



AlgoQwin

1000Portfolios



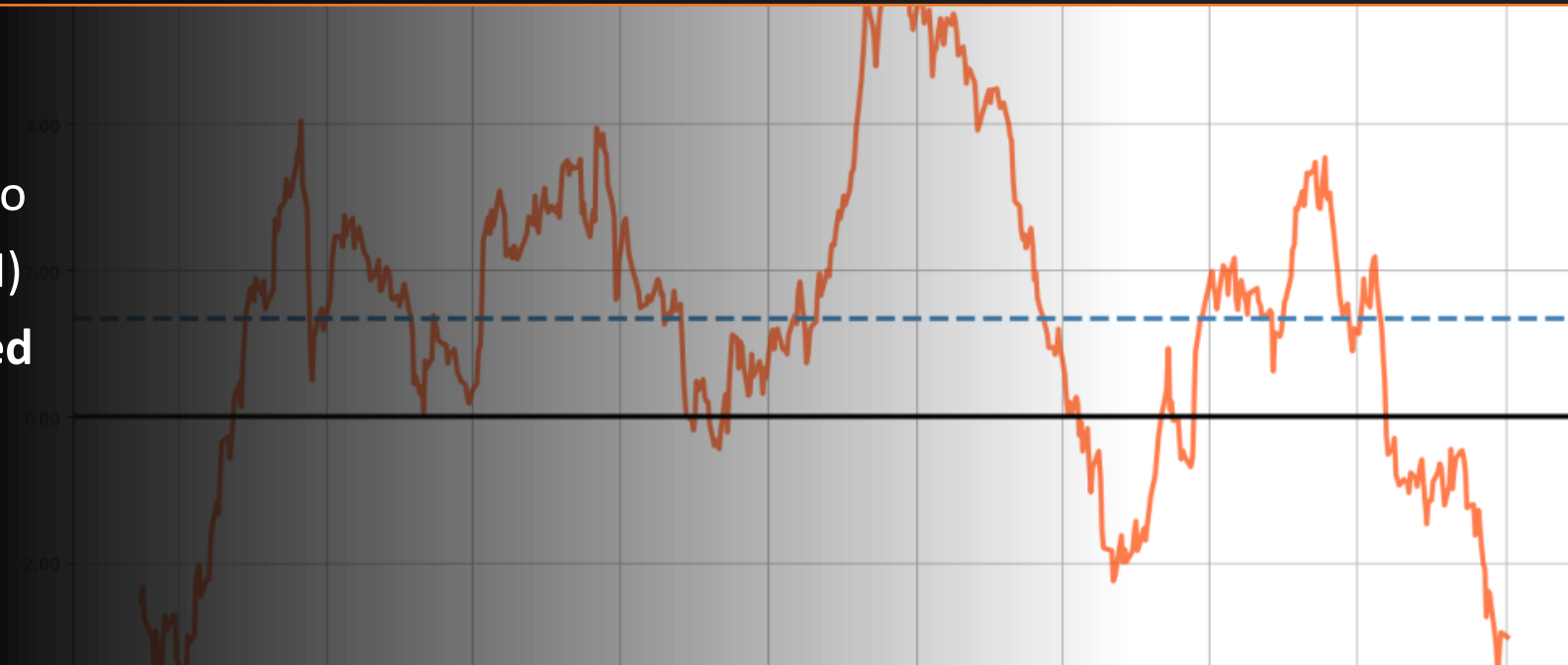
BinPortföy

# MHI based MDD optimized Portfolios

# Markov Markowitz

Key take aways:

- Performance Parameters of a Portfolio
- Exchange's Market Health Index (MHI)
- **Market Health Index based Optimized Portfolios**



# Some portfolio performance parameters



To be maximized:



$$\text{Sharpe Ratio} = \frac{R_p - R_f}{\sigma_p}$$

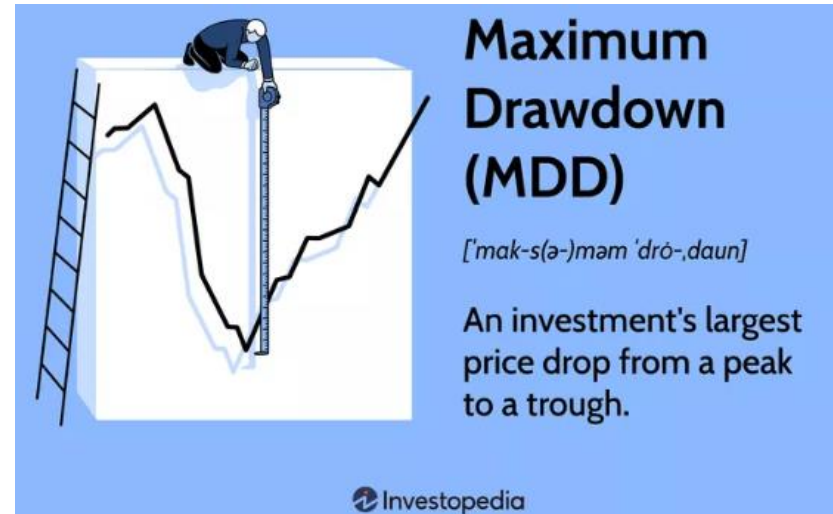
where:

$R_p$  = return of portfolio

$R_f$  = risk-free rate

$\sigma_p$  = standard deviation of the portfolio's excess return

To be minimized:



$$MDD = \frac{\text{Trough Value} - \text{Peak Value}}{\text{Peak Value}}$$

To be maximized:

$$\text{Calmar Ratio} = \frac{R_p - R_f}{\text{Maximum Drawdown}}$$

Where:

$R_p$  = Portfolio return

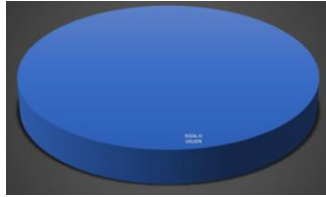
$R_f$  = Risk-free rate

$R_p - R_f$  = Annual rate of return

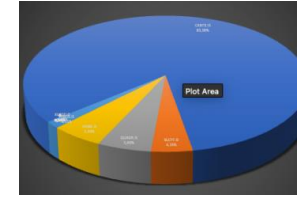
# Performances of BIST Stock Exchange Portfolios for similar time intervals



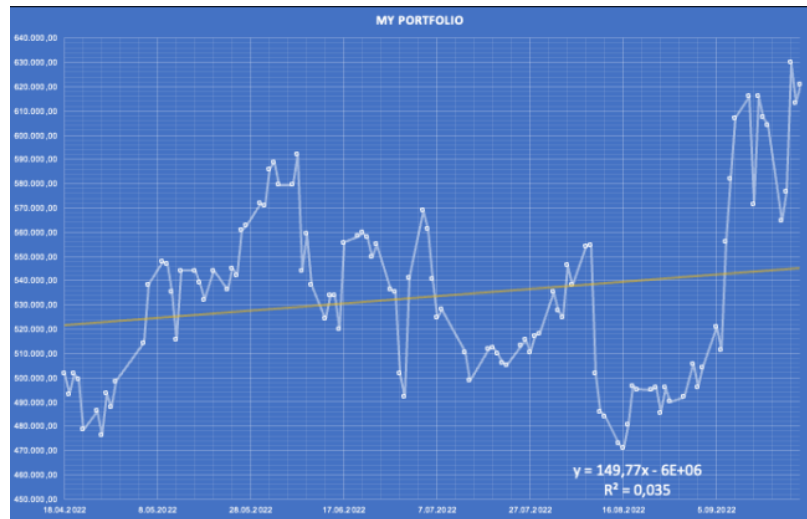
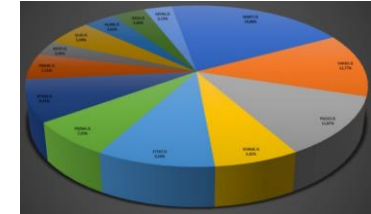
Single asset portfolio



