阮昱眾

1. Using the Li and Wang (1999) test, test that the quadratic parametric specification is appropriate (use a wild bootstrap). Use (1) the rule–of–thumb bandwidth and (2) the cross–validated bandwidth from the local–constant estimator with the Gaussian kernel

   Ans:
   (1)ROT
   bandwidth = 4.465039
   tstat = 1.673812
   critical value = −0.3121638
   p–value = 0

   (2)LSCV
   bandwidth = 1.892169
   tstat = 2.829023
   critical value = 0.3077894
   p–value = 0

2. Are your results consistent with your answers to the question 3 from the previous homework assignment?

   Ans:We reject the null hypothesis that the quadratic parametric specification is appropriate, and this implies the significance of the dip and is consistent with the changes in the confidence intervals.

3. A random variable v following a standard normal distribution is included in the model as the second regressor. Using the Lavergne and Vuong (2000) test, test that v is an irrelevant regressor (use a wild bootstrap). Use (1) the rule–of– thumb bandwidth and (2) the cross–validated bandwidth from the local–constant estimator with the Gaussian kernel.

   Ans:
   (1)ROT
   bandwidth of x = 5.3319215
   bandwidth of v = 0.4125828
   tstat = −0.06304582
   critical value = 0.851701
   p–value = 0.255
   (2)LSCV
   bandwidth of x = 4.206844
   bandwidth of v = 1.957042
   tstat = −0.8359193
   critical value = −0.704583
   p–value = 0.12

4. Is the cross-validated bandwidth greater than two times the standard deviation of v? What does this mean? Is this consistent with the result of the hypothesis test?

   Ans:The cross-validated bandwidth of v is greater than two times the standard deviation of v, and this implies the irrevlance of v and is consistent with the fact that we fail to reject the null hypothesis that v is an irrelevant regressor.