Portfolio Construction

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1. Introduction

2. Compare ALSI and SWIX at different levels

2.1. ALSI and SWIX

First we will us this function with no granulation to see the cumulative returns across all sectors and indices.

What we gather from this plot is that the ALSI (J200) underperformed compared to the SWIX (J400) until 2020 and then the roles reversed where the ALSI started performing better.

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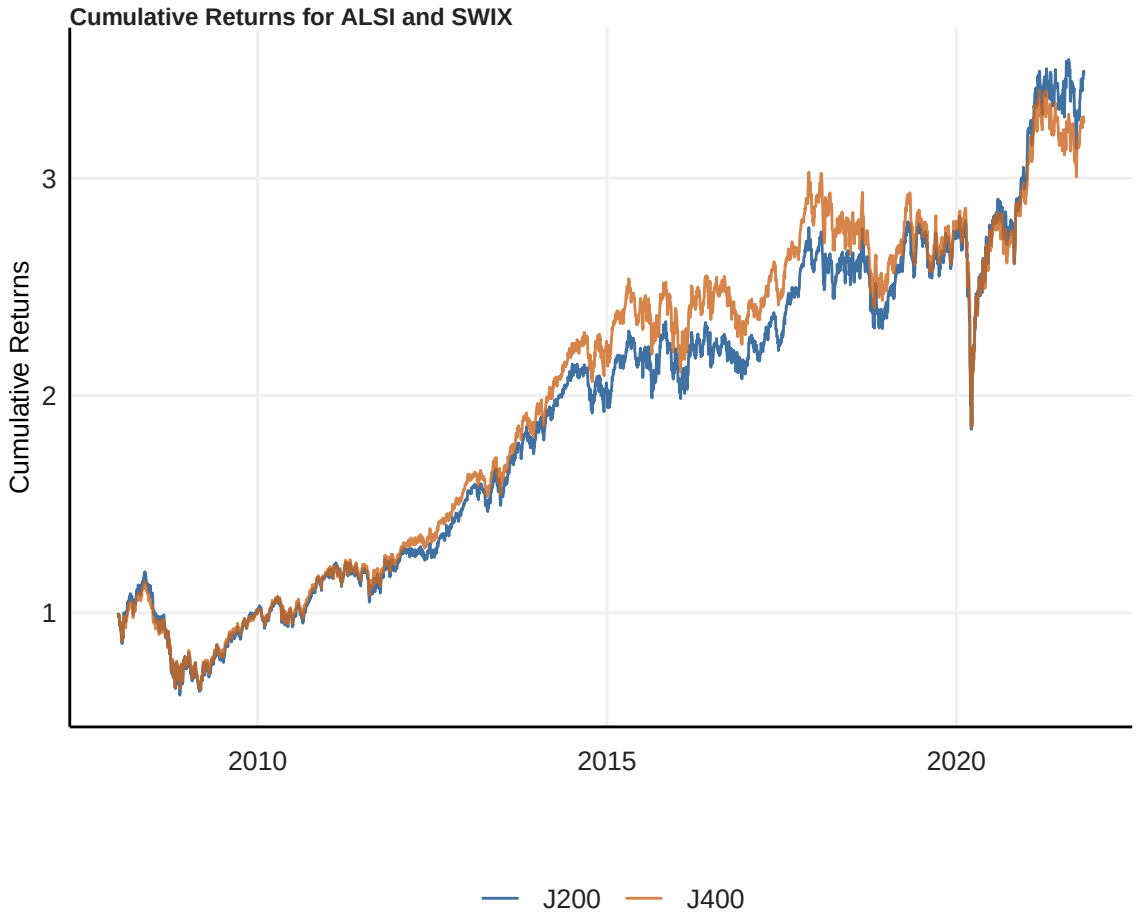
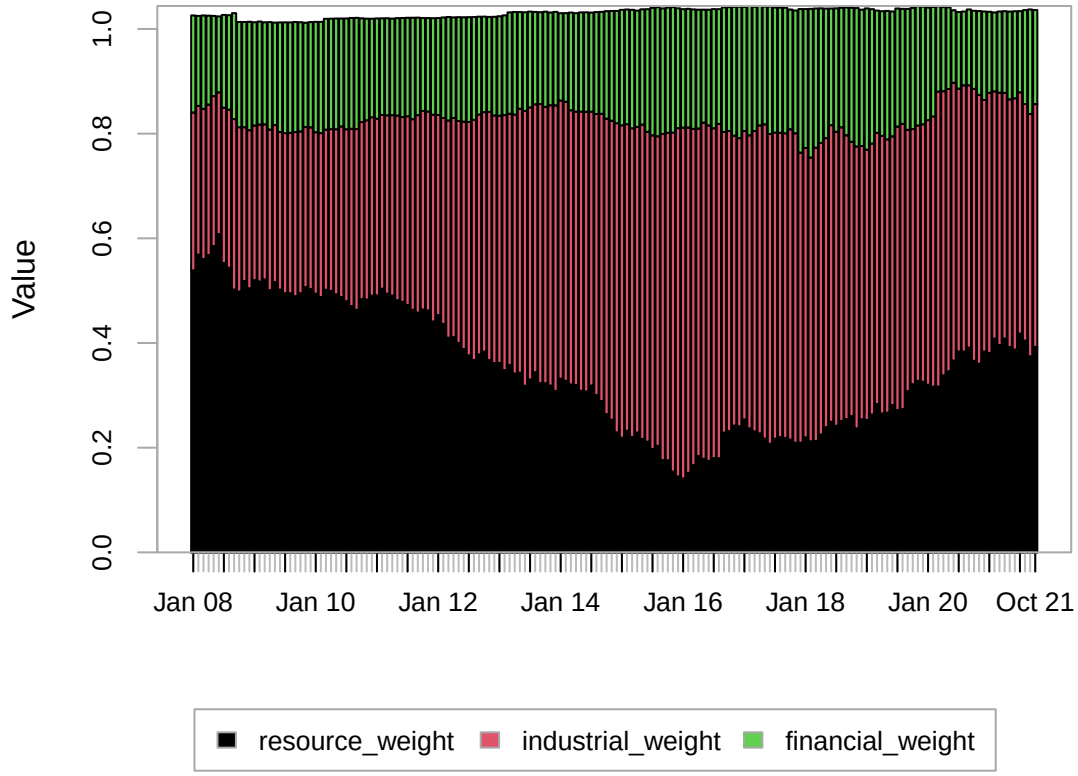