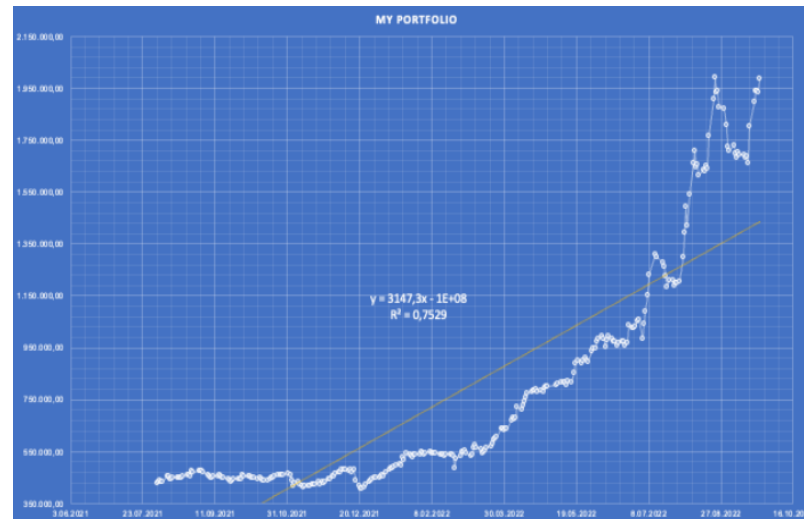
5-asset Sharpe-optimized portfolio



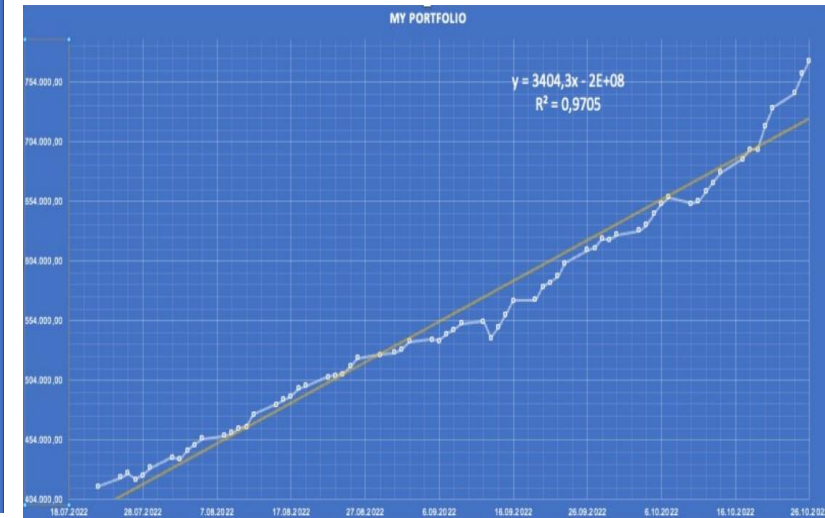
17-asset MDD-optimized portfolio



Period Returns = %23.4  
Stability = %2.53  
Sharpe = 1.23  
MDD = %20.4  
Calmar R = 3.18



Period Returns = %364  
Stability = %85  
Sharpe = 3.61  
MDD = 16.5 %  
Calmar R = 16.97

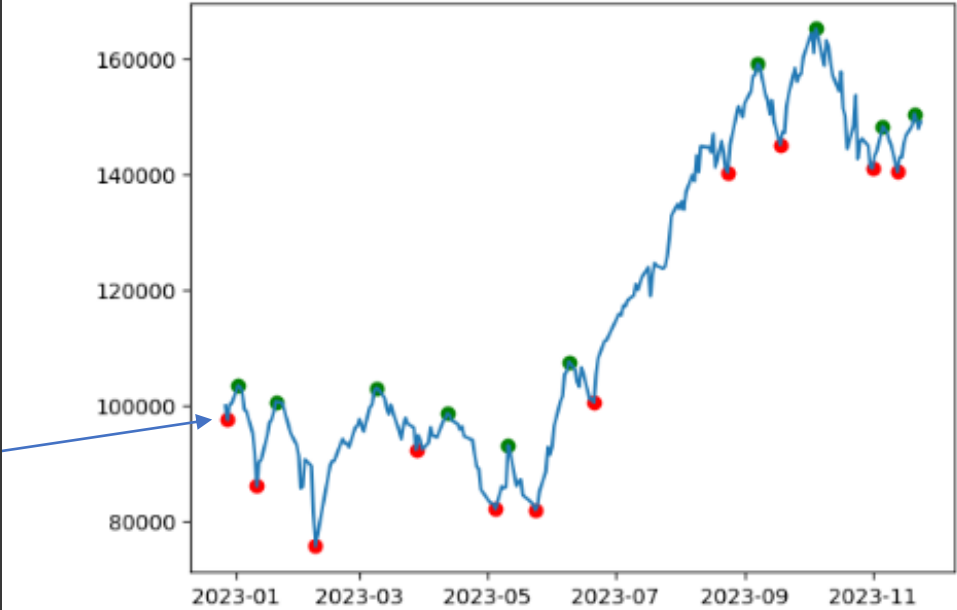


Period Returns = % 87.6  
Stability = %98.7  
Sharpe = 16.5  
MDD = 2.56 %  
Calmar R = 17.8

