Part1\_Question3, 4, 5

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Part1 Question3 [RELATED FILE: Part1Q3.m]

Chart

Description automatically generated

Part1 Question4 [RELATED FILE: Part1Q4.m; yrLogreturn.m]

**BMO Log return**

Chart, histogram

Description automatically generated

**GS Log return**

Chart, histogram

Description automatically generated

Part1 Question5 [RELATED FILE: Part1Q5.m; yrLogreturn.m]

**BMO Log return**

Table

Description automatically generated

For BMO, the mean log return for 2007 and 2008 is negative, which might cause by the recession. The return for 2008 and 2009 is low but start to rebound in 2009. The standard deviation for 2008 and 2009 is greater than 0.02, because of the financial crisis during these years. We can observe during normal years (2007 and 2010), there is less volatility in log return, with standard deviation less than 0.015.

**GS Log return**

Table

Description automatically generated

For GS, the mean log return during 2007 – 2010 keep fluctuating. In 2008, the log return reach to the bottom with only -0.0035721 and start to increase to 0.0026526 in 2009. This is because the financial crisis in 2008. In 2007, the log return is 0.00027584, which is relatively high comparing with other years. In 2010, we can still observe some decrease in log return, which implies some struggle period for the US market to recover from the recession, but not as significant as the drop in 2008.

The standard deviation for 2008 and 2009 are higher than that of 2007 and 2010, which is also because the financial crisis hit the market in 2008.