Update Summary

Revised Main Specification –

1. **Crisis Sample: Pre-crisis vs. Crisis (Periods 1 & 2)**

$$R_t = \alpha_1 + \gamma_1 Crisis_t + \beta_1 Factors_t + \delta_1 (Crisis_t \times Factors_t) + \varepsilon_t$$

2. **Post-Crisis Sample: Crisis vs. Post-crisis (Periods 2 & 3)**

$$R_t = \alpha_2 + \gamma_2 Post_t + \beta_2 Factors_t + \delta_2 (Post_t \times Factors_t) + \varepsilon_t$$

where:

- R_t = monthly long-short anomaly return at time t
- $Crisis_t$ = dummy variable equal to 1 during the crisis period (Dec 2007–June 2009), 0 otherwise
- $Post_t$ = dummy variable equal to 1 during the post-crisis period (July 2009–Dec 2014), 0 otherwise
- $Factors_t$ = vector of Fama-French three factors (MKT, SMB, HML)
- β_1 , β_2=Vectors of factor loadings during the respective baseline periods (Pre-crisis for Model 1; Crisis for Model 2).
- γ_1, γ_2 = abnormal returns during crisis and post-crisis periods, respectively
- δ_1, δ_2 = vectors of interaction coefficients (three coefficients each) capturing changes in factor loadings during crisis and post-crisis periods, respectively

Addressing Continuity: VIX-Based Model

I will estimate a second model where I replace the period dummies with VIX (standardized) and include VIX-factor interactions

EQUATION:

$$R_t = \alpha + \theta VIX_{t-1} + \beta Factors_t + \eta (VIX_{t-1} \times Factors_t) + \epsilon_t$$

Where,

- VIX_{t-1}= **lagged (standardized)** CBOE (Chicago Board Options Exchange) Volatility Index, measuring expected stock market volatility and used as a continuous proxy for market stress and uncertainty.
- θ= coefficient measuring the direct effect of changes in market stress (VIX) on anomaly returns.
- η= vector of interaction coefficients capturing how the factor loadings of anomaly returns vary with the level of market stress.

Thank you.