6 Interpreting GARCH model output

. Titles refer to their actual printout titles.

Optimal parameters

. Provides info about estimates & significance of mean & variance equation terms

Robust standard errors

. Same as above, but std. errors are robust against violations of the normal distribution assumption

↳ If inconsistent w/ above, implies this ass. is imp. for interp.

Information criteria

. Only useful for comparing diff. model outputs – the smaller the better.

Weighted Ljung-Box test on standardised residuals

. H_0: there is no autocorrelation in the mean eqn residuals of order 1 to Σ.

. H_a: there is autocorrelation " " "

. The outcome of this shouldn't be a surprise b/c you'd know from the correlograms. It might be when you set mean eqn there was some autocorrelation, but not sufficiently material to merit Δ b/c of abs. value of sig. spikes.

Weighted Ljung-Box test on standardised squared residuals

. Same test as previously but for squared resids

↳ Rejecting H_0 here indicates your variance eqn is not correctly specified

Weighted ARCH-LM tests

. H_0: there are no ARCH effects remaining in the error term for lag p.

. H_a: there are ARCH " " " "

. Also indicates if variance eqn suff.

Nyblom stability test

. tests for structural change in the data generating process, jointly & individually.

↳ to do this compare the test stat to crit value, if greater than & then you can reject that given test at the x% significance level.

→ Helpful to compare mean vs. var outcomes

Sign bias tests

- Tests on if negative & positive shocks have diff. values on future volatility
  - ↳ "leverage effect"
- H_0: no leverage effect
- H_a: leverage effect

Pearson goodness of fit

- Compare the empirical dist. of standardised residuals with the chosen cond. dist. of ε_t (specified in spec call - usually normal)
- "groups refers to bins"
- H_0: empirical dist reflects chosen
- H_a: empirical dist. does not reflect chosen.