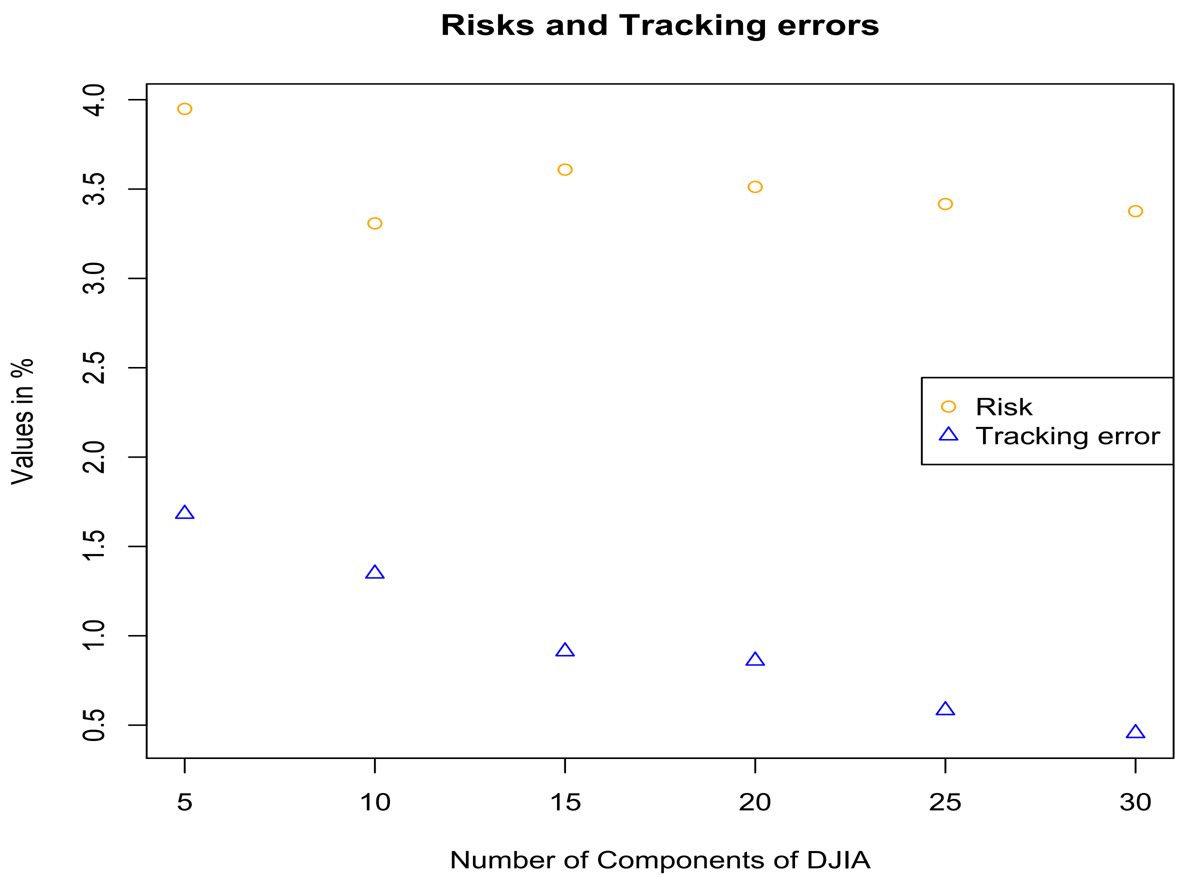
In the case study we consider equally weighted portfolios consisting of components of Dow Jones index. In the chart are presented risks and tracking errors of sample portfolios consisting from 5 to 30 stocks components of Dow Jones.



