

Portfolio Selection and the Capital Asset Pricing Model

Group A

Wednesday, March 18, 2015

FIN: 4980

CAPM

CAPM

$$\text{CAPM Era} = R_f + \beta_a (R_m - R_f)$$

R_f = the rate of return for a risk-free security

R_m = the broad market's expected rate of return

β_a = beta of the asset
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Example

Assume the following for Asset XYZ:

$R_f = 3\%$
 $R_m = 10\%$
 $\beta_a = 0.75$

By using CAPM, we calculate that you should demand the following rate of return to invest in Asset XYZ:

$$\text{Era} = 0.03 + [0.75 * (0.10 - 0.03)] = 0.0825 = 8.25\%$$

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Let's take a closer look at the Market Risk Premium

The question we would all like to answer!

$$[E(R_M) - R_f]$$



CAPM Limitations/Beta Estimates

Fama and French found the differences in Betas over lengthy periods didn't explain the performance of different stocks.

One reason CAPM's expected returns sometimes do not match actual returns is that Betas are unstable through time.

Conclusion

- No alternative model as widely used and taught as CAPM
- Every model has its pros and cons

One has to recognize the advantages and disadvantages of every model and find the one that is the most appropriate for certain investment/educational needs

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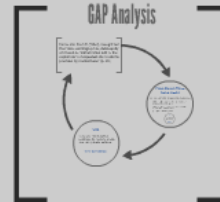
Jensen's Alpha

$$\alpha = R_p - [R_f + (R_m - R_f) \beta]$$

R_p = Realized return of portfolio
 R_m = Market return
 R_f = risk-free rate

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GAP Analysis



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Pricing Model

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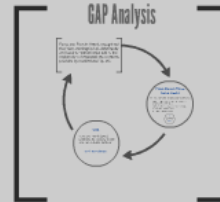
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CAPM Limitations / Data Estimates

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