Description:
The goal of this part is to demonstrate your ability to develop a cross-sectional regression model and clearly present results. Imagine you have a potential investor who would like to find out whether buying securities with low volatility yields higher returns than buying securities with high volatility. To answer this question, please follow the methodology illustrated in Haugen's paper published in 1996 and construct an factor model using volatility as one or multiple factors (independent variable) in Python or R. You can define your own low volatility variables (price, return, residual return, beta, etc.) In addition to codes, you may also wish to include any other materials to help illustrate your analysis in more detail.

An arbitrary list of securities is attached. Historical price data for these securities can be found online from Yahoo Finance or Compustat. The date range is from 2009/12/31 to 2019/12/31, you can choose the frequency as you see fit.

Results:
Your analysis should aim to answer the following questions:
1, What is a better proxy to historical volatility?
2, How have the low volatility strategies performed historically over the last 10 years?
3, What is the special characteristic of volatility factor?
4, What are the limitations of this factor model?

Attachment:
Haugen's paper, a list of tickers