adjustments of CAPM, such as Zero-Beta CAPM, international CAPM; multifactor models, such as arbitrage pricing theory and Fama-French three factor model. And the two puzzles for traditional asset pricing are equity premium puzzle and risk-free rate puzzle. With regards to the behaviour finance, it includes two models: prospect-theory model and habit formation model.

To begin with , I would like to category the capital asset pricing model into two sorts, the original model and the deformation of models. As what is mentioned in question 2 , albeit the presence of CAPM is inter-temporal, its applications are also limited now a days because of the formula or the strict assumptions. As a result, some changes are taken and CAPM is alive again in some aspects.

First of all there is no deny that the prevalence of CAPM is still exerting fundamental influence on the understanding of the determinants of asset prices. Because of this model, investors now change their minds about the relationship between expected returns and risk, refresh their minds about how to allocate their portfolios. In addition, problems ,such as performance measurement and capital budgeting, have also been considered in a bright new way. “A investigation by Levy and Roll (2010) shows that the market portfolio may be efficient after all in the sense that after allowing slight adjustments to the estimated means, variances and co-variances, the efficient set is much tighter and therefore the market portfolio may still be efficient”(Stephen). So,

what is needed for CAPM is to derive some alternative forms, such as ICAPM and CCAPM but so far no model is sufficiently enough to reveal the relative relationship(Kurschner, 2008).

Equity premium puzzle is an phenomenon which reveals the anomalously higher historical real returns of stocks over government bonds. After comparing the relative risk of stocks and government bond, which is considered to be “risk-free”, the puzzle come to be apparent as this phenomenon indicating a significantly large share a risk-aversion investors, which is strongly opposite to the saying “higher risk ,higher gains”(http://www.investopedia.com/terms/e/epp.asp#ixzz1dTXCPfMA).

Risk-free rate puzzle is the phenomena that an anomaly in the difference between the lower historic real returns of government bonds compared to equities. This puzzle is the inverse of the equity premium puzzle, and looks at the disparity from the perspective from the lower returning government bonds(http://www.investopedia.com/terms/r/rfrp.asp#ixzz1dTZnSyt2).

In conclusion, it is evident that CAPM is still useful in modern financial market and unreplaceable after some adjustment though there are two puzzles that are not conquered by all the neoclassic asset pricing models.

References

Hull, J. (2006). *Options, Futures and Other Derivatives*: Boston : Pearson

Hunt, P., & Kennedy, J. (2004). Financial Derivatives in Theory and Practice Available from http://MONASH.eblib.com.au/patron/FullRecord.aspx?p=210561

Kurschner, M. (2008). *Limitations of the Capital Asset Pricing Model (CAPM): Criticism and New Developments*: GRIN Verlag.

Perold, A. F. (2004). The Capital Asset Pricing Model. [Article]. *Journal of Economic Perspectives, 18*(3), 3-24.

Rubinstein, M. (1999). *Rubinstein on derivatives*: London ; Chicago, IL : Risk Books

Sharpe, W. F. (1970). *Portfolio Theory and Capital Markets* New York ; Maidenhead : McGraw-Hill

Shefrin, H., & Statman, M. (2000). Behavioral Portfolio Theory. *Journal of Financial and Quantitative Analysis, 35*(2), 127-151.

Shirreff, D. (2004). *Dealing with financial risk*: Princeton, N.J. : Bloomberg Press

Simkovic, M. (2009). Secret Liens and the Financial Crisis of 2008. *American Bankruptcy Law Journal,, 83*, 253.