# An optimized portfolio for 28.12.2022 – 24.12.2023



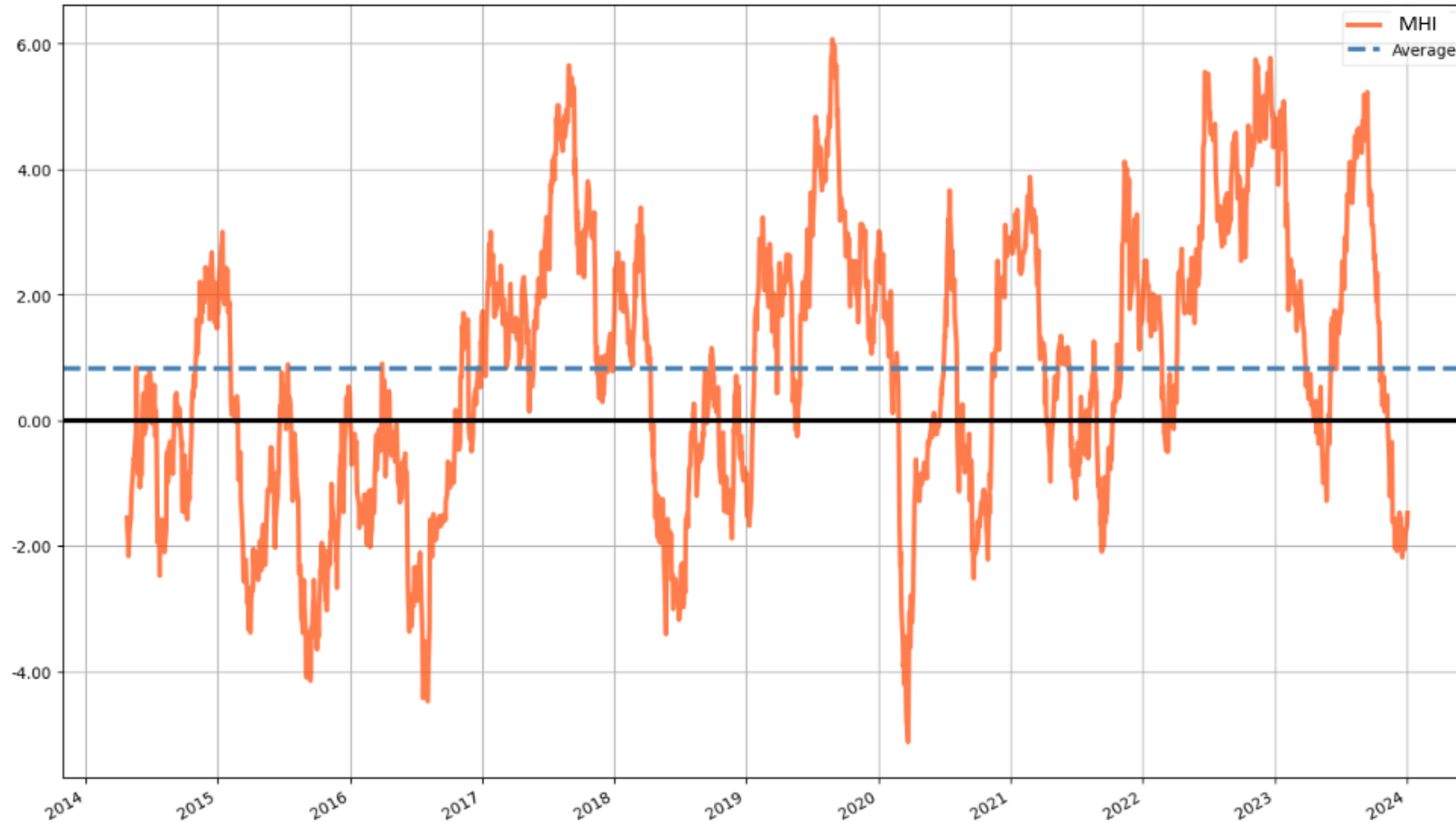
	assets	End PF %	Rebalance Buy Price	Rebalance Shares	Final_Cost
2	ISCTR.IS	15.63	12.06	1295.0	15630.0
11	PETKM.IS	9.73	20.48	532.0	9730.0
0	PGSUS.IS	11.19	503.50	19.0	11190.0
23	KRDMD.IS	6.34	18.07	378.0	6340.0
1	YKBNK.IS	6.21	11.09	587.0	6210.0
10	ALARK.IS	4.54	82.19	67.0	4540.0
21	FROTO.IS	4.73	465.36	11.0	4730.0
14	ARCLK.IS	4.79	106.16	47.0	4790.0
19	GUBRF.IS	5.98	268.90	18.0	5980.0
5	TAVHL.IS	3.18	94.60	40.0	3180.0
18	ASELS.IS	4.37	29.54	127.0	4370.0
7	AKBNK.IS	3.06	18.07	171.0	3060.0
13	TCELL.IS	3.08	36.70	82.0	3080.0
16	KOZAL.IS	5.59	28.86	96.0	5590.0
22	SISE.IS	2.40	41.00	66.0	2400.0
3	BIMAS.IS	1.60	132.74	17.0	1600.0
8	TUPRS.IS	1.80	64.42	30.0	1800.0
17	THYAO.IS	1.84	145.00	12.0	1840.0
24	EREGL.IS	1.37	41.48	38.0	1370.0
12	TOASO.IS	1.52	149.53	10.0	1520.0
15	SAHOL.IS	0.97	42.32	23.0	970.0
9	KOZAA.IS	0.04	57.25	0.0	40.0
6	GARAN.IS	0.04	28.08	1.0	40.0



Start date	2022-12-28
End date	2023-11-24
Total months	10
Backtest	
Annual return	55.8%
Cumulative returns	49.1%
Annual volatility	42.9%
Sharpe ratio	1.24
Calmar ratio	2.08
Stability	0.75
Max drawdown	-26.9%
Omega ratio	1.25
Sortino ratio	2.00
Skew	1.06
Kurtosis	8.93
Tail ratio	1.01
Daily value at risk	-5.2%

# Market Health Index (MHI) for BIST30

- A mean-reverting index for trend detection





# Market Health Index (MHI)

- A mean-reverting index for trend detection

Downtrend

↓

Uptrend

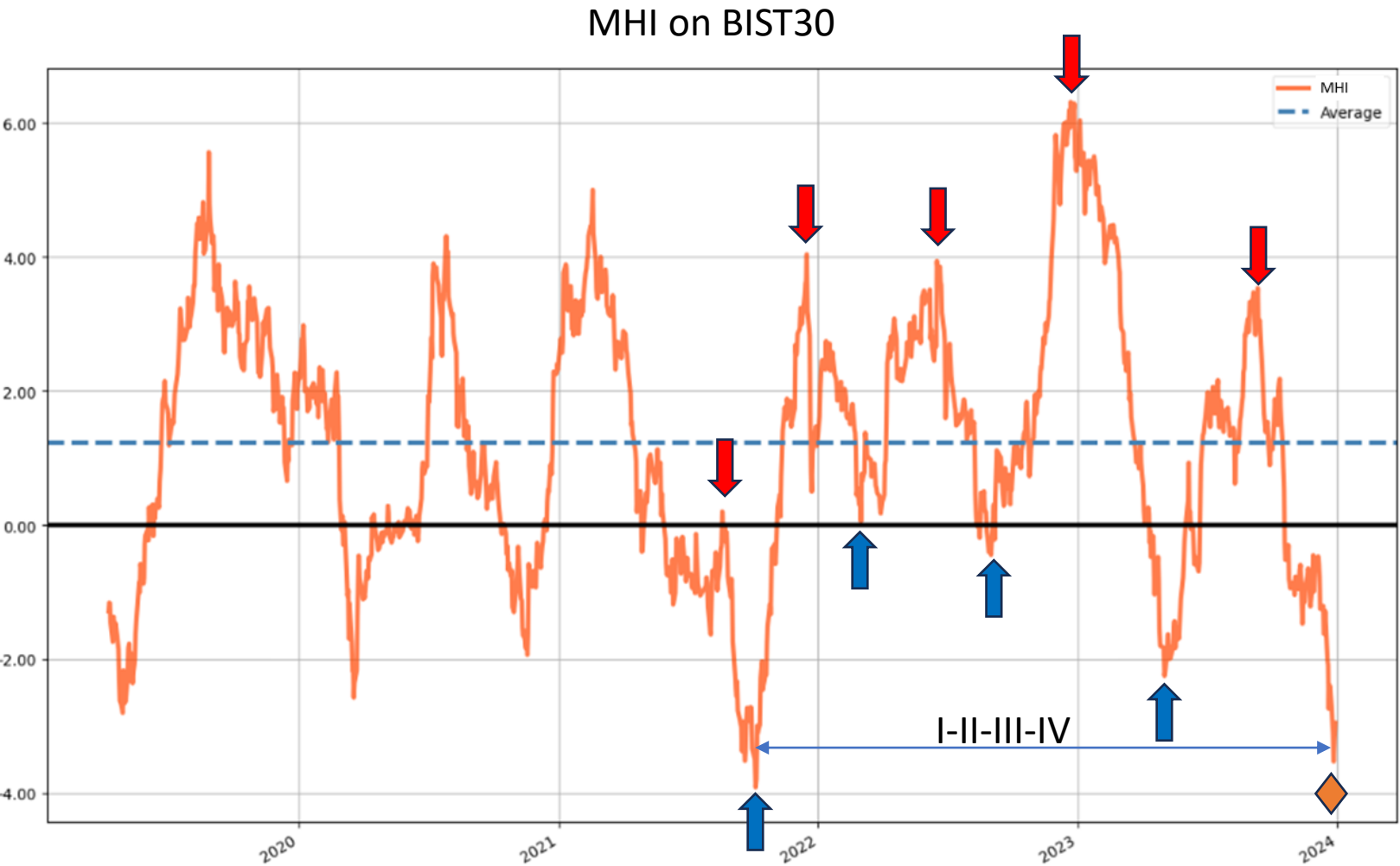
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23.08.2021 – 21.09.2022	PREV UPTREND
16.12.2021 – 24.02.2022	21.09.2021 – 16.12.2021 (I)
07.06.2022 – 16.08.2022	24.02.2022 – 07.06.2022 (II)
27.12.2022 – 09.05.2023	16.08.2022 – 27.12.2022 (III)
11.09.2023 – 26.11.2023	09.05.2023 – 11.09.2023 (IV)
	NEXT UPTREND

