Question 2

20903936

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Introduction

The aim of this brief report is to compare the methodologies of the SWIX (J400) and the ALSI (J200). To do so we will loook at the performance of both indexes based on size indexes (large, mid and small caps), sector exposures and stock concentration over time. We will then look at applying capping to the indexes to look at the impact that different capping levels that would have. Specifically we will cap at 6% and 10% in our analysis.
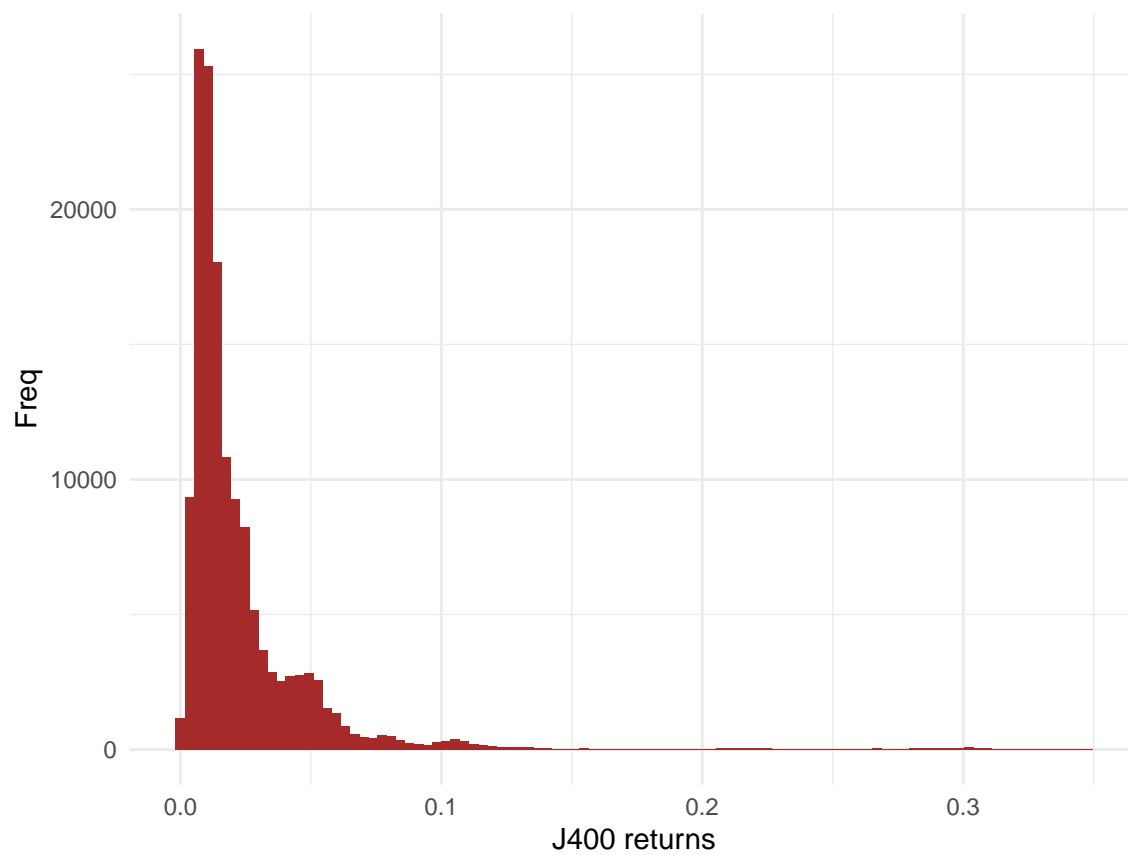
Exploratory Data Analaysis

Before doing our analysis we must ensure that our data is correct.

