

- 1 Set working directory
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# ETF Fetcher

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Marcel

2024-05-28

## 1 Set working directory

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## 2 Load package

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## 3 Get ETFs

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## 4 Merging 'closing price' columns together

We are only intersted in the closing prices per period so we merge all adjusted closing prices for the funds into on dataframe.

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## 5 Handle missing values with missForest()

There are missing values in the extracted data. This is beacuse some days are bank holidays for some markets and so there would be no trade for that day. Also, some funds were not existing at earlier periods and o would have NA for values.

Here, we use a Random Forest handling algorithm to fill up missing values with a multivariate approach.

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Vang_S.P_500_Acc	iShares_World_Acc	Vang_FTSE_World_Acc	iShares_FTSE_Dist
Min. :38.59	Min. :40.19	Min. : 54.66	Min. : 5.625
1st Qu.:46.28	1st Qu.:47.87	1st Qu.: 64.41	1st Qu.: 8.899
Median :56.95	Median :58.23	Median : 79.28	Median : 9.339
Mean :60.10	Mean :61.01	Mean : 81.59	Mean : 9.181
3rd Qu.:73.07	3rd Qu.:73.02	3rd Qu.: 96.92	3rd Qu.: 9.674
Max. :93.22	Max. :92.51	Max. :120.18	Max. :10.749

## 5.1 The 5 most recent closing prices (Latest at the bottom)

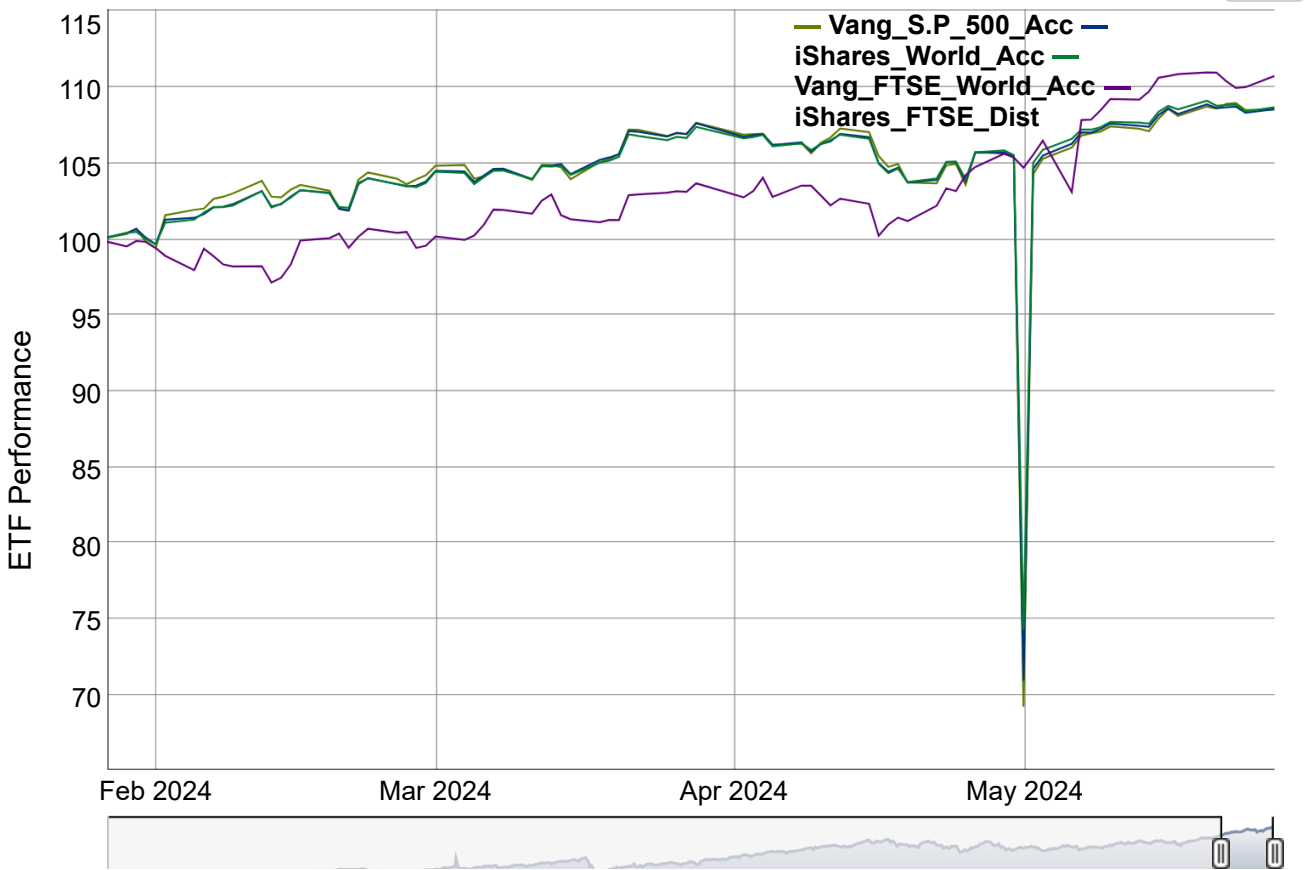
The most recent ETF closing prices are displayed at the bottom of the table.