BIST100 – last 5 years



Last 5 years >>





# MHI portfolios for 21.09.2021 – 16.12.2021 (I)

Sharpe

i-Sharpe

MDD

i-MDD

MinVAR

assets	%	Amount	buy_price	shares_to_buy
12 TOASO.IS	100.0	100000.0	42.63	2345.0

Annual return	14.252014
Cumulative returns	0.913130
Annual volatility	0.368854
Sharpe ratio	7.604263
Calmar ratio	239.942359
Stability	0.891807
Max drawdown	-0.059398
Omega ratio	3.991563
Sortino ratio	20.520332
Skew	0.842361
Kurtosis	1.165692
Tail ratio	2.196702
Daily value at risk	-0.035341
dtype:	float64

Return: %91.3  
SR: 7.6  
MDD: %5.93  
Calmar R: 240

assets	End PF %	Rebalance Buy Price	Rebalance Shares	Final_Cost
22 SISE.IS	35.89	7.91	4537.0	35890.0
3 BIMAS.IS	18.79	62.27	294.0	18790.0
23 KRDMO.IS	15.86	6.02	2825.0	15860.0
14 ARCLK.IS	13.10	29.96	410.0	13100.0
19 GUBRF.IS	10.48	48.32	219.0	10480.0
15 SAHOL.IS	3.95	8.81	434.0	3950.0
16 KOZAL.IS	1.94	3.96	510.0	1940.0

Annual return	9.690771
Cumulative returns	0.757932
Annual volatility	0.229498
Sharpe ratio	10.483909
Calmar ratio	238.070101
Stability	0.903143
Max drawdown	-0.040706
Omega ratio	7.014126
Sortino ratio	36.562960
Skew	0.717180
Kurtosis	0.827687
Tail ratio	4.276873
Daily value at risk	-0.019366
dtype:	float64

Return: %75.8  
SR: 10.48  
MDD: %4  
Calmar R: 238

assets	%	Amount	buy_price	shares_to_buy
12 TOASO.IS	24.30	24300.0	42.63	570.0
14 ARCLK.IS	24.13	24130.0	29.96	805.0
8 TUPRS.IS	11.44	11440.0	13.61	840.0
11 PETKM.IS	9.06	9060.0	6.10	1485.0
2 ISCTR.IS	7.20	7200.0	2.08	3461.0
3 BIMAS.IS	6.23	6230.0	62.27	100.0
21 FROTO.IS	5.84	5840.0	144.96	40.0
0 PGSUS.IS	3.52	3520.0	69.10	50.0
17 THYAO.IS	3.22	3220.0	12.81	251.0
4 ENKAL.IS	2.52	2520.0	8.95	281.0
5 TAVHL.IS	2.38	2380.0	23.38	101.0
18 ASELS.IS	0.09	90.0	7.26	12.0
1 YKBNK.IS	0.07	70.0	2.13	32.0
20 EKGYO.IS	0.01	10.0	1.66	6.0

Annual return	8.530963
Cumulative returns	0.710519
Annual volatility	0.209468
Sharpe ratio	10.913455
Calmar ratio	302.183807
Stability	0.941758
Max drawdown	-0.028231
Omega ratio	6.866781
Sortino ratio	30.044713
Skew	0.162274
Kurtosis	0.575024
Tail ratio	4.144095
Daily value at risk	-0.017319
dtype:	float64

Return: %71.1  
SR: 10.91  
MDD: %2.82  
**Calmar R: 302**

assets	End PF %	Rebalance Buy Price	Rebalance Shares	Final_Cost
23 KRDMO.IS	100.0	6.02	16611.0	100000.0

Annual return	11.928736
Cumulative returns	0.839315
Annual volatility	0.391488
Sharpe ratio	6.761111
Calmar ratio	177.915978
Stability	0.872775
Max drawdown	-0.067047
Omega ratio	3.032249
Sortino ratio	15.278411
Skew	0.173958
Kurtosis	-0.694130
Tail ratio	1.758822
Daily value at risk	-0.038819
dtype:	float64

Return: %83.9  
SR: 6.76  
MDD: %6.7  
Calmar R: 178

assets	%	Amount	buy_price	shares_to_buy
14 ARCLK.IS	52.46	52460.0	29.96	1751.0
18 ASELS.IS	25.61	25610.0	7.26	3527.0
3 BIMAS.IS	13.70	13700.0	62.27	220.0
8 TUPRS.IS	3.86	3860.0	13.61	283.0
21 FROTO.IS	3.78	3780.0	144.96	26.0
9 KOZAA.IS	0.58	580.0	14.18	40.0

Annual return	6.806134
Cumulative returns	0.631116
Annual volatility	0.242749
Sharpe ratio	8.617729
Calmar ratio	268.140086
Stability	0.900049
Max drawdown	-0.025383
Omega ratio	4.286474
Sortino ratio	22.226164
Skew	0.372719
Kurtosis	0.004047
Tail ratio	2.281562
Daily value at risk	-0.022282
dtype:	float64

Return: %63.1  
SR: 8.61  
MDD: %2.53  
Calmar R: 268

# MHI portfolios for 24.02.2022 – 07.06.2022 (II)



## Sharpe

## i-Sharpe

## MDD

## i-MDD

## MinVAR

	assets	End PF %	Rebalance Buy Price	Rebalance Shares	Final_Cost
10	ALARK.IS	100.0	17.9	5586.0	100000.0

	assets	%	Amount	buy_price	shares_to_buy
6	GARAN.IS	45.33	45330.0	10.58	4284.0
4	ENKAL.IS	34.93	34930.0	12.14	2877.0
22	SISE.IS	14.29	14290.0	12.42	1150.0
20	EKGYO.IS	5.45	5450.0	2.06	2645.0