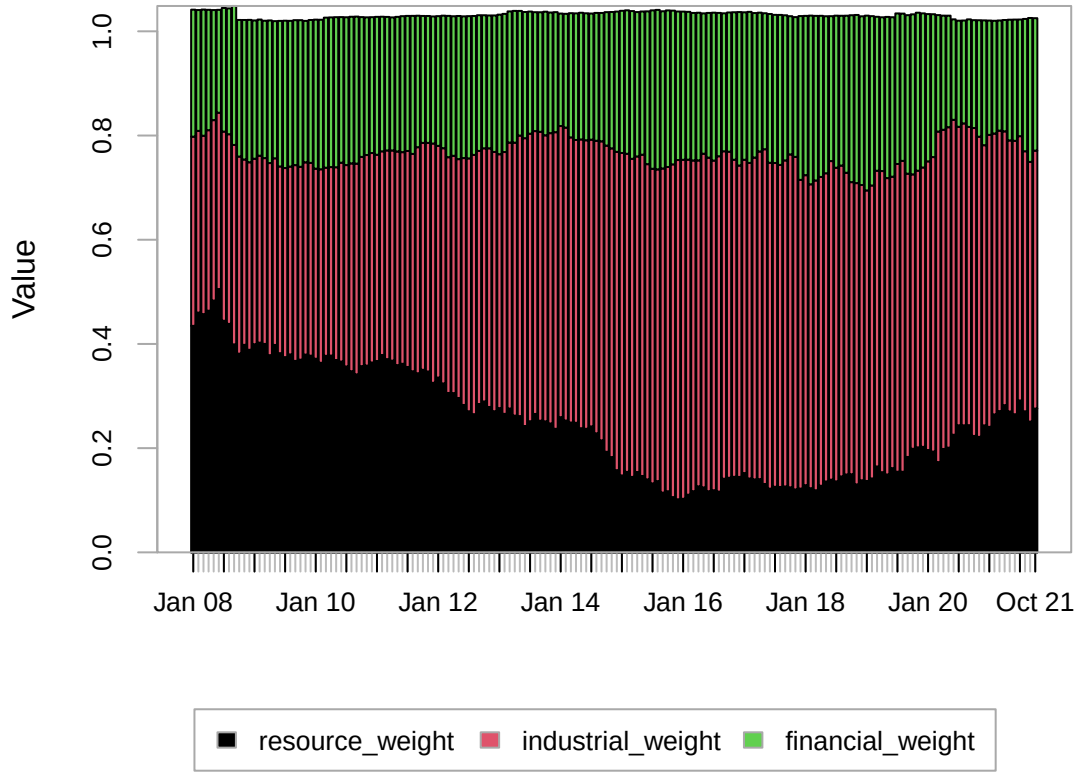
2.2. Weights plot

An interesting look into the portfolios is to see which industries are weighted highest between the SWIX and ALSI. Below is a plot of their different factor weights through time. We can see that since 2020 the ALSI lowered their weighting