

```
--2024-02-11 21:39:33-- https://raw.githubusercontent.com/MarkovMarkowitz/MarkovMarkowitz/main/XLS-CSV/Best_PF_For_bist30.csv
Resolving raw.githubusercontent.com (raw.githubusercontent.com)... 185.199.111.133, 185.199.110.133, 185.199.108.133, ...
Connecting to raw.githubusercontent.com (raw.githubusercontent.com)|185.199.111.133|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 924 [text/plain]
Saving to: 'Best_PF_For_bist30.csv'
```

```
Best_PF_For_bist30. 100%[=====>]      924  --.-KB/s   in 0s
```

```
2024-02-11 21:39:33 (32.6 MB/s) - 'Best_PF_For_bist30.csv' saved [924/924]
```

```
--2024-02-11 21:39:33-- https://raw.githubusercontent.com/MarkovMarkowitz/MarkovMarkowitz/main/CUSTOMERS/NEG_SHARPE.csv
Resolving raw.githubusercontent.com (raw.githubusercontent.com)... 185.199.111.133, 185.199.108.133, 185.199.110.133, ...
Connecting to raw.githubusercontent.com (raw.githubusercontent.com)|185.199.111.133|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 724 [text/plain]
Saving to: 'NEG_SHARPE.csv'
```

```
NEG_SHARPE.csv      100%[=====>]      724  --.-KB/s   in 0s
```

```
2024-02-11 21:39:34 (53.7 MB/s) - 'NEG_SHARPE.csv' saved [724/724]
```

```
Current Date: 2024-02-11
47 days before current date: 2023-12-26
0 days before current date: 2024-02-12
```

Requirement already satisfied: pyfolio in /usr/local/lib/python3.10/dist-packages (0.9.2)

Requirement already satisfied: ipython>=3.2.3 in /usr/local/lib/python3.10/dist-packages (from pyfolio) (7.34.0)

Requirement already satisfied: matplotlib>=1.4.0 in /usr/local/lib/python3.10/dist-packages (from pyfolio) (3.7.1)

Requirement already satisfied: numpy>=1.11.1 in /usr/local/lib/python3.10/dist-packages (from pyfolio) (1.23.5)

Requirement already satisfied: pandas>=0.18.1 in /usr/local/lib/python3.10/dist-packages (from pyfolio) (1.5.3)

Requirement already satisfied: pytz>=2014.10 in /usr/local/lib/python3.10/dist-packages (from pyfolio) (2023.4)

Requirement already satisfied: scipy>=0.14.0 in /usr/local/lib/python3.10/dist-packages (from pyfolio) (1.11.4)

Requirement already satisfied: scikit-learn>=0.16.1 in /usr/local/lib/python3.10/dist-packages (from pyfolio) (1.2.2)

Requirement already satisfied: seaborn>=0.7.1 in /usr/local/lib/python3.10/dist-packages (from pyfolio) (0.13.1)

Requirement already satisfied: empyrical>=0.5.0 in /usr/local/lib/python3.10/dist-packages (from pyfolio) (0.5.5)

Requirement already satisfied: pandas-datareader>=0.2 in /usr/local/lib/python3.10/dist-packages (from empyrical>=0.5.0->pyfolio) (0.10.0)

Requirement already satisfied: setuptools>=18.5 in /usr/local/lib/python3.10/dist-packages (from ipython>=3.2.3->pyfolio) (67.7.2)

Requirement already satisfied: jedi>=0.16 in /usr/local/lib/python3.10/dist-packages (from ipython>=3.2.3->pyfolio) (0.19.1)

Requirement already satisfied: decorator in /usr/local/lib/python3.10/dist-packages (from ipython>=3.2.3->pyfolio) (4.4.2)

Requirement already satisfied: pickleshare in /usr/local/lib/python3.10/dist-packages (from ipython>=3.2.3->pyfolio) (0.7.5)

Requirement already satisfied: traitlets>=4.2 in /usr/local/lib/python3.10/dist-packages (from ipython>=3.2.3->pyfolio) (5.7.1)

Requirement already satisfied: prompt-toolkit!=3.0.0,!3.0.1,<3.1.0,>=2.0.0 in /usr/local/lib/python3.10/dist-packages (from ipython>=3.2.3->pyfolio) (3.0.43)

Requirement already satisfied: pygments in /usr/local/lib/python3.10/dist-packages (from ipython>=3.2.3->pyfolio) (2.16.1)

Requirement already satisfied: backcall in /usr/local/lib/python3.10/dist-packages (from ipython>=3.2.3->pyfolio) (0.2.0)

Requirement already satisfied: matplotlib-inline in /usr/local/lib/python3.10/dist-packages (from ipython>=3.2.3->pyfolio) (0.1.6)

Requirement already satisfied: pexpect>4.3 in /usr/local/lib/python3.10/dist-packages (from ipython>=3.2.3->pyfolio) (4.9.0)

Requirement already satisfied: contourpy>=1.0.1 in /usr/local/lib/python3.10/dist-packages (from matplotlib>=1.4.0->pyfolio) (1.2.0)

Requirement already satisfied: cycycler>=0.10 in /usr/local/lib/python3.10/dist-packages (from matplotlib>=1.4.0->pyfolio) (0.12.1)

Requirement already satisfied: fonttools>=4.22.0 in /usr/local/lib/python3.10/dist-packages (from matplotlib>=1.4.0->pyfolio) (4.48.1)

Requirement already satisfied: kiwisolver>=1.0.1 in /usr/local/lib/python3.10/dist-packages (from matplotlib>=1.4.0->pyfolio) (1.4.5)

Requirement already satisfied: packaging>=20.0 in /usr/local/lib/python3.10/dist-packages (from matplotlib>=1.4.0->pyfolio) (23.2)

Requirement already satisfied: pillow>=6.2.0 in /usr/local/lib/python3.10/dist-packages (from matplotlib>=1.4.0->pyfolio) (9.4.0)

Requirement already satisfied: pyparsing>=2.3.1 in /usr/local/lib/python3.10/dist-packages (from matplotlib>=1.4.0->pyfolio) (3.1.1)

Requirement already satisfied: python-dateutil>=2.7 in /usr/local/lib/python3.10/dist-packages (from matplotlib>=1.4.0->pyfolio) (2.8.2)

Requirement already satisfied: joblib>=1.1.1 in /usr/local/lib/python3.10/dist-packages (from scikit-learn>=0.16.1->pyfolio) (1.3.2)

Requirement already satisfied: threadpoolctl>=2.0.0 in /usr/local/lib/python3.10/dist-packages (from scikit-learn>=0.16.1->pyfolio) (3.2.0)

Requirement already satisfied: parso<0.9.0,>=0.8.3 in /usr/local/lib/python3.10/dist-packages (from jedi>=0.16->ipython>=3.2.3->pyfolio) (0.8.3)

Requirement already satisfied: lxml in /usr/local/lib/python3.10/dist-packages (from pandas-datareader>=0.2->empyirical>=0.5.0->pyfolio) (4.9.4)

Requirement already satisfied: requests>=2.19.0 in /usr/local/lib/python3.10/dist-packages (from pandas-datareader>=0.2->empyirical>=0.5.0->pyfolio) (2.31.0)