Annual return	11.824180
Cumulative returns	0.990637
Annual volatility	0.443749
Sharpe ratio	5.993665
Calmar ratio	117.564855
Stability	0.857358
Max drawdown	-0.100576
Omega ratio	2.818294
Sortino ratio	13.487473
Skew	0.394159
Kurtosis	0.038564
Tail ratio	1.992343
Daily value at risk	-0.045353
dtype: float64	

Return: %99  
SR: 5.99  
MDD: %10.0  
Calmar R: 117.6

Annual return	3.778526
Cumulative returns	0.525111
Annual volatility	0.235982
Sharpe ratio	6.764307
Calmar ratio	94.450954
Stability	0.929827
Max drawdown	-0.040005
Omega ratio	3.295276
Sortino ratio	13.596458
Skew	0.053297
Kurtosis	1.174751
Tail ratio	1.748567
Daily value at risk	-0.023397
dtype: float64	

Return: %52.5  
SR: 6.76  
MDD: %4.0  
Calmar R: 94.5

	assets	%	Amount	buy_price	shares_to_buy
10	ALARK.IS	80.8	80800.0	17.90	4513.0
6	GARAN.IS	19.2	19200.0	10.58	1814.0

Annual return	9.702262
Cumulative returns	0.895811
Annual volatility	0.377202
Sharpe ratio	6.496966
Calmar ratio	130.978730
Stability	0.883556
Max drawdown	-0.074075
Omega ratio	3.129895
Sortino ratio	15.083878
Skew	0.405920
Kurtosis	0.170517
Tail ratio	2.171758
Daily value at risk	-0.037798
dtype: float64	

Return: %89.6  
SR: 6.49  
MDD: %7.40  
**Calmar R: 131**

	assets	End PF %	Rebalance Buy Price	Rebalance Shares	Final_Cost
12	TOASO.IS	100.0	73.0	1369.0	100000.0

Annual return	0.729722
Cumulative returns	0.159353
Annual volatility	0.366035
Sharpe ratio	1.676824
Calmar ratio	4.400429
Stability	0.175484
Max drawdown	-0.165830
Omega ratio	1.322259
Sortino ratio	2.886932
Skew	0.688834
Kurtosis	1.417935
Tail ratio	1.240401
Daily value at risk	-0.043680
dtype: float64	

Return: %15.93  
SR: 1.67  
MDD: %16.58  
Calmar R: 4.4

	assets	%	Amount	buy_price	shares_to_buy
6	GARAN.IS	75.66	75660.0	10.58	7151.0
4	ENKAL.IS	15.44	15440.0	12.14	1271.0
16	KOZAL.IS	5.39	5390.0	5.26	1024.0
10	ALARK.IS	3.51	3510.0	17.90	196.0

Annual return	3.688573
Cumulative returns	0.517310
Annual volatility	0.276655
Sharpe ratio	5.737442
Calmar ratio	47.993474
Stability	0.933995
Max drawdown	-0.076856
Omega ratio	3.159626
Sortino ratio	11.595196
Skew	0.180678
Kurtosis	1.832973
Tail ratio	2.025642
Daily value at risk	-0.028556
dtype: float64	

Return: %51.7  
SR: 5.73  
MDD: %7.68  
Calmar R: 48

# MHI portfolios for 16.08.2022 – 27.12.2022 (III)

## Sharpe

## i-Sharpe

## MDD

## i-MDD

## MinVAR

	assets	End PF %	Rebalance	Buy Price	Rebalance	Shares	Final_Cost
23	GUBRF.IS	45.55		101.30		431.0	45550.0
6	ENKAI.IS	17.15		20.09		881.0	17150.0
13	THYAO.IS	13.64		63.60		214.0	13640.0
11	EKGYO.IS	12.51		3.40		3897.0	12510.0
2	BIMAS.IS	6.10		103.78		61.0	6100.0
7	TAVHL.IS	4.09		60.25		70.0	4090.0
21	ALARKIS	0.96		40.36		25.0	960.0

Annual return	7.472423
Cumulative returns	1.200285
Annual volatility	0.392396
Sharpe ratio	5.661761
Calmar ratio	103.113989
Stability	0.927129
Max drawdown	-0.072468
Omega ratio	2.539717
Sortino ratio	10.524419
Skew	-0.146613
Kurtosis	0.815543
Tail ratio	2.130818
Daily value at risk	-0.040621
dtype: float64	

Return: %120  
SR: 5.66  
MDD: %7.2  
**Calmar R: 103**

	assets	%	Amount	buy_price	shares_to_buy
20	KRDMD.IS	57.84	57840.0	10.41	5556.0
24	ARCLK.IS	27.26	27260.0	66.55	409.0
10	KOZAL.IS	11.84	11840.0	6.94	1706.0
17	EREGL.IS	3.05	3050.0	27.84	109.0

NEW PORTFOLIO PERFORMANCE	
Annual return	5.316325
Cumulative returns	0.974283
Annual volatility	0.451143
Sharpe ratio	4.321767
Calmar ratio	30.579714
Stability	0.714017
Max drawdown	-0.173851
Omega ratio	2.050148
Sortino ratio	7.966994
Skew	0.083811
Kurtosis	-0.000618
Tail ratio	1.459422
Daily value at risk	-0.049102
dtype: float64	

Return: %97.4  
SR: 4.32  
MDD: %17.4  
Calmar R: 30.5

	assets	End PF %	Rebalance	Buy Price	Rebalance	Shares	Final_Cost
2	BIMAS.IS	49.29		103.78		449.0	49290.0
18	TUPRS.IS	15.30		36.40		498.0	15300.0
11	EKGYO.IS	14.34		3.40		4058.0	14340.0
23	GUBRF.IS	8.77		101.30		75.0	8770.0
6	ENKAI.IS	5.86		20.09		273.0	5860.0
10	KOZAL.IS	3.19		6.94		685.0	3190.0
4	PGSUS.IS	2.61		182.80		14.0	2610.0
21	ALARKIS	0.64		40.36		16.0	640.0

Annual return	3.824636
Cumulative returns	0.787438
Annual volatility	0.352828
Sharpe ratio	4.647957
Calmar ratio	38.622585
Stability	0.932527
Max drawdown	-0.099026
Omega ratio	2.111058
Sortino ratio	8.070775
Skew	-0.045282
Kurtosis	1.159713
Tail ratio	1.243785
Daily value at risk	-0.037945
dtype: float64	

Return: %78.7  
SR: 4.64  
MDD: %9.9  
Calmar R: 38.6

	assets	End PF %	Rebalance	Buy Price	Rebalance	Shares	Final_Cost
KRDMD.IS		100.0		10.41		9606.0	100000.0

Annual return	3.467853
Cumulative returns	0.737471
Annual volatility	0.607944
Sharpe ratio	2.764232
Calmar ratio	15.648331
Stability	0.566899
Max drawdown	-0.221612
Omega ratio	1.599081
Sortino ratio	5.207911
Skew	0.614337
Kurtosis	0.285495
Tail ratio	1.599217
Daily value at risk	-0.069925
dtype: float64	