of Financial stocks and increased their weighting of resource stocks in comparison to the SWIX.

- ALSI (J200)

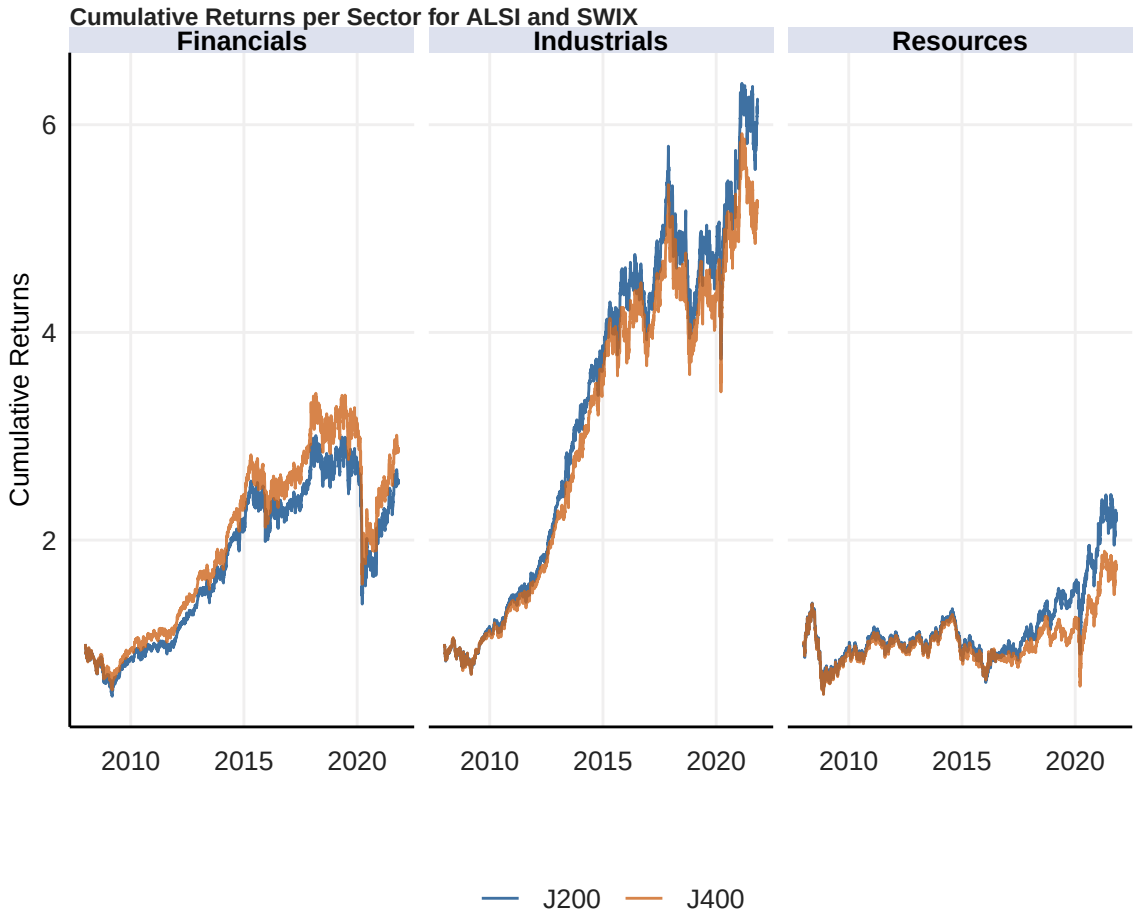

Value
0.0
0.2
0.4
0.6
0.8
1.0
Jan 08
Jan 10
Jan 12
Jan 14
Jan 16
Jan 18
Jan 20
Oct 21
resource_weight
industrial_weight
financial_weight