Requirement already satisfied: ptyprocess>=0.5 in /usr/local/lib/python3.10/dist-packages (from pexpect>4.3->ipython>=3.2.3->pyfolio) (0.7.0)

Requirement already satisfied: wcwidth in /usr/local/lib/python3.10/dist-packages (from prompt-toolkit!=3.0.0,!3.0.1,<3.1.0,>=2.0.0->ipython>=3.2.3->pyfolio) (0.2.13)

Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.10/dist-packages (from python-dateutil>=2.7->matplotlib>=1.4.0->pyfolio) (1.16.0)

Requirement already satisfied: charset-normalizer<4,>=2 in /usr/local/lib/python3.10/dist-packages (from requests>=2.19.0->pandas-datareader>=0.2->empyirical>=0.5.0->pyfolio) (3.3.2)

Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.10/dist-packages (from requests>=2.19.0->pandas-datareader>=0.2->empyirical>=0.5.0->pyfolio) (3.6)

Requirement already satisfied: urllib3<3,>=1.21.1 in /usr/local/lib/python3.10/dist-packages (from requests>=2.19.0->pandas-datareader>=0.2->empyirical>=0.5.0->pyfolio) (2.0.7)

Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.10/dist-packages (from requests>=2.19.0->pandas-datareader>=0.2->empyirical>=0.5.0->pyfolio) (2024.2.2)

Special Eyes-Only Report on

Individual Portfolio Analysis and Further Suggestions

Report written by **Markov Markowitz Company**

Report issued on **27.08.2023**

Any comments should be sent to: info@markovmarkowitz.com

Step 1: Analysis of present portfolio

Dear Customer,

Per your request, we analysed your present portfolio, as of **27.08.2023** as follows:

	Symbol	Current Price	Date	Time	Change	Open	High	Low	Volume	Trade Date	Purchase Price	Quantity	Commission	PnL
Symbol														
IPEKE.IS	IPEKE.IS	39.02	2024/02/09	17:09 TRT	0.820000	38.40	39.44	38.34	8593095	20231226	29.82	623.0		NaN
GUBRF.IS	GUBRF.IS	163.60	2024/02/09	17:09 TRT	5.600006	161.40	170.20	161.40	32624059	20231226	172.60	232.0		NaN
AKFGY.IS	AKFGY.IS	2.32	2024/02/09	17:09 TRT	0.010000	2.32	2.34	2.28	122356431	20231226	1.75	21828.0		NaN
KOZAL.IS	KOZAL.IS	22.14	2024/02/09	17:09 TRT	0.920000	21.36	22.44	21.34	198577157	20231226	18.99	8588.0		NaN
AHGAZ.IS	AHGAZ.IS	13.51	2024/02/09	17:09 TRT	0.200000	13.34	13.70	13.26	14325825	20231226	9.62	48279.0		NaN
TUKAS.IS	TUKAS.IS	8.84	2024/02/09	17:09 TRT	0.090000	8.75	9.04	8.71	27887920	20231226	6.30	42190.0		0.0

1328252.8299999998

```
<ipython-input-292-ed49d056d309>:4: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

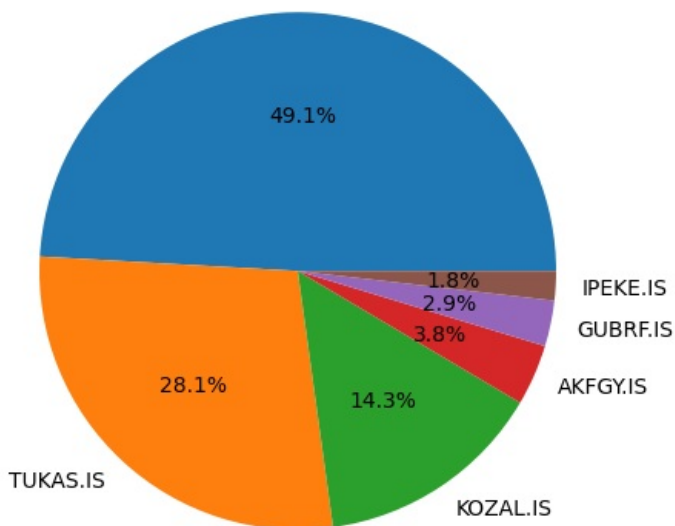
See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy
MYPF['Purchase Amount'] = np.trunc(MYPF['End PF %']*CURRENT_T2/100)
<ipython-input-292-ed49d056d309>:5: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy
MYPF['End Quantity'] = np.trunc(MYPF['Purchase Amount'] / MYPF['Current Price'])
<ipython-input-292-ed49d056d309>:7: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame

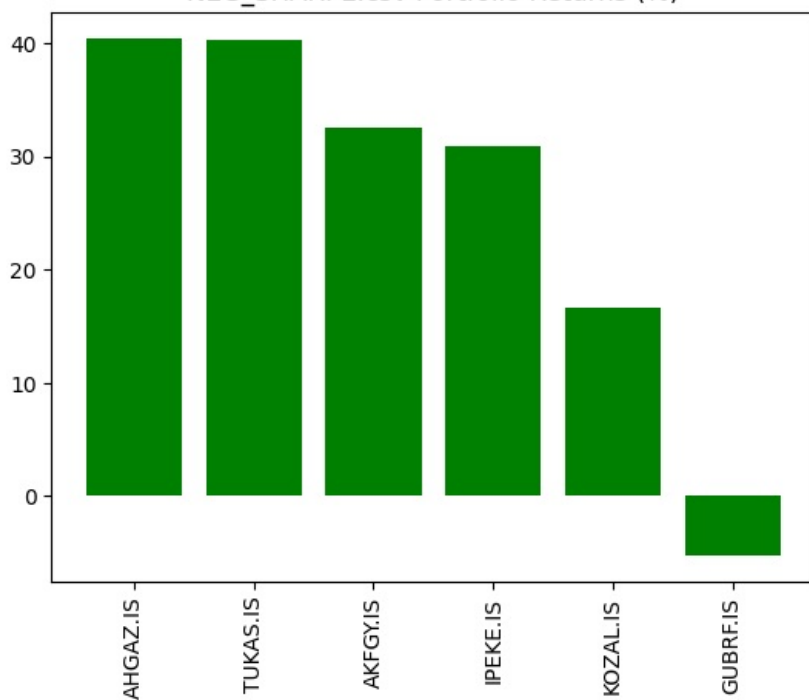
See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy
MYPF.dropna(inplace=True)
```

	Quantity	Purchase Price	Purchased Value	Current Price	Market Value	Start PF %	End PF %	PnL %	Purchase Amount	End Quantity
Symbol										
AHGAZ.IS	48279.0	9.62	464443.98	13.51	652249.29	46.90656	49.10581	40.436590	652249.0	48278.0
TUKAS.IS	42190.0	6.30	265797.00	8.84	372959.60	26.84419	28.07896	40.317460	372959.0	42189.0
KOZAL.IS	8588.0	18.99	163086.12	22.14	190138.32	16.47090	14.31492	16.587678	190138.0	8587.0
GUBRF.IS	232.0	172.60	40043.20	163.60	37955.20	4.04417	2.85753	-5.214368	37955.0	231.0
AKFGY.IS	21828.0	1.75	38199.00	2.32	50640.96	3.85791	3.81260	32.571429	50640.0	21827.0
IPEKE.IS	623.0	29.82	18577.86	39.02	24309.46	1.87627	1.83018	30.851777	24309.0	622.0