Show

	Vang_S.P_500_Acc	iShares_World_Acc	Vang_FTSE_World_Acc	iShares_FTSE_Dist
2024-05-21	92.917	92.302	119.82	10.52000
2024-05-22	93.177	92.348	119.88	10.46700
2024-05-23	93.224	92.386	119.90	10.42400
2024-05-24	92.835	92.036	119.40	10.42900
2024-05-27	92.873	92.240	119.70	10.49859

## 6 Plotting the graph

Show



Time

Show

Show

Year	MnPVSP500	MxPVSP500	MnPiSWld	MxPiSWld	MnPVFTSE	MxPVFTSE	MnPiSFTSE	MxPiSFTSE
2017	38.59400	43.46900	41.32000	45.89000	58.0344	61.7288	8.8650	10.070000
2018	39.85000	59.22543	42.14200	60.26988	58.4697	81.8173	8.2400	10.749000
2019	41.00900	58.49675	42.84200	59.57354	58.7765	80.9150	8.3515	9.902500
2020	39.63700	59.72900	40.18700	60.55200	54.6600	82.1100	5.6250	9.883500
2021	57.19200	80.39900	59.27400	79.33600	81.0100	104.9400	8.6555	10.043000
2022	66.24400	80.47900	66.19000	79.53000	88.3100	105.2800	7.3370	10.237001
2023	68.27800	82.46200	69.15800	82.38000	91.6500	107.1000	8.6630	9.707501
2024	59.22543	93.22400	60.26988	92.51200	81.8173	120.1800	9.1800	10.521000