- SWIX (J400)



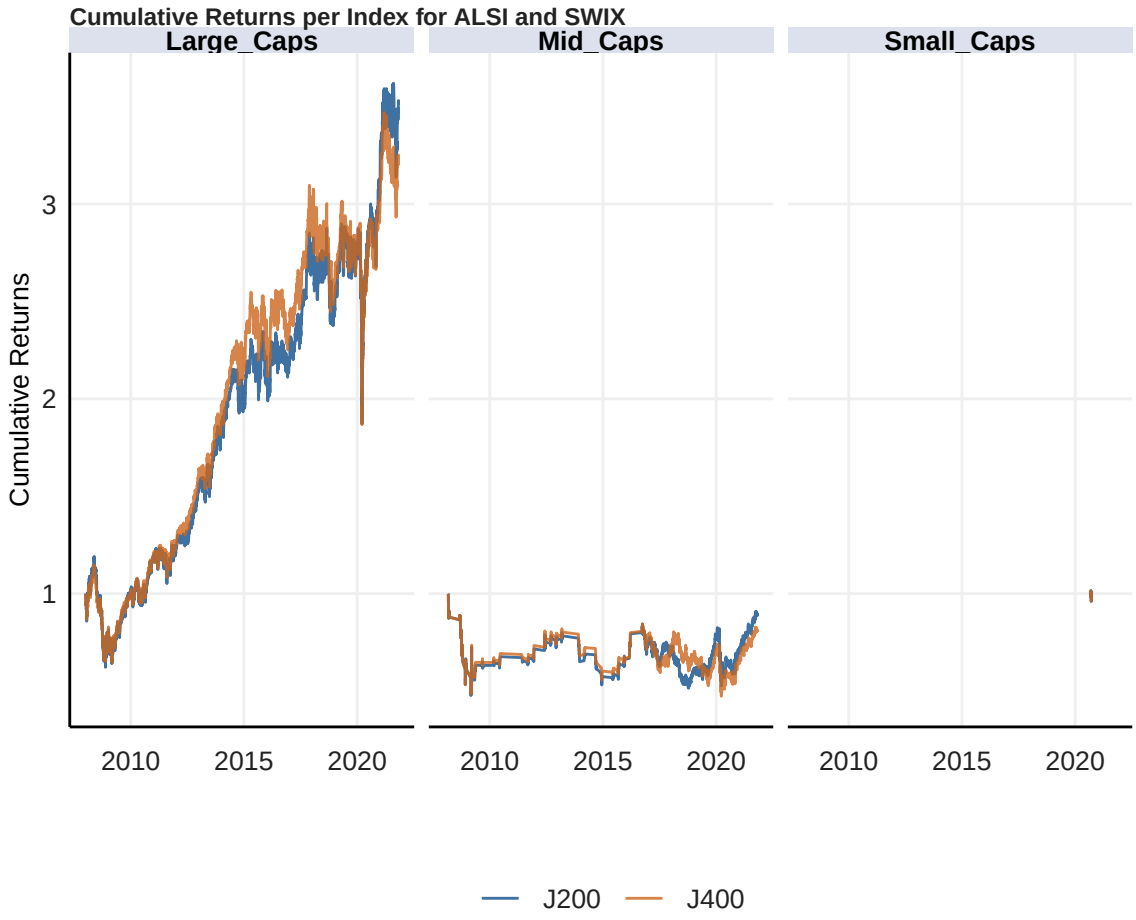
2.3. By Sector

The plot below shows us the portfolio returns for the ALSI and the SWIX across their different sectors. We can evidently see that the cumulative returns from the Industrials is much larger that both the Financial or Resource sectors. We can also see that the ALSI (J200) has larger cumulative returns in both the Industrial and Resource sectors in comparison to the SWIX (J400). However, the SWIX outperforms the ALSI in the Financial sector.



2.4. By Index (Small-cap, Medium-cap and Large-cap)

The plot below shows that the ALSI outperforms the SWIX for both the Large and Mid caps. The ALSI had lower cumulative returns that the SWIX for large caps up until 2020. There is not enough data for small caps and thus they only contribute a very small amount of returns to either portfolio.



3. Performance during currency volatile periods

3.1. Stratify the returns by high and low volatility

Here I find periods of high and low volatility of the USD-ZAR exchange rate. This is done by finding a upper and lower bound of volatility to 20%. Stratifying for these high and low volatility periods we look at the different index's volatility (standard deviation) within those periods.