Our first point of call is ensuring that the J200 and the J400 index weights sum to 1. This is to ensure that our proportions for calculating portfolio returns are correct. And they did sum to 1 and I also checked that there were no NAs.
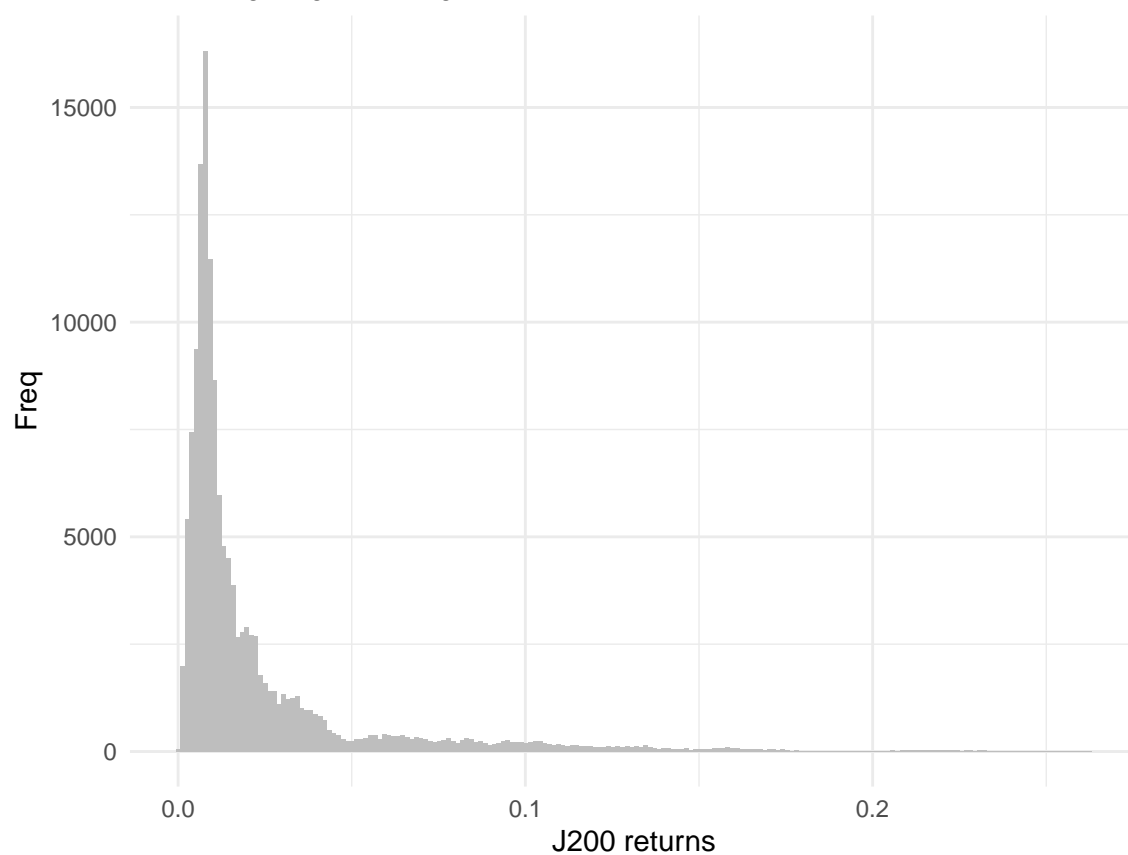
Below we also show that our weights of our indexes are log normal returns. This is important as we cannot have negative returns in our index.

