A short note on the accuracy of structural break tests at detecting oil price shocks in advance

Emmanuel Sirimal Silva

This short note seeks to evaluate the accuracy of seven structural break tests at detecting oil price shocks in advance. Both annual and monthly data for WTI (1986 onwards) and Brent (1987 onwards) are considered. Initially the data is compared using descriptive statistics and tested for normality and unit root problems. Thereafter, structural break tests which look for changes in both mean and variance are applied to the data. The results from the changepoint tests are compared with the historical oil price shocks identified in [1] in order to evaluate the accuracy of the methods. The findings indicate that in general the frequency of the data impacts the accuracy of these changepoint tests. The results show that when faced with annual data the best method (out of those evaluated here) for early detection of oil price shocks is cpt.mean BinSeg [2] whilst for monthly data the best test is cpt.var BinSeg [2]. Accordingly, it appears these two tests are the least sensitive to the frequency of data.