**STAT 4559: Summary of analysis**

**What statistical results were obtained?**

A time-invariant coefficient model was rejected by all assets in all market model specifications (CAPM, FF3, FF5). This supports the use of the time-varying coefficient model in further analysis.

A fair proportion of the assets tested show statistically significant relationships between the previous day’s return and the current day’s return.

* In CAPM: 8/12 assets reject the null (i.e. this relationship is zero over the full sample period).
* In FF3: 7/12 reject the null.
* In FF5: 5/12 reject the null.

This relationship, as quantified by the coefficient on lagged returns in the regression of current-period returns, is fairly robust to market model specification. This suggests that the result is not spurious.

* Plots of the coefficient point estimate and 95% pointwise confidence intervals are close to identical in the three market models tested (CAPM, FF3, and FF5).
* The three model specifications identify similar portions of the assets’ returns series as “non-random walks” in the sample period.

**What is the economic intuition behind these results (if any)?**

Things to look for here: mean daily volatility in significant periods vs. non-significant; mean daily return first and second derivatives in significant periods vs. non-significant.

**What is the practical significance of these results?**

A trader only has past information off of which to base his decisions. Fortunately, the relationship between lagged and current returns identified by the symmetric kernel analysis is well-captured by a backward-facing kernel as well.

* Point estimates and 95% pointwise confidence intervals from the backward-facing estimation follow those of the symmetric kernel estimation very well, though with significantly more volatility.
* The backward and symmetric kernel estimations identify fairly similar portions of the assets’ returns series as “non-random walks.” However, the intervals given by the backward kernel estimation are fairly volatile.

The magnitude of the coefficient on lagged returns is small (< 0.5) for all model specifications and kernels. Compared to other coefficients in the model, this is nowhere near the most economically significant predictor of returns in the cross section. However, it is possible that a trader can capitalize on this relationship in order to earn an “edge” above competitors. (Strategy analysis?)