Histogram of J400 weigths

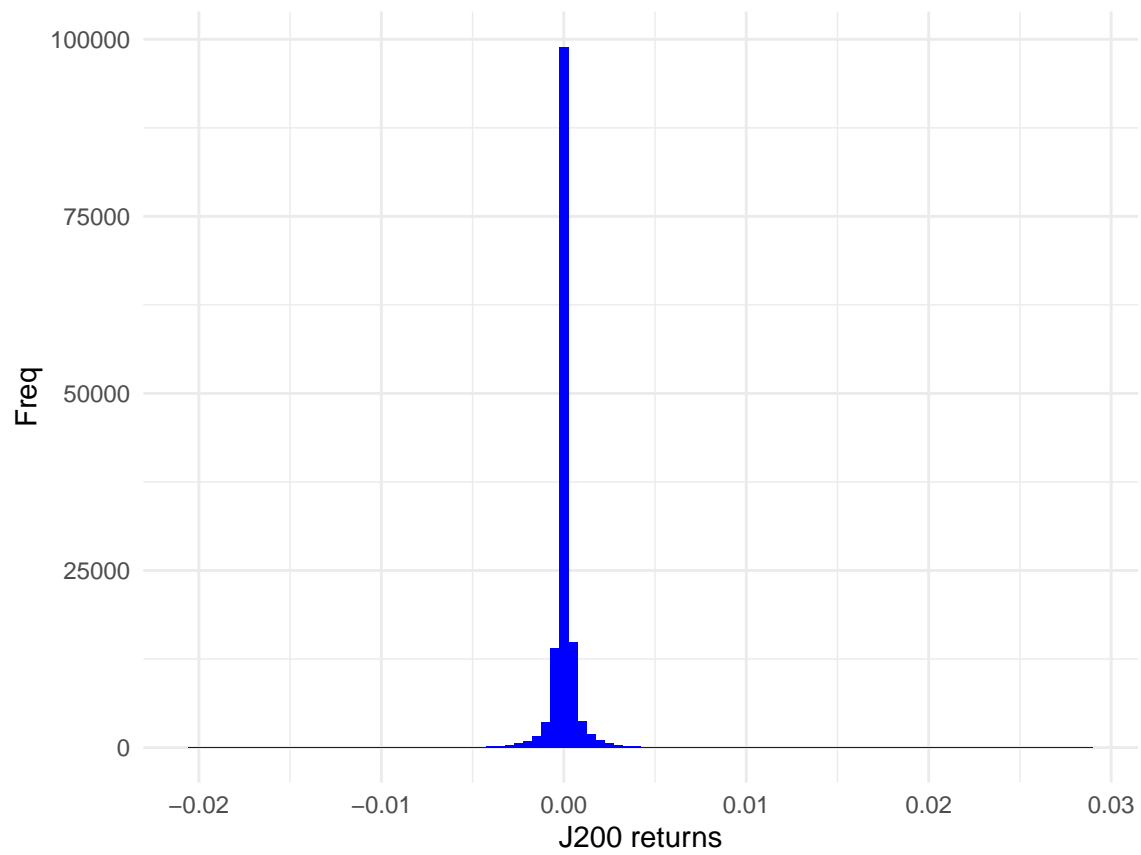J400 weights follow log−normal distribution as expected

Histogram of J400 returns
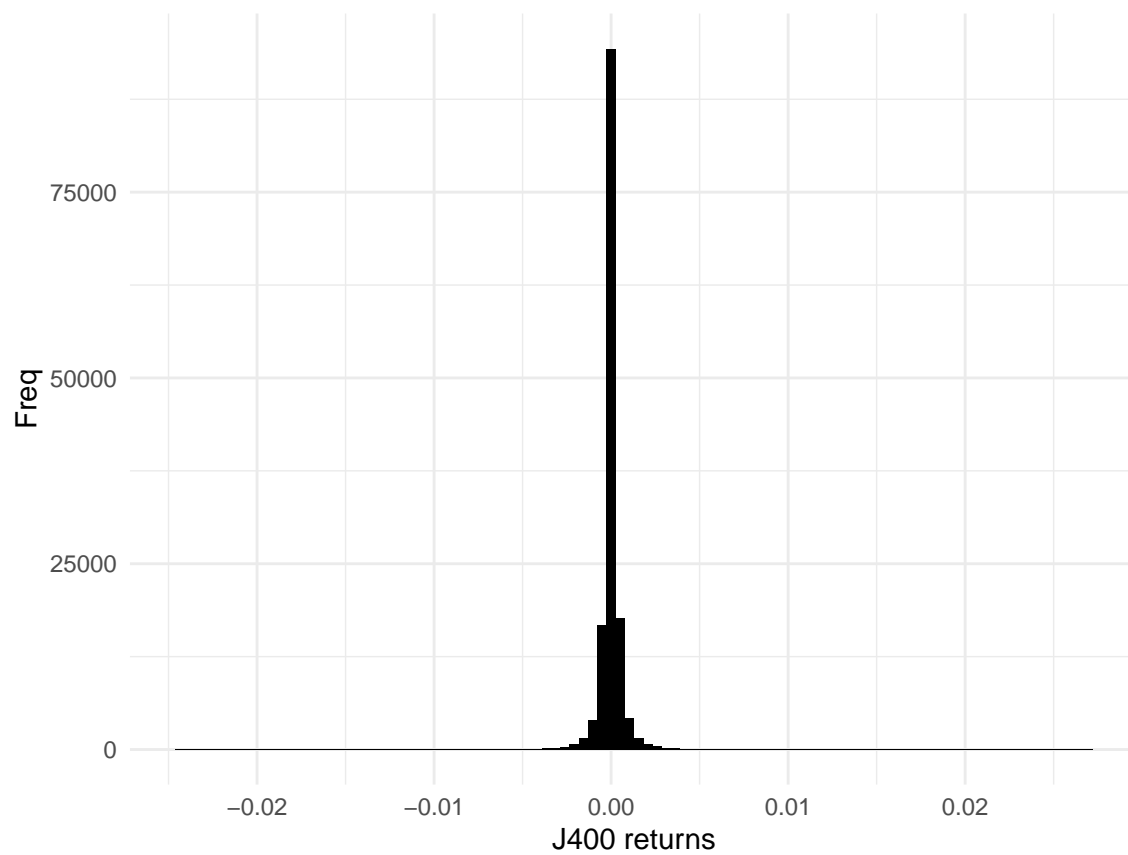## J200 weighting follow log-normal distribution