Below is the table of volatilities during times of high exchange rate volatility. What we can deduce is that in times of high exchange rate volatility, the ALSI (J200) has a higher volatility than the SWIX (J400). The SWIX also has a lower overall volatility in comparison to the ALSI.

High Volatility				
Tickers	SD	Full_SD	Period	Ratio
J200	0.2859593	0.1932903	High_Vol	1.479429
J400	0.2836449	0.1928667	High_Vol	1.470678

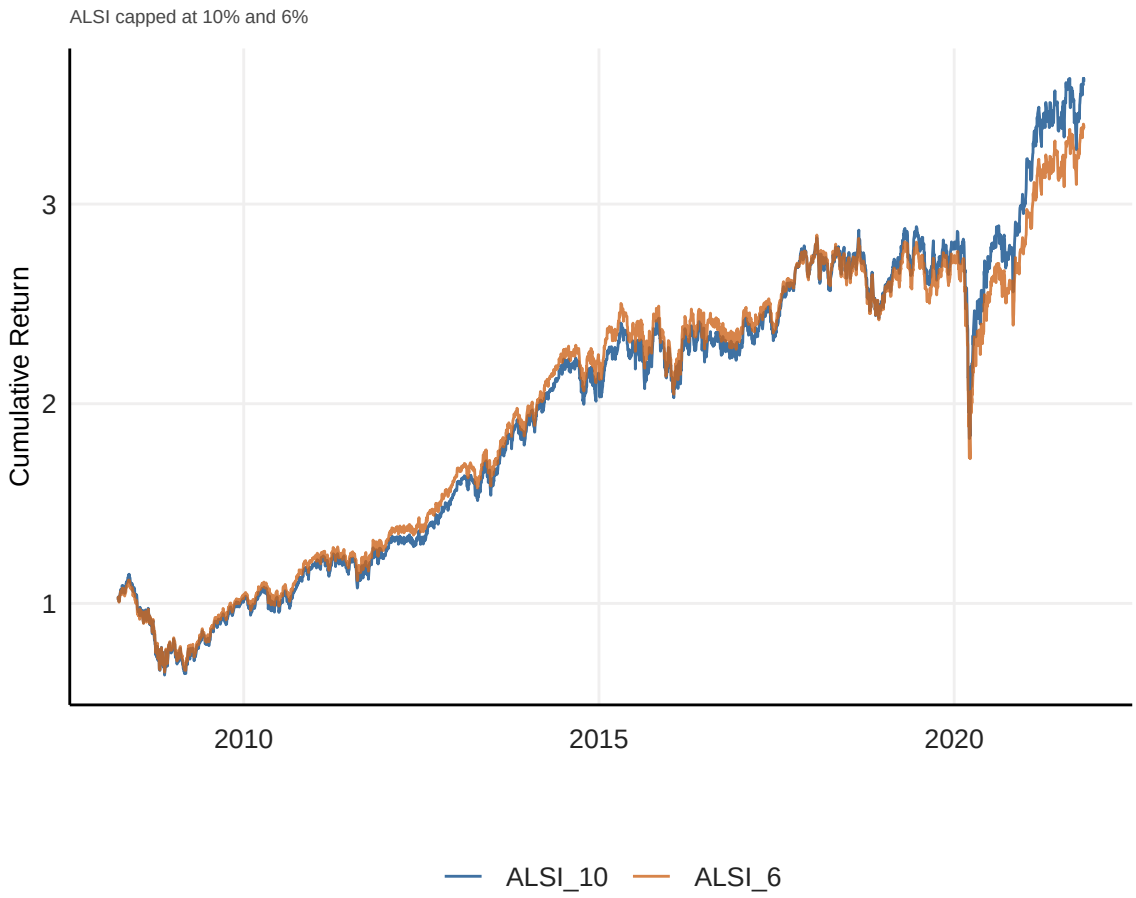
Now looking at the periods of low exchange rate volatility we can see that the ALSI (J200) has a lower volatility than the SWIX (J400). Although the ALSI is more volatile across the entire period when compared to the SWIX, during periods of low volatility the ALSI is more consistent. This can be seen with a lower ratio of volatility to full volatility.