NEG_SHARPE.csv Portfolio
AHGAZ.IS



NEG_SHARPE.csv Portfolio Returns (%)



Symbol	Quantity	Purchase Price	Purchased Value	Current Price	Market Value	Start PF %	End PF %	PnL %	Purchase Amount	End Quantity
AHGAZ.IS	48279.0	9.62	464443.98	13.51	652249.29	46.90656	49.10581	40.436590	652249.0	48278.0
TUKAS.IS	42190.0	6.30	265797.00	8.84	372959.60	26.84419	28.07896	40.317460	372959.0	42189.0
KOZAL.IS	8588.0	18.99	163086.12	22.14	190138.32	16.47090	14.31492	16.587678	190138.0	8587.0
AKFGY.IS	21828.0	1.75	38199.00	2.32	50640.96	3.85791	3.81260	32.571429	50640.0	21827.0
GUBRF.IS	232.0	172.60	40043.20	163.60	37955.20	4.04417	2.85753	-5.214368	37955.0	231.0
IPEKE.IS	623.0	29.82	18577.86	39.02	24309.46	1.87627	1.83018	30.851777	24309.0	622.0

Dear Customer, now starting to analyze your current portfolio performance...

 Starting Download ...

 Downloading AHGAZ.IS
 Downloading TUKAS.IS
 Downloading KOZAL.IS
 Downloading AKFGY.IS
 Downloading GUBRF.IS

```
*****
*****
*****
```

Stock Splits

Date _____

2024-01-16	00:00:00+03:00	7.10	7.21	7.04	7.15	14340047	0.0
2024-01-17	00:00:00+03:00	7.13	7.31	7.11	7.25	14691358	0.0
2024-01-18	00:00:00+03:00	7.28	7.79	7.28	7.41	28027187	0.0
2024-01-19	00:00:00+03:00	7.42	7.52	7.33	7.38	11088326	0.0
2024-01-22	00:00:00+03:00	7.38	7.51	7.32	7.38	10403833	0.0
2024-01-23	00:00:00+03:00	7.48	7.56	7.27	7.31	14133935	0.0
2024-01-24	00:00:00+03:00	7.32	7.48	7.25	7.47	11583644	0.0
2024-01-25	00:00:00+03:00	7.49	7.64	7.47	7.55	12806122	0.0
2024-01-26	00:00:00+03:00	7.55	7.68	7.50	7.66	15597975	0.0
2024-01-29	00:00:00+03:00	7.70	7.86	7.66	7.71	17259990	0.0
2024-01-30	00:00:00+03:00	7.80	7.83	7.63	7.63	13820766	0.0
2024-01-31	00:00:00+03:00	7.63	8.39	7.59	8.39	60425320	0.0
2024-02-01	00:00:00+03:00	8.39	9.03	8.23	8.59	85787413	0.0
2024-02-02	00:00:00+03:00	8.61	8.78	8.40	8.43	29833301	0.0
2024-02-05	00:00:00+03:00	8.42	8.54	8.37	8.52	17218886	0.0
2024-02-06	00:00:00+03:00	8.55	8.79	8.39	8.53	26530320	0.0
2024-02-07	00:00:00+03:00	8.54	8.69	8.42	8.42	21308758	0.0
2024-02-08	00:00:00+03:00	8.42	8.86	8.42	8.75	38149758	0.0
2024-02-09	00:00:00+03:00	8.75	9.04	8.71	8.84	27887920	0.0

Stock Splits

[illegible]

[illegible]

2023-12-27 00:00:00+03:00	29.50	31.04	29.40	30.66	2318975	0.0
2023-12-28 00:00:00+03:00	30.60	31.98	30.60	31.90	1617481	0.0
2023-12-29 00:00:00+03:00	31.90	32.44	31.54	31.92	1942798	0.0
2024-01-02 00:00:00+03:00	32.38	32.90	32.30	32.90	2167449	0.0
2024-01-03 00:00:00+03:00	32.88	34.66	31.70	31.88	2648582	0.0
2024-01-04 00:00:00+03:00	31.86	33.30	31.68	33.20	4012817	0.0
2024-01-05 00:00:00+03:00	33.30	33.40	32.58	33.10	1952404	0.0
2024-01-08 00:00:00+03:00	33.20	33.90	33.14	33.44	2342944	0.0
2024-01-09 00:00:00+03:00	33.58	34.24	32.62	32.62	4913300	0.0
2024-01-10 00:00:00+03:00	32.66	33.02	32.40	32.64	3205280	0.0
2024-01-11 00:00:00+03:00	32.70	33.70	32.68	33.14	4670020	0.0
2024-01-12 00:00:00+03:00	33.10	34.20	32.58	33.86	5300228	0.0
2024-01-15 00:00:00+03:00	34.24	34.78	33.94	34.46	4546751	0.0
2024-01-16 00:00:00+03:00	34.60	34.72	33.98	34.10	3322091	0.0
2024-01-17 00:00:00+03:00	33.98	34.94	33.90	34.38	5429865	0.0
2024-01-18 00:00:00+03:00	34.54	34.66	33.48	33.60	3179052	0.0
2024-01-19 00:00:00+03:00	33.60	34.90	33.26	34.76	5452041	0.0
2024-01-22 00:00:00+03:00	34.74	35.06	34.22	34.24	4712308	0.0
2024-01-23 00:00:00+03:00	34.44	34.66	33.74	33.98	3439594	0.0
2024-01-24 00:00:00+03:00	33.98	35.04	33.56	34.66	7030147	0.0
2024-01-25 00:00:00+03:00	34.98	36.52	34.78	36.14	6765351	0.0
2024-01-26 00:00:00+03:00	36.30	36.64	35.34	36.40	7276485	0.0
2024-01-29 00:00:00+03:00	36.54	37.00	36.18	36.68	4840607	0.0
2024-01-30 00:00:00+03:00	36.76	37.00	36.00	36.14	4755732	0.0
2024-01-31 00:00:00+03:00	36.18	36.70	36.02	36.34	5009773	0.0
2024-02-01 00:00:00+03:00	36.38	37.68	36.34	37.22	6125185	0.0
2024-02-02 00:00:00+03:00	37.50	38.24	35.80	35.86	7173675	0.0
2024-02-05 00:00:00+03:00	36.08	37.26	35.96	36.70	4802385	0.0
2024-02-06 00:00:00+03:00	36.68	37.20	36.34	37.00	4817252	0.0
2024-02-07 00:00:00+03:00	37.30	38.38	37.16	37.52	7374198	0.0
2024-02-08 00:00:00+03:00	37.80	38.20	37.66	38.20	4726054	0.0
2024-02-09 00:00:00+03:00	38.40	39.44	38.34	39.02	8593095	0.0

