**NMIMS**

**Capital Market and Portfolio Management**

**Internal Assignment for June 2020 Examination**

**1. Calculate the standard deviation and return of portfolio consisting of 60% of Security A and 40% of Security B.**

**TABLE BELOW**

|  |  |  |
| --- | --- | --- |
| **Year** | **Security A return (%)** | **Security B return (%)** |
| **2015** | **10** | **18** |
| **2016** | **12** | **15** |
| **2017** | **9** | **11** |
| **2018** | **10** | **9** |
| **2019** | **5** | **7** |

**Answer**: We have Expected return of portfolio (Ep) = W1E1 + W3E3 + ………….WnEn

|  |  |  |
| --- | --- | --- |
| **Year** | **Security A return (%)** | **Security B return (%)** |
| 2015 | 10 | 18 |
| 2016 | 12 | 15 |
| 2017 | 9 | 11 |
| 2018 | 10 | 9 |
| 2019 | 5 | 7 |
|  | **46** | **60** |

Expected

**2. Calculate the return as per CAPM for each of the company’s stock, identify whether they are underpriced, overpriced or correctly priced and advise accordingly. Returns of T- Bill is 9%.**

|  |  |  |
| --- | --- | --- |
| **Stock** | **Expected Return** | **Beta** |
| **Titan** | **24%** | **1.8** |
| **Nestle** | **30%** | **1.5** |
| **Eicher Motors** | **12%** | **1.2** |
| **HDFC** | **25.9%** | **1.3** |
| **Sensex** | **22%** |  |

**Answer**: **Calculation of CAPM**

CAPM = Rf + β(Rm – Rf)

Its half solved sample only

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Where,

Rf = Risk free rate

β **=** Beta

Rm = Market rate of return

**Titan**

**3. An investor was tracking SBI and HDFC mutual funds whose return and beta are as given below:**

|  |  |  |
| --- | --- | --- |
|  | **Observed Return** | **Beta** |
| **Portfolio SBI** | **18%** | **0.75** |
| **Portfolio HDFC** | **25%** | **1.25** |

**Return on the market portfolio is 11%, while the risk-free return is 8%. Assume standard Deviation of the market to be 7%.**

**a. Compute the Jensen index for each of the funds and comment which one is better.**

**b. Compute the Treynor index for each of the funds and comment which one is better.**

**Answer**: **Jensen’s Alpha**

**Jensen’s Alpha = Portfolio return – Risk free rate - [Beta of the portfolio \* (Expected market return – Risk free rate)]**

|  |  |
| --- | --- |
| **Portfolio SBI** | **Portfolio HDFC** |
| = 18 – 8 – [0.75(11-8)]  = 10 – [0.75(3)]  = 10 – 2.25 | = 25 – 8 – [1.25(11-8)]  = 17 – [1.25(3)]  = 17 – 3.75 |
| = 7.75 | = 13.25 |

**Conclusion**: A positive alpha means the fund has outperformed its benchmark index.