Return: %73.7  
SR: 2.76  
MDD: %22.2  
Calmar R: 15.6

	assets	%	Amount	buy_price	shares_to_buy
14	ARCLK.IS	17.64	17640.0	66.55	265.0
4	ENKAI.IS	15.28	15280.0	20.09	760.0
8	TUPRS.IS	14.81	14810.0	36.40	406.0
20	EKGYO.IS	12.16	12160.0	3.40	3576.0
10	ALARKIS	9.45	9450.0	40.36	234.0
19	GUBRF.IS	8.81	8810.0	101.30	86.0
0	PGSUS.IS	6.53	6530.0	182.80	35.0
24	EREGL.IS	6.06	6060.0	27.84	217.0
13	TCELL.IS	5.10	5100.0	16.92	301.0
18	ASELS.IS	4.14	4140.0	12.09	342.0

Annual return	5.147548
Cumulative returns	0.954648
Annual volatility	0.313961
Sharpe ratio	5.960771
Calmar ratio	42.996908
Stability	0.904405
Max drawdown	-0.119719
Omega ratio	2.647693
Sortino ratio	9.991352
Skew	-0.634967
Kurtosis	1.715434
Tail ratio	1.252960
Daily value at risk	-0.032129
dtype: float64	

Return: %95.5  
SR: 5.96  
MDD: %12.0  
Calmar R: 43

# MHI portfolios for 09.05.2023 – 11.09.2023 (IV)



Sharpe

i-Sharpe

MDD

i-MDD

MinVAR

assets	End PF %	Rebalance	Buy Price	Rebalance Shares	Final_Cost
16 TOASO.IS	100.0	184.9	540.0	100000.0	

Annual return	2.904254
Cumulative returns	0.566145
Annual volatility	0.550040
Sharpe ratio	2.751837
Calmar ratio	21.159637
Stability	0.802211
Max drawdown	-0.137254
Omega ratio	1.543901
Sortino ratio	4.714511
Skew	0.269513
Kurtosis	0.112597
Tail ratio	1.325469
Daily value at risk	-0.063292
dtype: float64	

Return: %56.6  
SR: 2.75  
MDD: %13.7  
Calmar R: 21.2

assets	End PF %	Rebalance	Buy Price	Rebalance Shares	Final_Cost
10 KOZALIS	44.11	16.35	3085.0	44110.0	
15 PETKM.IS	34.35	12.61	2563.0	34350.0	
17 EREGLIS	21.54	30.62	562.0	21540.0	

NEW PORTFOLIO PERFORMANCE	
Annual return	5.001695
Cumulative returns	0.804414
Annual volatility	0.481934
Sharpe ratio	3.967645
Calmar ratio	31.146773
Stability	0.855422
Max drawdown	-0.160585
Omega ratio	1.917281
Sortino ratio	7.175025
Skew	0.120113
Kurtosis	-0.125815
Tail ratio	1.307665
Daily value at risk	-0.053130
dtype: float64	

Return: %80.4  
SR: 3.96  
MDD: %16.1  
Calmar R: 31.1

assets	End PF %	Rebalance	Buy Price	Rebalance Shares	Final_Cost
18 TUPRS.IS	45.87	63.69	750.0	45870.0	
19 FROTO.IS	27.69	511.42	51.0	27690.0	
2 BIMAS.IS	21.32	158.67	118.0	21320.0	
17 EREGLIS	4.94	30.62	222.0	4940.0	
16 TOASO.IS	0.18	184.90	1.0	180.0	
7 TAVHLIS	0.00	68.10	0.0	0.0	
23 GUBRFIS	0.00	220.50	0.0	0.0	
4 PGSUS.IS	0.00	447.90	0.0	0.0	

Annual return	6.286776
Cumulative returns	0.923486
Annual volatility	0.432253
Sharpe ratio	4.824477
Calmar ratio	50.665977
Stability	0.972305
Max drawdown	-0.124083
Omega ratio	2.259262
Sortino ratio	9.152938
Skew	0.112835
Kurtosis	1.562322
Tail ratio	1.982177
Daily value at risk	-0.046183
dtype: float64	

Return: %92.3  
SR: 4.82  
MDD: %12.4  
Calmar R: 50.7

assets	End PF %	Rebalance	Buy Price	Rebalance Shares	Final_Cost
23 GUBRFIS	100.0	220.5	453.0	100000.0	

Annual return	3.621743
Cumulative returns	0.655632
Annual volatility	0.416119
Sharpe ratio	3.892180
Calmar ratio	31.795378
Stability	0.911122
Max drawdown	-0.113908
Omega ratio	1.915695
Sortino ratio	7.629876
Skew	0.614224
Kurtosis	0.923780
Tail ratio	1.592169
Daily value at risk	-0.045999
dtype: float64	

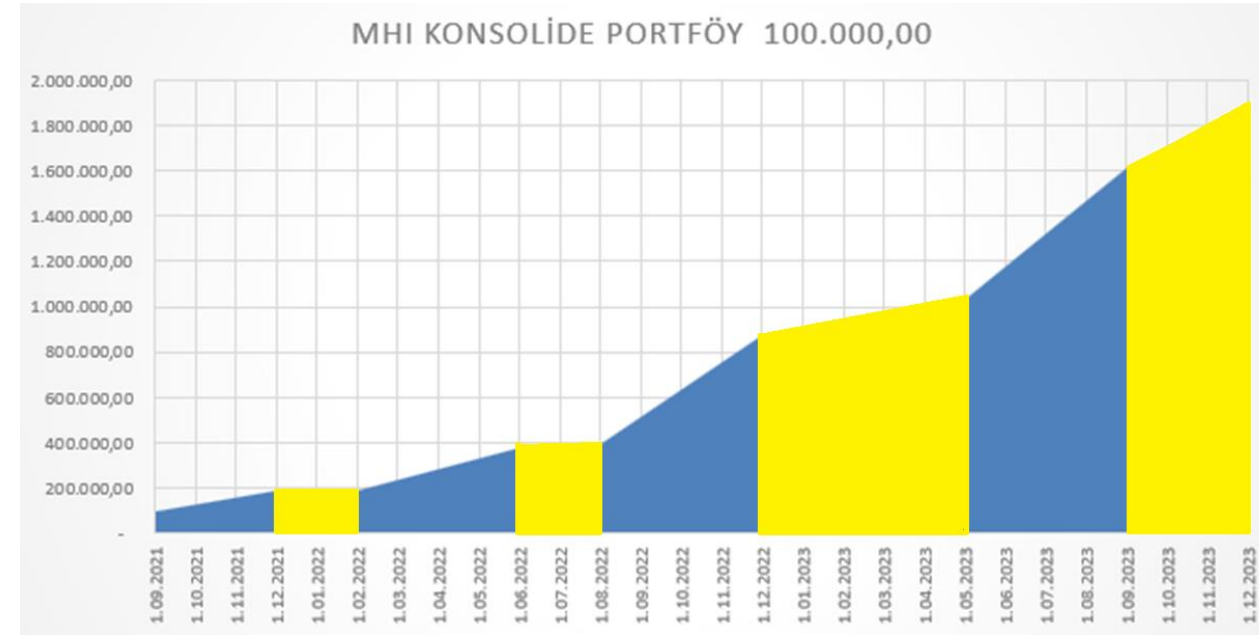
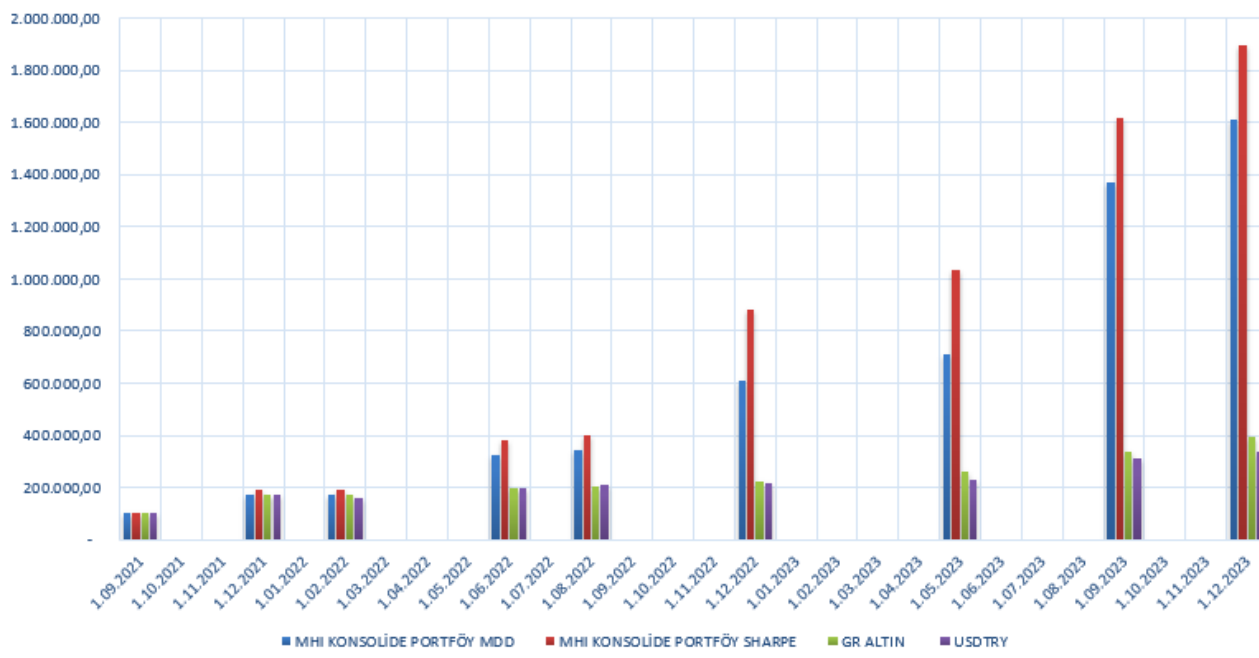
Return: %65.6  
SR: 3.39  
MDD: %11.4  
Calmar R: 31.8