Stock Splits						
Date						
2023-12-26 00:00:00+03:00						0.0
2023-12-27 00:00:00+03:00						0.0
2023-12-28 00:00:00+03:00						0.0
2023-12-29 00:00:00+03:00						0.0
2024-01-02 00:00:00+03:00						0.0
2024-01-03 00:00:00+03:00						0.0
2024-01-04 00:00:00+03:00						0.0
2024-01-05 00:00:00+03:00						0.0
2024-01-08 00:00:00+03:00						0.0
2024-01-09 00:00:00+03:00						0.0
2024-01-10 00:00:00+03:00						0.0
2024-01-11 00:00:00+03:00						0.0
2024-01-12 00:00:00+03:00						0.0
2024-01-15 00:00:00+03:00						0.0
2024-01-16 00:00:00+03:00						0.0
2024-01-17 00:00:00+03:00						0.0
2024-01-18 00:00:00+03:00						0.0
2024-01-19 00:00:00+03:00						0.0
2024-01-22 00:00:00+03:00						0.0
2024-01-23 00:00:00+03:00						0.0
2024-01-24 00:00:00+03:00						0.0
2024-01-25 00:00:00+03:00						0.0
2024-01-26 00:00:00+03:00						0.0
2024-01-29 00:00:00+03:00						0.0
2024-01-30 00:00:00+03:00						0.0
2024-01-31 00:00:00+03:00						0.0
2024-02-01 00:00:00+03:00						0.0
2024-02-02 00:00:00+03:00						0.0
2024-02-05 00:00:00+03:00						0.0
2024-02-06 00:00:00+03:00						0.0
2024-02-07 00:00:00+03:00						0.0
2024-02-08 00:00:00+03:00						0.0
2024-02-09 00:00:00+03:00						0.0]
Construct Time series...						
=====						

Ordered Table:						

	Date	AHGAZ.IS	TUKAS.IS	KOZAL.IS	AKFGY.IS	\
0	2023-12-26 00:00:00+03:00	9.62	6.30	18.99	1.75	
1	2023-12-27 00:00:00+03:00	8.85	6.40	19.31	1.73	
2	2023-12-28 00:00:00+03:00	9.73	6.63	19.57	1.86	
3	2023-12-29 00:00:00+03:00	10.24	6.83	19.53	1.97	
4	2024-01-02 00:00:00+03:00	10.31	7.10	19.91	1.95	
5	2024-01-03 00:00:00+03:00	9.90	6.76	19.22	1.84	
6	2024-01-04 00:00:00+03:00	10.15	6.84	19.67	1.86	
7	2024-01-05 00:00:00+03:00	10.21	6.94	19.65	1.83	
8	2024-01-08 00:00:00+03:00	10.32	7.11	19.78	1.90	
9	2024-01-09 00:00:00+03:00	10.04	6.94	19.45	1.86	
10	2024-01-10 00:00:00+03:00	10.10	6.94	19.60	1.88	
11	2024-01-11 00:00:00+03:00	10.22	6.93	19.91	1.91	
12	2024-01-12 00:00:00+03:00	10.36	7.15	20.40	1.89	
13	2024-01-15 00:00:00+03:00	10.64	7.09	20.40	1.91	
14	2024-01-16 00:00:00+03:00	10.56	7.15	20.34	1.90	
15	2024-01-17 00:00:00+03:00	10.72	7.25	20.36	1.89	

16	2024-01-18 00:00:00+03:00	11.00	7.41	20.12	1.87
17	2024-01-19 00:00:00+03:00	12.10	7.38	20.20	1.87
18	2024-01-22 00:00:00+03:00	12.18	7.38	20.10	1.91
19	2024-01-23 00:00:00+03:00	12.09	7.31	19.71	1.92
20	2024-01-24 00:00:00+03:00	12.12	7.47	19.93	1.95
21	2024-01-25 00:00:00+03:00	12.29	7.55	20.48	2.04
22	2024-01-26 00:00:00+03:00	12.58	7.66	20.88	2.08
23	2024-01-29 00:00:00+03:00	12.70	7.71	20.94	2.04
24	2024-01-30 00:00:00+03:00	12.79	7.63	20.74	2.02
25	2024-01-31 00:00:00+03:00	12.68	8.39	20.76	2.05
26	2024-02-01 00:00:00+03:00	12.73	8.59	21.20	2.09
27	2024-02-02 00:00:00+03:00	13.30	8.43	21.08	2.16
28	2024-02-05 00:00:00+03:00	13.11	8.52	21.36	2.19
29	2024-02-06 00:00:00+03:00	13.24	8.53	21.24	2.19
30	2024-02-07 00:00:00+03:00	13.31	8.42	21.12	2.24
31	2024-02-08 00:00:00+03:00	13.31	8.75	21.22	2.31
32	2024-02-09 00:00:00+03:00	13.51	8.84	22.14	2.32

	GUBRF.IS	IPEKE.IS
0	172.6	29.82
1	155.4	30.66
2	139.9	31.90
3	153.8	31.92
4	169.1	32.90
5	163.5	31.88
6	161.6	33.20
7	152.8	33.10
8	151.5	33.44
9	149.0	32.62
10	144.1	32.64
11	141.1	33.14
12	145.5	33.86
13	138.9	34.46
14	138.6	34.10
15	135.9	34.38
16	136.2	33.60
17	137.6	34.76
18	141.4	34.24
19	137.7	33.98
20	137.8	34.66
21	139.0	36.14
22	148.0	36.40
23	146.0	36.68
24	145.6	36.14
25	145.6	36.34
26	147.4	37.22
27	144.9	35.86
28	144.3	36.70
29	143.0	37.00
30	143.7	37.52
31	158.0	38.20
32	163.6	39.02

Initial prices:

Symbol	
AHGAZ.IS	9.62
TUKAS.IS	6.3
KOZAL.IS	18.99
AKFGY.IS	1.75
GUBRF.IS	172.6
IPEKE.IS	29.82

Name: InitialPrices, dtype: object

Final prices: Symbol

AHGAZ.IS	13.51
TUKAS.IS	8.84
KOZAL.IS	22.14
AKFGY.IS	2.32
GUBRF.IS	163.6
IPEKE.IS	39.02

Name: FinalPrices, dtype: object

Prices:

```
-----
[[ 9.62  8.85  9.73 10.24 10.31  9.9  10.15 10.21 10.32 10.04
 10.1  10.22 10.36 10.64 10.56 10.72 11.  12.1  12.18 12.09
 12.12 12.29 12.58 12.7  12.79 12.68 12.73 13.3  13.11 13.24
 13.31 13.31 13.51]
 [ 6.3  6.4  6.63  6.83  7.1  6.76  6.84  6.94  7.11  6.94
  6.94  6.93  7.15  7.09  7.15  7.25  7.41  7.38  7.38  7.31
  7.47  7.55  7.66  7.71  7.63  8.39  8.59  8.43  8.52  8.53
  8.42  8.75  8.84]
 [ 18.99 19.31 19.57 19.53 19.91 19.22 19.67 19.65 19.78 19.45
 19.6  19.91 20.4  20.4  20.34 20.36 20.12 20.2  20.1  19.71
 19.93 20.48 20.88 20.94 20.74 20.76 21.2  21.08 21.36 21.24
 21.12 21.22 22.14]
 [ 1.75  1.73  1.86  1.97  1.95  1.84  1.86  1.83  1.9  1.86
  1.88  1.91  1.89  1.91  1.9  1.89  1.87  1.87  1.91  1.92]
```

```

    1.95    2.04    2.08    2.04    2.02    2.05    2.09    2.16    2.19    2.19
    2.24    2.31    2.32]
[172.6 155.4 139.9 153.8 169.1 163.5 161.6 152.8 151.5 149.
 144.1 141.1 145.5 138.9 138.6 135.9 136.2 137.6 141.4 137.7
 137.8 139.  148.  146.  145.6 145.6 147.4 144.9 144.3 143.
 143.7 158.  163.6 ]
[ 29.82 30.66 31.9  31.92 32.9  31.88 33.2  33.1  33.44 32.62
 32.64 33.14 33.86 34.46 34.1  34.38 33.6  34.76 34.24 33.98
 34.66 36.14 36.4  36.68 36.14 36.34 37.22 35.86 36.7  37.
 37.52 38.2  39.02]]
```