Now we need to ensure that the return series includes simple returns and not log returns. We can do so by ensuring that the return profile of the portfolio returns follows a normal distribution.

Histogram of J200 returns

J200 returns follow normal distribution
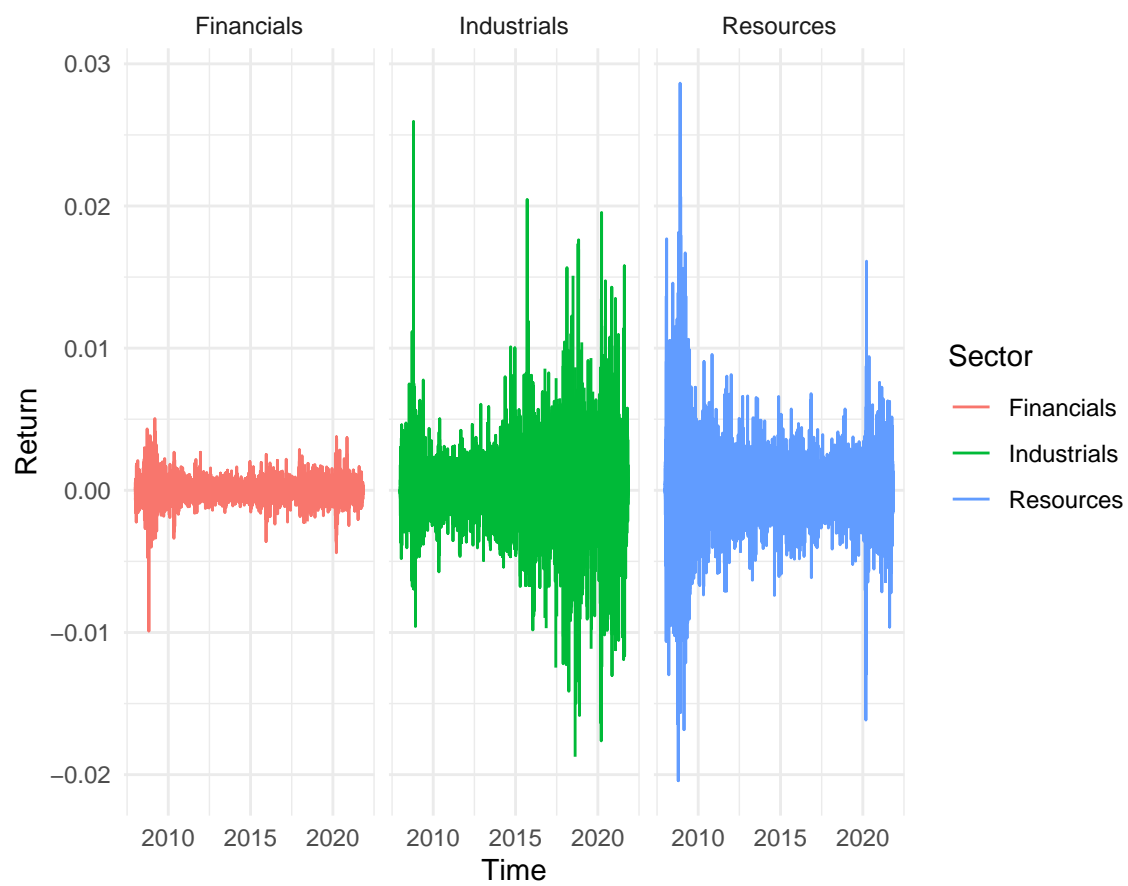
Histogram of J400 returns
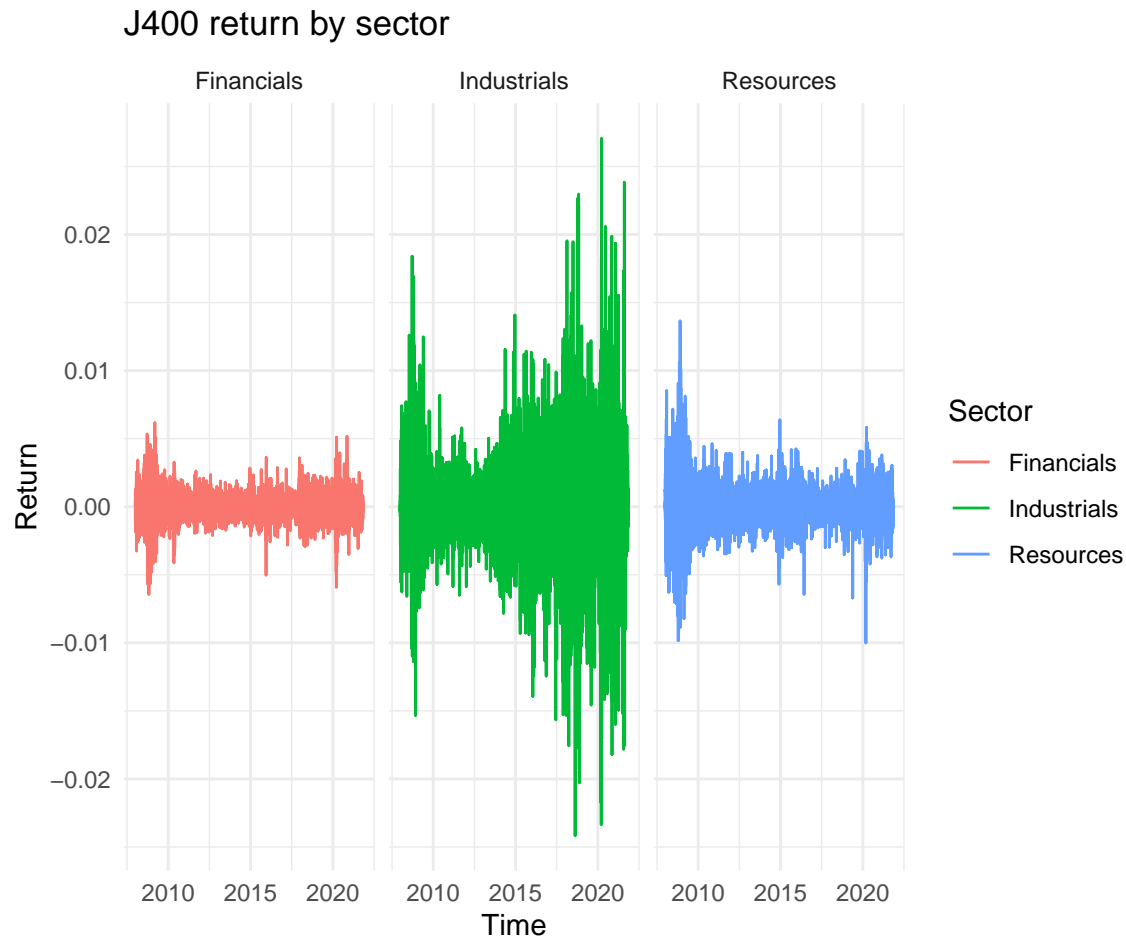J400 returns follow normal distribution

Wonderful, now that we are sure that our returns are fine, we can now show the performance of the indexes.

Performance by Sector

J200 return by sector

J400 return by sector

From the above chart we can see that J200 has more stable returns for industrials. But the J400 has more stable returns for resources.

Now we look at applying capping to the indexes to look at the difference that capping levels have on the J200 and J400.

In this report, I did try and cap my index and have code placed in the comments to show this. However it just didn't end up working unfortunately.