assets	End PF %	Rebalance	Buy Price	Rebalance Shares	Final_Cost
2 BIMAS.IS	81.45	158.67	459.0	81450.0	
17 EREGLIS	16.82	30.62	772.0	16820.0	
10 KOZALIS	1.73	16.35	214.0	1730.0	

Annual return	3.518971
Cumulative returns	0.643415
Annual volatility	0.455894
Sharpe ratio	3.541547
Calmar ratio	19.774559
Stability	0.934381
Max drawdown	-0.177954
Omega ratio	1.823854
Sortino ratio	6.316272
Skew	0.198135
Kurtosis	0.695301
Tail ratio	1.346423
Daily value at risk	-0.051030
dtype: float64	

Return: %64.3  
SR: 3.96  
MDD: %17.8  
Calmar R: 19.8





PORTFÖY	BAŞLANGIÇ	BİTİŞ	KAR	GÜN	G. ORTALAMA
MHI SHARPE-ALTIN KONSOLİDE	9.05.2023	26.12.2023	83,98%	231	0,36%
MHI SHARPE-ALTIN KONSOLİDE	27.12.2022	26.12.2023	115,45%	364	0,32%
MHI SHARPE-ALTIN KONSOLİDE	16.12.2021	26.12.2023	891,79%	740	1,21%
MHI SHARPE-ALTIN KONSOLİDE	21.09.2021	26.12.2023	1797,30%	826	2,18%
MHI MDD-ALTIN KONSOLİDE	9.05.2023	26.12.2023	125,92%	231	0,55%
MHI MDD-ALTIN KONSOLİDE	27.12.2022	26.12.2023	164,57%	364	0,45%
MHI MDD-ALTIN KONSOLİDE	16.12.2021	26.12.2023	842,53%	740	1,14%
MHI MDD-ALTIN KONSOLİDE	21.09.2021	26.12.2023	1512,67%	826	1,83%
GR ALTIN	9.05.2023	26.12.2023	52,21%	231	0,23%
GR ALTIN	27.12.2022	26.12.2023	78,25%	364	0,21%
GR ALTIN	16.12.2021	26.12.2023	126,67%	740	0,17%
GR ALTIN	21.09.2021	26.12.2023	293,92%	826	0,36%
USDTRY	9.05.2023	26.12.2023	150,14%	231	0,65%
USDTRY	27.12.2022	26.12.2023	57,15%	364	0,16%
USDTRY	16.12.2021	26.12.2023	97,90%	740	0,13%
USDTRY	21.09.2021	26.12.2023	240,00%	826	0,29%

# Procedure for Portfolio Construction



Calculate and plot 5 year-MHI for at least 2 exchanges



Detect peaks ( $MHI > 4$ ) and valleys ( $MHI < -2$ )