FirstPrices:

```
-----
['2023-12-26 00:00:00+03:00' 9.62 6.3 18.99 1.75 172.6]
portfolio['Portfolio_Shares']:
```

```
-----
Symbol
AHGAZ.IS      48279.0
TUKAS.IS      42190.0
KOZAL.IS       8588.0
AKFGY.IS      21828.0
GUBRF.IS       232.0
IPEKE.IS       623.0
Name: Portfolio_Shares, dtype: float64
```

```
prices:
-----
[[ 9.62  6.3  18.99  1.75 172.6  29.82]
 [ 8.85  6.4  19.31  1.73 155.4  30.66]
 [ 9.73  6.63 19.57  1.86 139.9  31.9 ]
 [ 10.24 6.83 19.53  1.97 153.8  31.92]
 [ 10.31 7.1  19.91  1.95 169.1  32.9 ]
 [ 9.9   6.76 19.22  1.84 163.5  31.88]
 [ 10.15 6.84 19.67  1.86 161.6  33.2 ]
 [ 10.21 6.94 19.65  1.83 152.8  33.1 ]
 [ 10.32 7.11 19.78  1.9  151.5  33.44]
 [ 10.04 6.94 19.45  1.86 149.  32.62]
 [ 10.1  6.94 19.6  1.88 144.1  32.64]
 [ 10.22 6.93 19.91  1.91 141.1  33.14]
 [ 10.36 7.15 20.4  1.89 145.5  33.86]
 [ 10.64 7.09 20.4  1.91 138.9  34.46]
 [ 10.56 7.15 20.34  1.9  138.6  34.1 ]
 [ 10.72 7.25 20.36  1.89 135.9  34.38]
 [ 11.   7.41 20.12  1.87 136.2  33.6 ]
 [ 12.1  7.38 20.2  1.87 137.6  34.76]
 [ 12.18 7.38 20.1  1.91 141.4  34.24]
 [ 12.09 7.31 19.71  1.92 137.7  33.98]
 [ 12.12 7.47 19.93  1.95 137.8  34.66]
 [ 12.29 7.55 20.48  2.04 139.  36.14]
 [ 12.58 7.66 20.88  2.08 148.  36.4 ]
 [ 12.7  7.71 20.94  2.04 146.  36.68]
 [ 12.79 7.63 20.74  2.02 145.6  36.14]
 [ 12.68 8.39 20.76  2.05 145.6  36.34]
 [ 12.73 8.59 21.2  2.09 147.4  37.22]
 [ 13.3  8.43 21.08  2.16 144.9  35.86]
 [ 13.11 8.52 21.36  2.19 144.3  36.7 ]
 [ 13.24 8.53 21.24  2.19 143.  37.  ]
 [ 13.31 8.42 21.12  2.24 143.7  37.52]
 [ 13.31 8.75 21.22  2.31 158.  38.2 ]
 [ 13.51 8.84 22.14  2.32 163.6  39.02]]
```

OrderedTable['PF_Value']:

```
-----
0      990147.16
1      956035.85
2     1010472.11
3     1048827.22
4     1070585.07
5     1026184.62
6     1046312.29
7     1050497.53
8     1065535.14
9     1040046.70
10    1043543.86
11    1051848.06
12    1073129.84
13    1083395.72
14    1081037.36
15    1092482.52
16    1109837.02
17    1163412.74
18    1167847.02
19    1156397.19
20    1167587.00
21    1187057.99
22    1212258.10
23    1219513.68
24    1217900.21
25    1245605.12
26    1262074.75
```

27	1281913.50
28	1279981.19
29	1285534.10
30	1284819.93
31	1304870.63
32	1328252.83

Name: PF_Value, dtype: float64

Residue cash: 338105.66999999999

Average return of the current portfolio is 0.7219823530182763 %

Showing Tearsheet of NEG_SHARPE.csv Portfolio...

***** PORTFOLIO TEARSHEET *****

```

/usr/local/lib/python3.10/dist-packages/pyfolio/timeseries.py:724: FutureWarning: The default dtype for empty Series will
be 'object' instead of 'float64' in a future version. Specify a dtype explicitly to silence this warning.
    stats = pd.Series()
/usr/local/lib/python3.10/dist-packages/pyfolio/plotting.py:648: FutureWarning: iteritems is deprecated and will be remov
ed in a future version. Use .items instead.
    for stat, value in perf_stats[column].iteritems():