Show

## 7 Tabular & Graphical analysis of each Fund

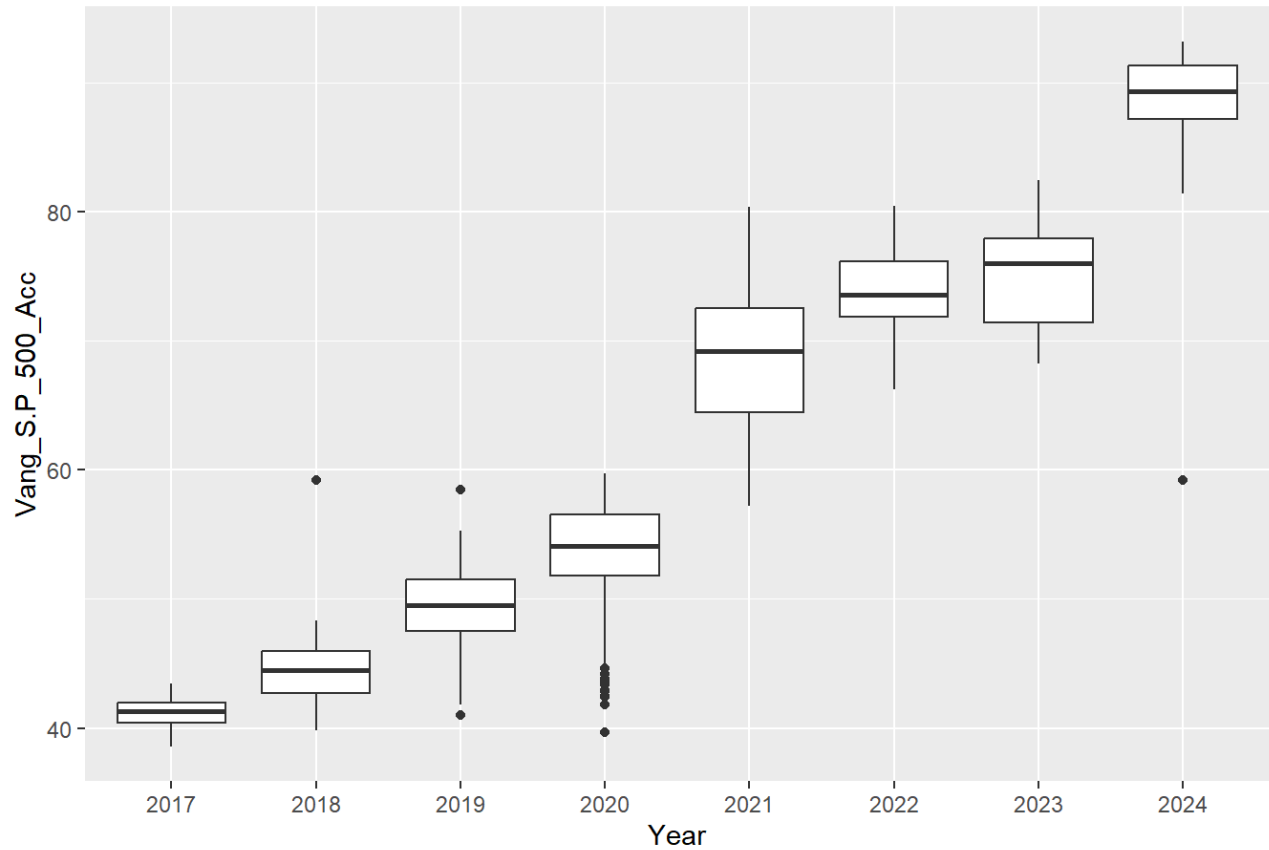
### 7.1 Vanguard S&P 500 (Acc)

Show

Year	Q1	Q3	IQR	UL	LL
2017	40.39500	41.97800	1.583000	44.35250	38.02050
2018	42.69200	45.96600	3.273999	50.87700	37.78100
2019	47.55075	51.49000	3.939250	57.39887	41.64187
2020	51.79850	56.57475	4.776249	63.73912	44.63413
2021	64.45775	72.52025	8.062502	84.61401	52.36400
2022	71.86200	76.15800	4.295998	82.60199	65.41800
2023	71.43450	77.92800	6.493496	87.66824	61.69426
2024	87.20550	91.33000	4.124504	97.51676	81.01874