Low Volatility				
Tickers	SD	Full_SD	Period	Ratio
J400	0.1537164	0.1928667	Low_Vol	0.7970086
J200	0.1513182	0.1932903	Low_Vol	0.7828546

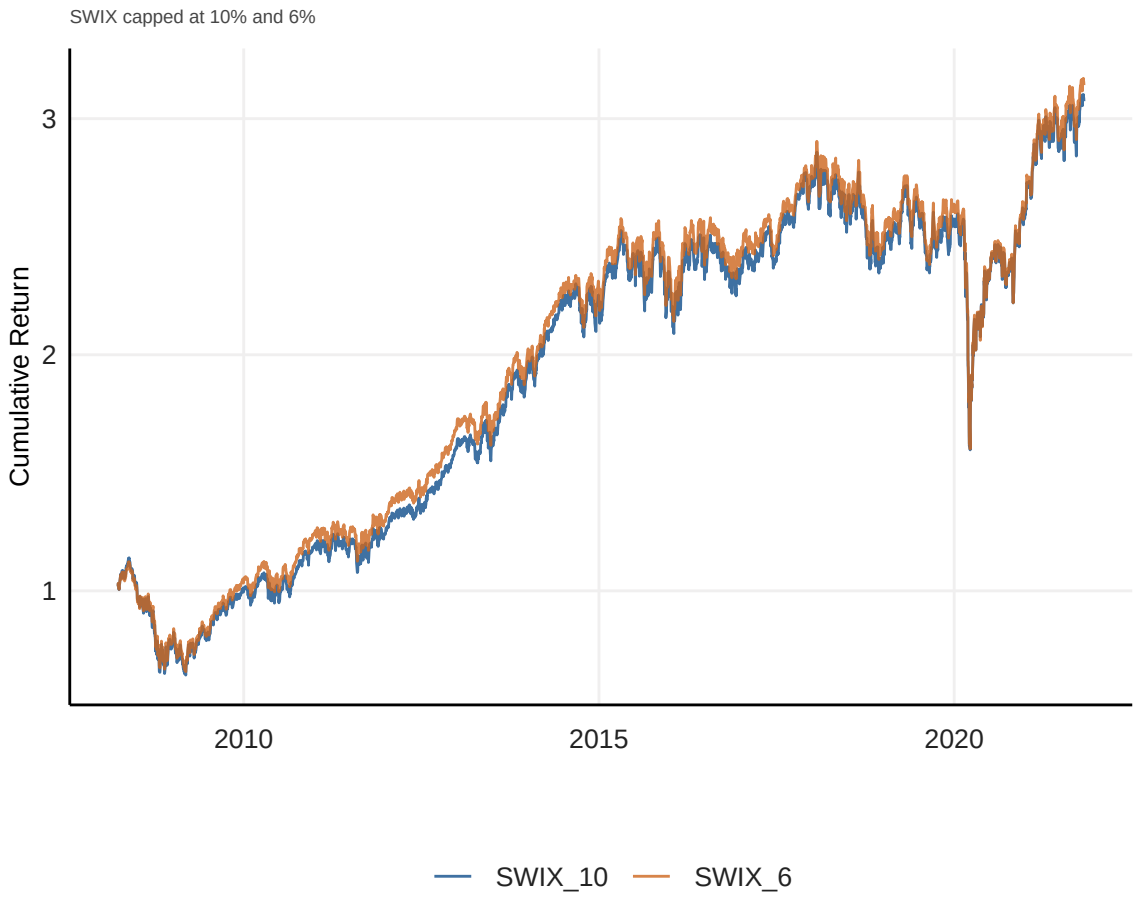
4. Capping of the Index's

To evaluate the effect of capping an index we cap both the ALSI and the SWIX at a level of 6% and a level of 10%, the returns based on the differing cap levels are then graphed for both indices.

Below we can see the difference in cumulative returns of the ALSI capped at a level of 6% and capped at a level of 10%. A larger cap level clearly shows higher cumulative returns and this makes sense as if you can have more of a high returning stock, overall returns can be higher. Although this is also inversely true and a lower cap may force more diversification and thus create a less risky portfolio. Cumulative returns followed quite closely with the lower-capped index doing marginally better until 2020 where the higher index outperformed. This can be due to the large volatility suring this time, a higher cap can capture more of the return.



Now for the SWIX, the results are different to that of the ALSI. The lower-capped index actually outperformed the higher capped index.



5. Conclusion

What this analysis shows is that the two indexes are very similar.