```

Start date 2023-12-27

End date 2024-02-09

Total months	1
--------------	---

Backtest

Annual return	496.5%
---------------	--------

Cumulative returns	25.5%
--------------------	-------

Annual volatility 23.7%

Sharpe ratio 7.67

Calmar ratio	157.52
--------------	--------

Stability	0.95
-----------	------

Max drawdown	-3.2%
--------------	-------

Omega ratio 3.65

Sortino ratio 14.33

Skew -0.33

Kurtosis 1.27

Tail ratio 1.50

Daily value at risk	-2.3%
---------------------	-------

```

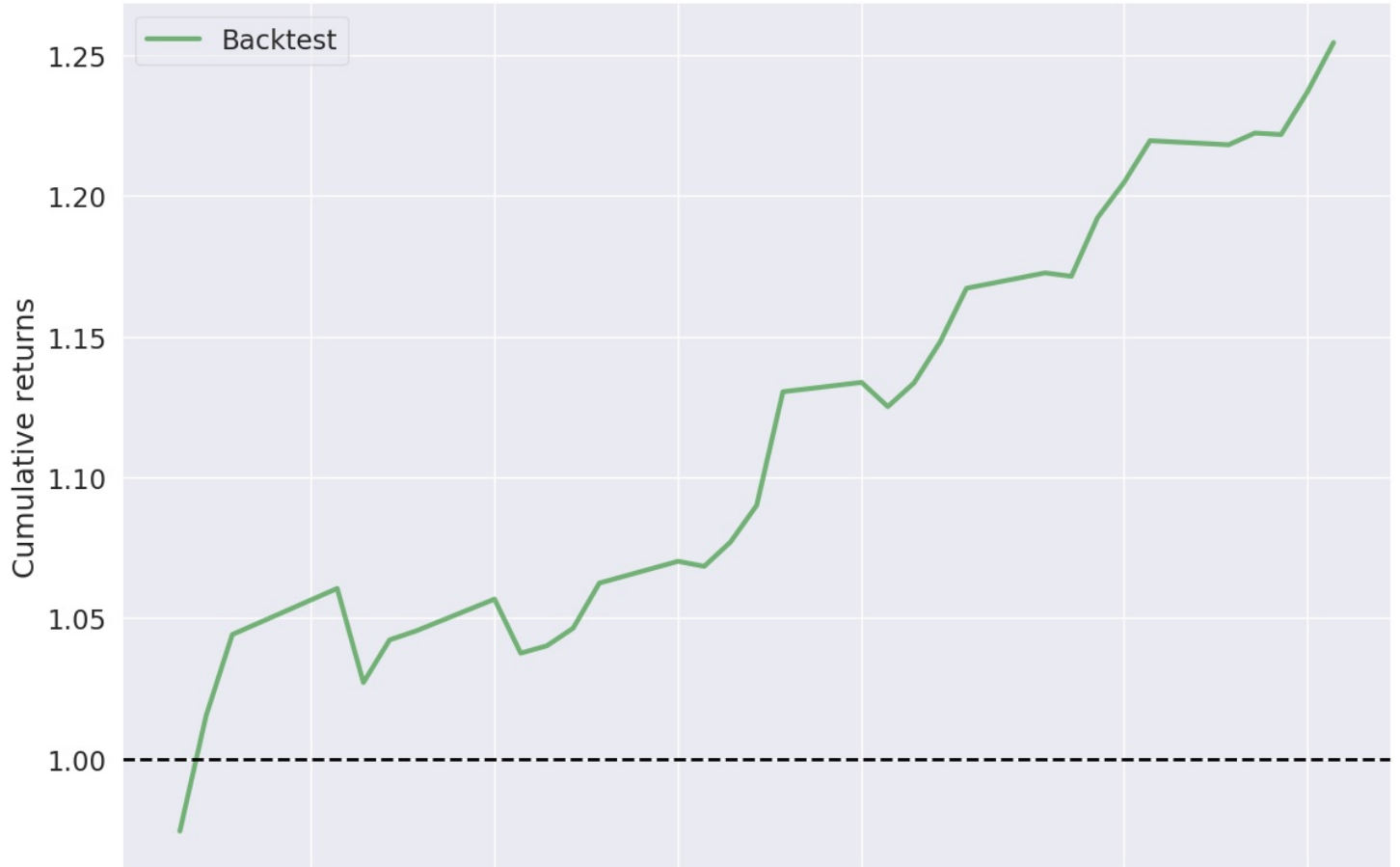
/usr/local/lib/python3.10/dist-packages/pyfolio/plotting.py:805: FutureWarning: The default dtype for empty Series will be 'object' instead of 'float64' in a future version. Specify a dtype explicitly to silence this warning.
    oos_cum_returns = pd.Series([])

```

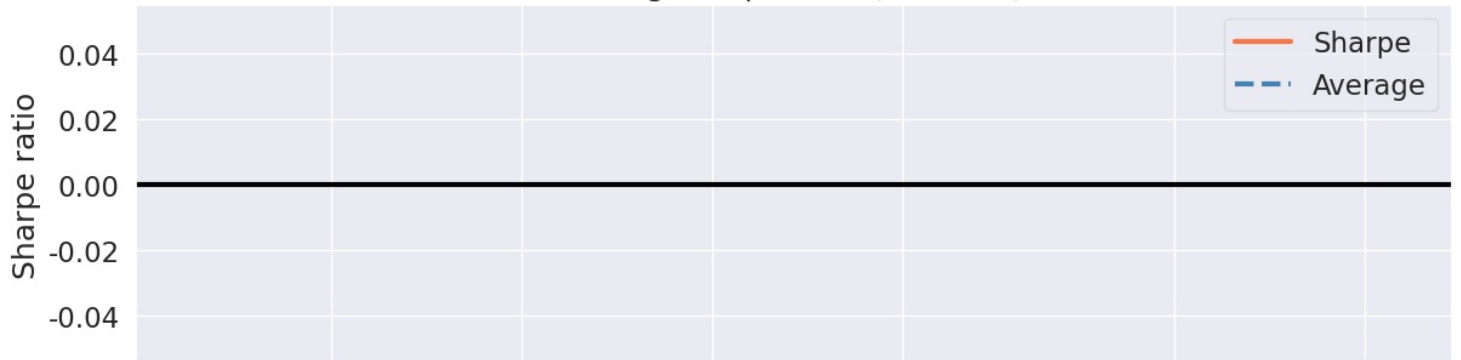
***** end of TEARSHEET *****

Error generating returns tear sheet: 'NoneType' object has no attribute 'savefig'

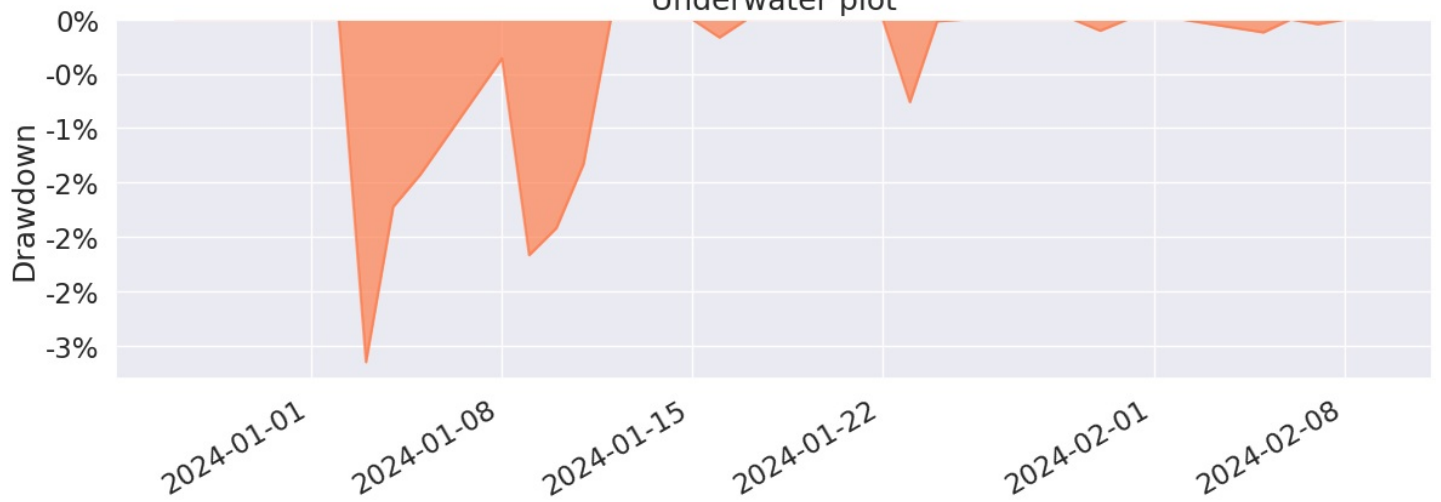
Cumulative returns



Rolling Sharpe ratio (6-month)