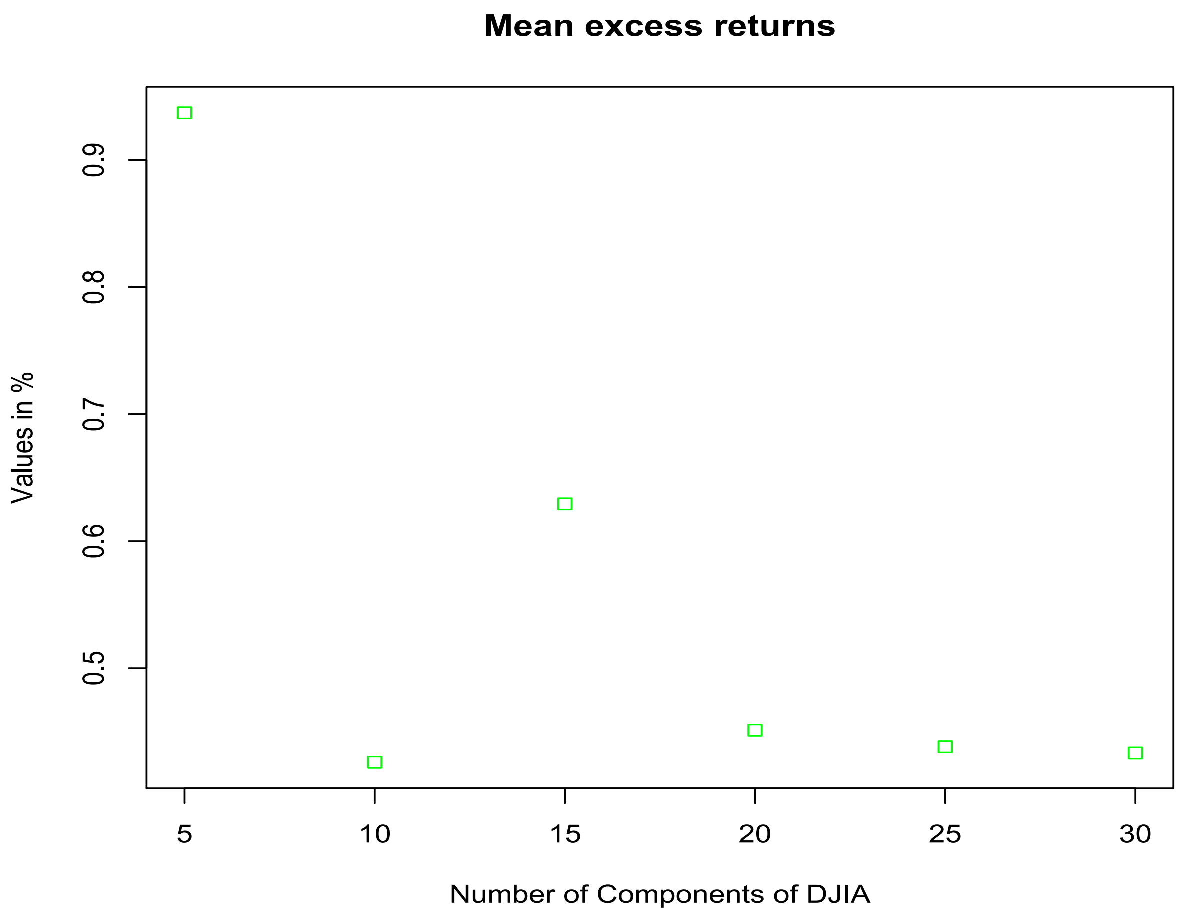
What are the factors the tracking errors are dependent from?

1. **Number of components of the index.** We can see that the tracking error decrease as the number of components increases in a sample.
2. **Weights assignation to the components of the index.** Dow Jones index is a stock price weighted index. S&P 500 and Russel's index-family are capitalization weighted indexes. In our example the samples are equally weighted portfolios. For this reason, the tracking error of equally weighted portfolio consisting of all 30 components of Dow Jones is not 0.

What are the ways to reduce the tracking errors without copying Dow Jones's structure? We can see that the sample portfolios with 15 or more components have slights tracking errors, less than 1.5%. A recipe would be to have portfolios with 15 or more components.

What about the risks of the sample portfolios, we could see that they are not affected by the sample size.

In the chart below we see the excess returns of the sample portfolios over Dow Jones.



We see that the equally weighted portfolios performed better as Dow Jones. We know that Dow Jones index is a stock price weighted index. Hence it signals that high priced stocks in Dow Jones performed worse than low priced stocks.