Show

Box plot for Vang S&P



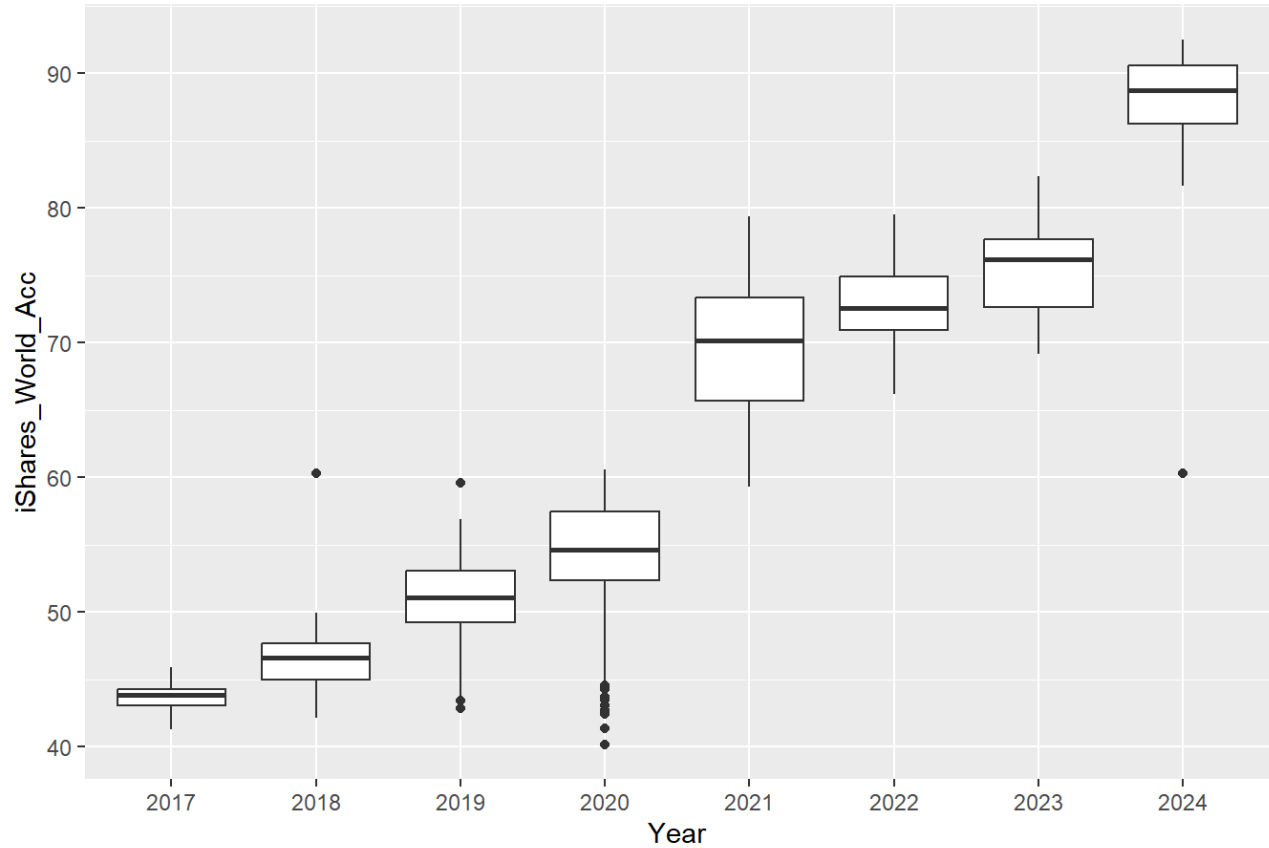
## 7.2 iShares World (Acc)

Show

Year	Q1	Q3	IQR	UL	LL
2017	43.04000	44.25000	1.209999	46.06500	41.22500
2018	44.94375	47.68225	2.738500	51.79000	40.83600
2019	49.21225	53.07600	3.863749	58.87162	43.41663
2020	52.33100	57.48150	5.150498	65.20725	44.60525
2021	65.71000	73.31150	7.601500	84.71375	54.30775
2022	70.91200	74.93400	4.021996	80.96699	64.87901
2023	72.63600	77.68800	5.051998	85.26600	65.05800
2024	86.26800	90.55400	4.285996	96.98299	79.83901