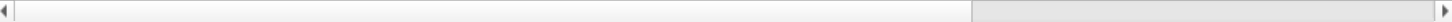
Underwater plot



CURRENT PORTFOLIO PERFORMANCE

```
/usr/local/lib/python3.10/dist-packages/pyfolio/timeseries.py:724: FutureWarning: The default dtype for empty Series will
be 'object' instead of 'float64' in a future version. Specify a dtype explicitly to silence this warning.
stats = pd.Series()
<ipython-input-302-97d2e39f3402>:3: DeprecationWarning: Risk functions in pyfolio.timeseries are deprecated and will be r
emoved in a future release. Please install the empyrical package instead.
max_drawdown = np.abs(100*pf.timeseries.max_drawdown(OrderedTimeSeries['pct_change'].dropna()))
<ipython-input-302-97d2e39f3402>:4: DeprecationWarning: Risk functions in pyfolio.timeseries are deprecated and will be r
emoved in a future release. Please install the empyrical package instead.
annual_return = pf.timeseries.annual_return(OrderedTimeSeries['pct_change'].dropna())
<ipython-input-302-97d2e39f3402>:5: DeprecationWarning: Risk functions in pyfolio.timeseries are deprecated and will be r
emoved in a future release. Please install the empyrical package instead.
sharpe_ratio = pf.timeseries.sharpe_ratio(OrderedTimeSeries['pct_change'].dropna())
Annual return      4.964727
Cumulative returns  0.254549
Annual volatility   0.237354
Sharpe ratio        7.665337
Calmar ratio        157.515631
Stability           0.949693
Max drawdown        -0.031519
Omega ratio         3.646754
Sortino ratio       14.333515
Skew                -0.325063
Kurtosis            1.270442
Tail ratio          1.498946
Daily value at risk -0.022684
dtype: float64
```

	Quantity	Purchase Price	Purchased Value	Current Price	Market Value	Start PF %	End PF %	PnL %	Purchase Amount	End Quantity	Portfolio_Weights	InitialPrices
Symbol												
AHGAZ.IS	48279.0	9.62	464443.98	13.51	652249.29	46.91	49.11	40.44	652249.0	48278.0	0.491058	9.62
TUKAS.IS	42190.0	6.30	265797.0	8.84	372959.60	26.84	28.08	40.32	372959.0	42189.0	0.280790	6.3
KOZAL.IS	8588.0	18.99	163086.12	22.14	190138.32	16.47	14.31	16.59	190138.0	8587.0	0.143149	18.99
AKFGY.IS	21828.0	1.75	38199.0	2.32	50640.96	3.86	3.81	32.57	50640.0	21827.0	0.038126	1.75
GUBRF.IS	232.0	172.60	40043.2	163.60	37955.20	4.04	2.86	-5.21	37955.0	231.0	0.028575	172.6
IPEKE.IS	623.0	29.82	18577.86	39.02	24309.46	1.88	1.83	30.85	24309.0	622.0	0.018302	29.82



```
['AHGAZ.IS',
'TUKAS.IS',
'KOZAL.IS',
'GUBRF.IS',
'AKFGY.IS',
'IPEKE.IS',
'TRY=X']
```

```
*****
Starting Download of filtered 7 BIST30 assets
*****
Downloading AHGAZ.IS
Downloading TUKAS.IS
Downloading KOZAL.IS
Downloading GUBRF.IS
Downloading AKFGY.IS
Downloading IPEKE.IS
Downloading TRY=X
*****
DOWNLOADED 7 TICKERS from BIST30
*****
```

CSV files merged

```
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:518: RuntimeWarning: Mean of empty slice.
avg = a.mean(axis, **keepdims_kw)
/usr/local/lib/python3.10/dist-packages/numpy/core/_methods.py:182: RuntimeWarning: invalid value encountered in divide
ret = um.true_divide(
/usr/local/lib/python3.10/dist-packages/pandas/core/frame.py:10474: RuntimeWarning: Degrees of freedom <= 0 for slice
base_cov = np.cov(mat.T, ddof=ddof)
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:2704: RuntimeWarning: divide by zero encountered in di
vide
c *= np.true_divide(1, fact)
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:2704: RuntimeWarning: invalid value encountered in mul
```

[illegible]

```
{'return': 0.0, 'risk': nan, 'sharpe': nan}  
[0.1192 0.008 0.1801 0.0298 0.0341 0.0337 0.5953]
```

```
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:518: RuntimeWarning: Mean of empty slice.  
    avg = a.mean(axis, **keepdims_kw)  
/usr/local/lib/python3.10/dist-packages/numpy/core/_methods.py:182: RuntimeWarning: invalid value encountered in divide  
    ret = um.true_divide(  
/usr/local/lib/python3.10/dist-packages/pandas/core/frame.py:10474: RuntimeWarning: Degrees of freedom <= 0 for slice  
    base_cov = np.cov(mat.T, ddof=ddof)  
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:2704: RuntimeWarning: divide by zero encountered in di  
vide  
    c *= np.true_divide(1, fact)  
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:2704: RuntimeWarning: invalid value encountered in mul  
tiply  
    c *= np.true_divide(1, fact)  
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:518: RuntimeWarning: Mean of empty slice.  
    avg = a.mean(axis, **keepdims_kw)  
/usr/local/lib/python3.10/dist-packages/numpy/core/_methods.py:182: RuntimeWarning: invalid value encountered in divide  
    ret = um.true_divide(  
/usr/local/lib/python3.10/dist-packages/pandas/core/frame.py:10474: RuntimeWarning: Degrees of freedom <= 0 for slice  
    base_cov = np.cov(mat.T, ddof=ddof)  
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:2704: RuntimeWarning: divide by zero encountered in di  
vide  
    c *= np.true_divide(1, fact)  
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:2704: RuntimeWarning: invalid value encountered in mul  
tiply  
    c *= np.true_divide(1, fact)  
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:518: RuntimeWarning: Mean of empty slice.  
    avg = a.mean(axis, **keepdims_kw)  
/usr/local/lib/python3.10/dist-packages/numpy/core/_methods.py:182: RuntimeWarning: invalid value encountered in divide  
    ret = um.true_divide(  
/usr/local/lib/python3.10/dist-packages/pandas/core/frame.py:10474: RuntimeWarning: Degrees of freedom <= 0 for slice  
    base_cov = np.cov(mat.T, ddof=ddof)  
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:2704: RuntimeWarning: divide by zero encountered in di  
vide  
    c *= np.true_divide(1, fact)  
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:2704: RuntimeWarning: invalid value encountered in mul  
tiply  
    c *= np.true_divide(1, fact)  
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:518: RuntimeWarning: Mean of empty slice.  
    avg = a.mean(axis, **keepdims_kw)  
/usr/local/lib/python3.10/dist-packages/numpy/core/_methods.py:182: RuntimeWarning: invalid value encountered in divide  
    ret = um.true_divide(  
/usr/local/lib/python3.10/dist-packages/pandas/core/frame.py:10474: RuntimeWarning: Degrees of freedom <= 0 for slice  
    base_cov = np.cov(mat.T, ddof=ddof)  
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:2704: RuntimeWarning: divide by zero encountered in di  
vide  
    c *= np.true_divide(1, fact)  
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:2704: RuntimeWarning: invalid value encountered in mul  
tiply  
    c *= np.true_divide(1, fact)  
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:518: RuntimeWarning: Mean of empty slice.  
    avg = a.mean(axis, **keepdims_kw)  
/usr/local/lib/python3.10/dist-packages/numpy/core/_methods.py:182: RuntimeWarning: invalid value encountered in divide  
    ret = um.true_divide(  
/usr/local/lib/python3.10/dist-packages/pandas/core/frame.py:10474: RuntimeWarning: Degrees of freedom <= 0 for slice  
    base_cov = np.cov(mat.T, ddof=ddof)  
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:2704: RuntimeWarning: divide by zero encountered in di  
vide  
    c *= np.true_divide(1, fact)  
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:2704: RuntimeWarning: invalid value encountered in mul  
tiply  
    c *= np.true_divide(1, fact)  
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:518: RuntimeWarning: Mean of empty slice.  
    avg = a.mean(axis, **keepdims_kw)
```


