**CAPM Assignment**

[Name of the Writer]

[Name of the Institution]

**CAPM Model**

The general perception about the financial markets of any given country is that they are rational. The initial model presented to ascertain the rationality in the given market is the CAPM. This model was initially started by Sharpe (1964) and Lintner (1965). This model is still used to ascertain the capital prices for the firms. The model is based on the returns for the customers keeping in view the risk involved in the investment. The basic assumption is the use of Markowitz Algorithm to compare two sets of portfolios which are assumed to be equally efficient.

The model assumes that the investors tend to avoid risk. They are concerned about the mean and variance of the return they will get at a given point in time. Thus the investor wants to minimize the risk given the return and maximize the return given the risk. The return and the betas seem to be negatively correlated. The authors assumed that all the lenders and borrowers are able to transact the loans on a single fixed rate. The investor expectations are assumed to be the same. (Merton, 1973)

The various assumptions of the model have different implications. The risk averse investors will put most of their funds in the risk free assets. The investors who are ready to take risks will put their investment in the risky parts of the assets. The portfolio is mean- variance efficient which means that there will be a higher Sharpe Ratio. (Universty of New Southwales)

The return on any asset depends upon the risk free rate, market risk premium and the beta value for the asset.

The risks in the model are divided into the diversifiable risk and undiversifiable risk. The intent of the model is that the investor should not be given the compensation for the risk that is actually diversifiable.

After the above brief discussion, we will calculate the price of common stock with the help of the model.

**Rs = D1/P0 +g**

In the above equation we have the return on the given security on the left side of the equation. The numerator shows the dividend that is the next one. The p aspect is the price and g is the growth rate.

Putting the given values

**Rs = 2.25/29 +0.15**

This gives us the value of 0.2275 or 22.75%. Since this rate is higher than the risk free rate of return, the investor should take loan at risk free rate to buy zero beta assets.

The dividend yield will be calculated as follows:

**Dividend /price of Stock**

**= 2.25/29\*100**

Which will come to 7.78% today. Now if we apply the growth rate on this dividend, we get

**2.25+(2.25\*12/100)**

This comes to 2.52. Now we have to us the above formula with this new dividend value.

**=2.52/29\*100**

This comes to **8.69%.**

The after tax cost of debt will be

**=8/100(1-0.4)**

This comes out to be **0.048 or 4.8%.**

The model is generally used for one period payment analysis so the dividend growth rate will not be considered by the investors. The return of the new common stock is higher than the risk free rate. So the investors may go for the investment in them. The country risk also affects the returns expected out of an investment. The change in tax rate will also affect the whole scenario. The company should assess using the CAPM model assumptions before using it.

# References

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