

Assignment 2

ECON M524 (FALL, 2022)

September 27, 2022

The dataset `data1945_2015.xlsx` gives the *real* price and dividend series of US stock market index over years 1945-2015. Using this dataset, compute two variables: continuously compounded returns (including dividends) r_t , and log dividend-price ratios dp_t . Run the OLS predictive regression of r_t on x_{t-1} . The slope coefficient is denoted as β .

1. Calculate the Jackknife estimator of β based on (approximately) equally dividing the whole sample into three subsamples (i.e. $m = 3$).
2. Calculate the 10% right-tailed bootstrap critical value of the standard t-statistic, based on the following modified bootstrap algorithm (iid bootstrap). Also compute the right-tailed bootstrap p-value.

In class, we generate bootstrap residuals as $(u_t^*, v_t^*)' = (\hat{u}_t, \hat{v}_t)' \varepsilon_t^*$, where ε_t^* is a random variable with mean 0 and variance 1, for $t = 1, \dots, T$. [It's called *wild bootstrap*.] Now we generate bootstrap residuals $\{(u_t^*, v_t^*)' : t = 1, \dots, T\}$ as random draws (with replacement) from $\{(\hat{u}_t, \hat{v}_t)' : t = 1, \dots, T\}$. [It's called *iid bootstrap*.] Other steps remain the same.