Show

Box plot for iShares World

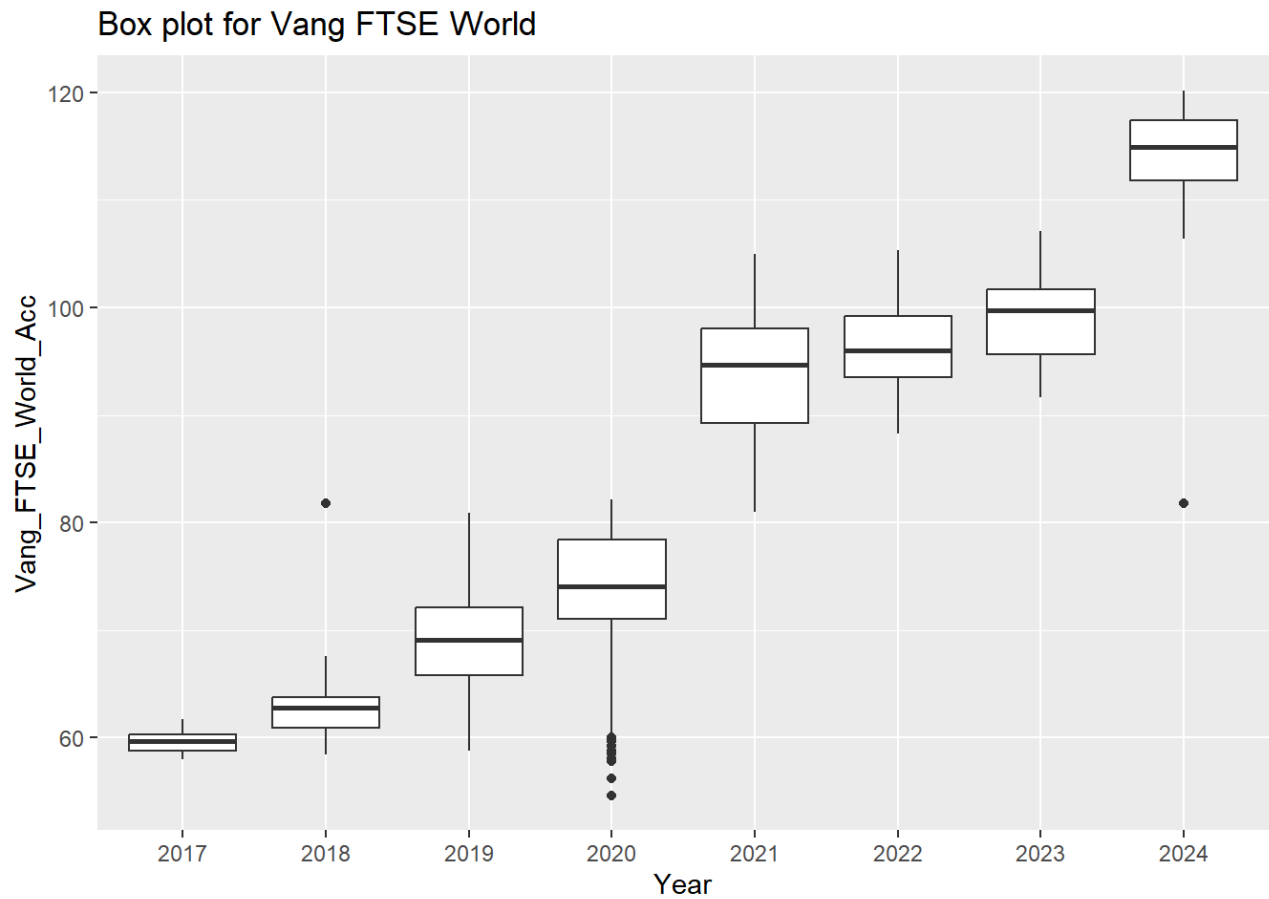


7.3 Vang FTSE World (Acc)

Show

Year	Q1	Q3	IQR	UL	LL
2017	58.77560	60.2645	1.488900	62.49785	56.54225
2018	60.91825	63.7756	2.857350	68.06163	56.63222
2019	65.81290	72.1525	6.339600	81.66190	56.30350
2020	71.05750	78.3725	7.314997	89.34499	60.08501
2021	89.22750	98.0475	8.819998	111.27750	75.99750
2022	93.48000	99.2000	5.719994	107.77999	84.90001
2023	95.65000	101.6400	5.989998	110.62500	86.66500
2024	111.82000	117.3700	5.549999	125.69500	103.49500

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## 7.4 iShares FTSE (Dist)

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Year	Q1	Q3	IQR	UL	LL
2017	9.386249	9.747500	0.3612509	10.289377	8.844373
2018	9.454500	10.201750	0.7472498	11.322625	8.333625
2019	9.011500	9.390125	0.3786252	9.958063	8.443562
2020	7.441250	8.462250	1.0210003	9.993751	5.909750
2021	9.256875	9.695000	0.4381254	10.352188	8.599687
2022	8.471000	9.585000	1.1140003	11.256001	6.799999
2023	9.121750	9.429750	0.3080006	9.891751	8.659749
2024	9.455750	9.805750	0.3499999	10.330750	8.930750

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