**README: Replication of Fama and MacBeth (1973) Empirical Analysis**

1. The Aim of This Repository

This project replicates the empirical analysis from Fama and MacBeth's 1973 paper, *Risk, Return, and Equilibrium: Empirical Tests*. The replication focuses on US stock data from January 1926 to December 2023 and reproduces the results in Tables 1, 2, 3, and 4 of the original paper.

The project is completed as part of the MAF900 unit for T2 2024. The assignment includes data collection, empirical analysis, and report creation using R / RStudio.

The project involves:

* Data collection from historical stock returns and market data.
* Empirical analysis using Fama-MacBeth regression methodology.
* Reproduction of the key tables from the paper.
* A comprehensive report detailing the process and findings.

1. Background of Fama and MacBeth

The 1973 paper by Eugene F. Fama and James D. MacBeth, "Risk, Return, and Equilibrium: Empirical Tests," is pivotal in finance, introducing rigorous empirical methods to test the Capital Asset Pricing Model (CAPM). Their innovative approach, which combined time series and cross-sectional regression analyses to assess the relationship between asset returns and market risk, has significantly influenced asset pricing theory and led to the development of multi-factor models.

1. Members of The Group

The project is conducted by Kristina Li and Stephanie Tio.

1. Members Responsibility

|  | **Name** | |
| --- | --- | --- |
|  | Kristina | Stephanie |
| **Responsibility** |  |  |
| Data Collection | v |  |
| Portfolio Formation |  | v |
| Initial Estimation (Table 2) |  | |
| β\_(p,t-1) |  | v |
| s(β\_{p,t-1}) |  | v |
| r(Rp, Rm)^2 |  | v |
| s(Rp) | v |  |
| s(εp) | v |  |
| sp,t-1(εi) | v |  |
| s(εp) / sp,t-1(εi) | v |  |
| Table 3 | v | v |
| Panel A | v |  |
| Panel B |  | v |
| Panel C | v |  |
| Panel D |  | v |
| Report | v | v |

1. Files in Github
2. Statement of Participation

We promise that each member contributes to the assignment and is satisfied with each other's contributions. Please reach out if you have any questions.

| Member No. | Name | Signature |
| --- | --- | --- |
| Member 1 | Kristina Li |  |
| Member 2 | Stephanie Tio |  |
| Date: | | |

1. Reference

Fama, E. F., & MacBeth, J. D. (1973). Risk, return, and equilibrium: Empirical tests. *Journal of political economy*, *81*(3), 607-636.