Apply Volatility and Correlation filters

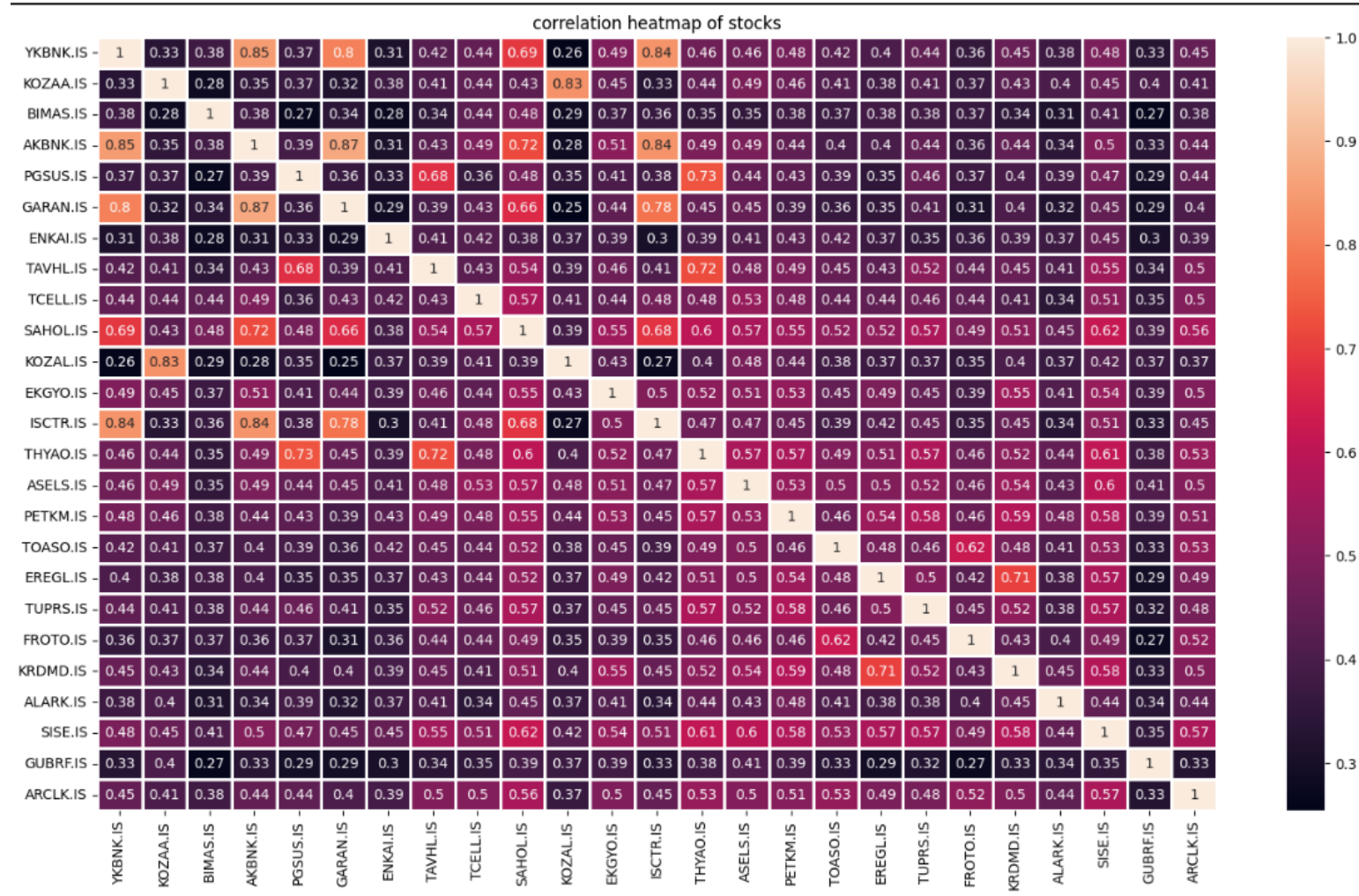


At  $MHI < -2$ , start from latest peak, calculate best performing portfolio in downtrend, enter portfolio



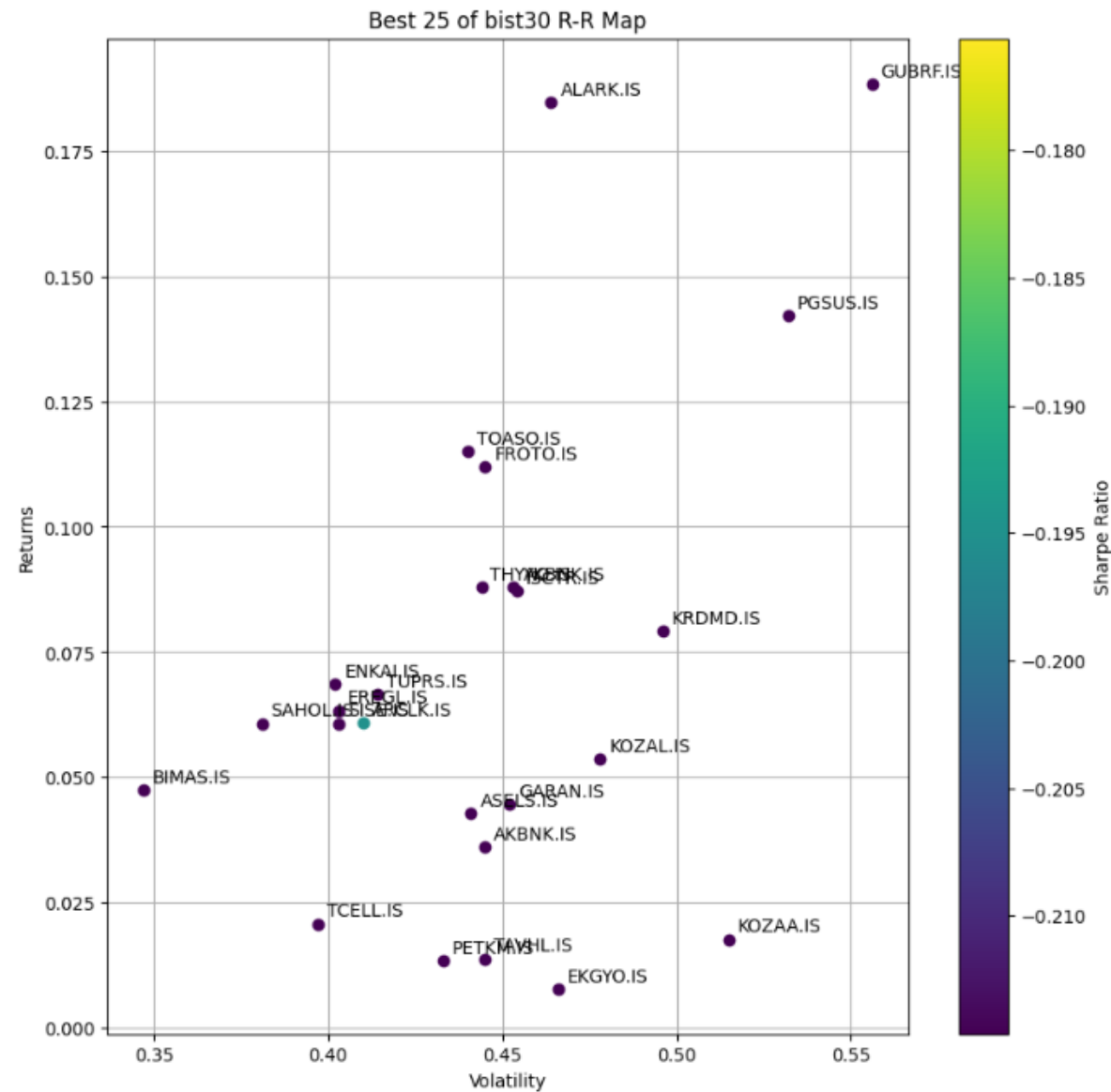
At the first  $MHI > 4$ , sell the portfolio and diverse to other exchange's  $MHI < -2$ .

# Filter for Correlation





# Filter for Volatility



# Our B2B Product:



- AI assisted portfolios management with:
  - Entries-exits based on MHI of that exchange
  - Sharpe, i-Sharpe, MDD, i-MDD, MinVAR optimized
  - Correlation, volatility, fundamentals filtering
  - Multi-Exchange Consolidated returns
  - KAP news filter
- Customer Positioning:
  - Investors with at least 16 month patience
  - Insurance, retiree funds
  - Retirees



## MDD-optimized Multi-Exchange Portfolios with MHI alert

Verified Certificate: 55831711

Issued: August 2, 2022

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NITESH KHADELWAL

Director  
QuantInsti

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In 2024:



# Master of Science in Financial Engineering (MScFE)



*Credly*

Kerem: «benden ne istiyorsun» diye sorunca 😊 anlatılacak :

Ürün Vizyonu:

- Retail Customer lara Netflix gibi bir sayfa açılsın, film yerine portföy veya algoritma beğensin.
- Yazılım şirketi kuralım – TR ? Delaware C Corp ?
- B2B olarak Portföy Yönetim şirketlerine AI Algo/Portföy Hesaplama danışmanlığı

Ortaklık/Yönetim:

1. Mühendislik olarak web Front End App geliştirilmesi Backend ile entegrasyon
2. Yazılım güvenliğinin sağlanması –
3. Birden fazla yazılımcı ile Fikri haklar anlaşmaları
4. Fon şirketi başvurabildiği Sermaye Piyasası Lisansı alınması

Diğer ilgililer: Murat Özbayoğlu (TOBB-ETÜ), Vijay Singh Dalal (H-TECH), İlker Altıntaş (Akbank CIO)