[illegible]

```

vide
    c *= np.true_divide(1, fact)
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:2704: RuntimeWarning: invalid value encountered in multiply
    c *= np.true_divide(1, fact)
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:518: RuntimeWarning: Mean of empty slice.
    avg = a.mean(axis, **keepdims_kw)
/usr/local/lib/python3.10/dist-packages/numpy/core/_methods.py:182: RuntimeWarning: invalid value encountered in divide
    ret = um.true_divide(
/usr/local/lib/python3.10/dist-packages/pandas/core/frame.py:10474: RuntimeWarning: Degrees of freedom <= 0 for slice
    base_cov = np.cov(mat.T, ddof=ddof)
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:2704: RuntimeWarning: divide by zero encountered in divide
    c *= np.true_divide(1, fact)
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:2704: RuntimeWarning: invalid value encountered in multiply
    c *= np.true_divide(1, fact)
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:518: RuntimeWarning: Mean of empty slice.
    avg = a.mean(axis, **keepdims_kw)
/usr/local/lib/python3.10/dist-packages/numpy/core/_methods.py:182: RuntimeWarning: invalid value encountered in divide
    ret = um.true_divide(
/usr/local/lib/python3.10/dist-packages/pandas/core/frame.py:10474: RuntimeWarning: Degrees of freedom <= 0 for slice
    base_cov = np.cov(mat.T, ddof=ddof)
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:2704: RuntimeWarning: divide by zero encountered in divide
    c *= np.true_divide(1, fact)
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:2704: RuntimeWarning: invalid value encountered in multiply
    c *= np.true_divide(1, fact)
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:518: RuntimeWarning: Mean of empty slice.
    avg = a.mean(axis, **keepdims_kw)
/usr/local/lib/python3.10/dist-packages/numpy/core/_methods.py:182: RuntimeWarning: invalid value encountered in divide
    ret = um.true_divide(
/usr/local/lib/python3.10/dist-packages/pandas/core/frame.py:10474: RuntimeWarning: Degrees of freedom <= 0 for slice
    base_cov = np.cov(mat.T, ddof=ddof)
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:2704: RuntimeWarning: divide by zero encountered in divide
    c *= np.true_divide(1, fact)
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:2704: RuntimeWarning: invalid value encountered in multiply
    c *= np.true_divide(1, fact)
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:518: RuntimeWarning: Mean of empty slice.
    avg = a.mean(axis, **keepdims_kw)
/usr/local/lib/python3.10/dist-packages/numpy/core/_methods.py:182: RuntimeWarning: invalid value encountered in divide
    ret = um.true_divide(
/usr/local/lib/python3.10/dist-packages/pandas/core/frame.py:10474: RuntimeWarning: Degrees of freedom <= 0 for slice
    base_cov = np.cov(mat.T, ddof=ddof)
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:2704: RuntimeWarning: divide by zero encountered in divide
    c *= np.true_divide(1, fact)
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:2704: RuntimeWarning: invalid value encountered in multiply
    c *= np.true_divide(1, fact)
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:518: RuntimeWarning: Mean of empty slice.
    avg = a.mean(axis, **keepdims_kw)
/usr/local/lib/python3.10/dist-packages/numpy/core/_methods.py:182: RuntimeWarning: invalid value encountered in divide
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/usr/local/lib/python3.10/dist-packages/pandas/core/frame.py:10474: RuntimeWarning: Degrees of freedom <= 0 for slice
    base_cov = np.cov(mat.T, ddof=ddof)
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:2704: RuntimeWarning: divide by zero encountered in divide
    c *= np.true_divide(1, fact)
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:2704: RuntimeWarning: invalid value encountered in multiply
    c *= np.true_divide(1, fact)

```

```

% weights of BEST PF
{'return': 0.0, 'risk': nan, 'sharpe': nan}
TRY=X          790708.91
KOZAL.IS       239218.33
AHGAZ.IS       158327.74
AKFGY.IS       45293.42
IPEKE.IS       44762.12
GUBRF.IS       39581.93
Name: Amount in 1328252.8299999998 TL, dtype: float64

```

```
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:518: RuntimeWarning: Mean of empty slice.
    avg = a.mean(axis, **keepdims_kw)
/usr/local/lib/python3.10/dist-packages/numpy/core/_methods.py:182: RuntimeWarning: invalid value encountered in divide
    ret = um.true_divide(
/usr/local/lib/python3.10/dist-packages/pandas/core/frame.py:10474: RuntimeWarning: Degrees of freedom <= 0 for slice
    base_cov = np.cov(mat.T, ddof=ddof)
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:2704: RuntimeWarning: divide by zero encountered in di
vide
    c *= np.true_divide(1, fact)
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:2704: RuntimeWarning: invalid value encountered in mul
tiply
    c *= np.true_divide(1, fact)
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:518: RuntimeWarning: Mean of empty slice.
    avg = a.mean(axis, **keepdims_kw)
/usr/local/lib/python3.10/dist-packages/numpy/core/_methods.py:182: RuntimeWarning: invalid value encountered in divide
    ret = um.true_divide(
/usr/local/lib/python3.10/dist-packages/pandas/core/frame.py:10474: RuntimeWarning: Degrees of freedom <= 0 for slice
    base_cov = np.cov(mat.T, ddof=ddof)
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:2704: RuntimeWarning: divide by zero encountered in di
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    c *= np.true_divide(1, fact)
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:2704: RuntimeWarning: invalid value encountered in mul
tiply
    c *= np.true_divide(1, fact)
```

```
making operation with Best_PF_For_bist30.csv
% weights of BEST PF
{'return': 0.0, 'risk': nan, 'sharpe': nan}
assets
ASELS.IS      648984.33
AKBNK.IS      404851.46
TCELL.IS      212520.45
YKBNK.IS       36526.95
FROTO.IS      17931.41
Name: Amount in 1328252.8299999998 TL, dtype: float64
```

```
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:518: RuntimeWarning: Mean of empty slice.
    avg = a.mean(axis, **keepdims_kw)
/usr/local/lib/python3.10/dist-packages/numpy/core/_methods.py:182: RuntimeWarning: invalid value encountered in divide
    ret = um.true_divide(
/usr/local/lib/python3.10/dist-packages/pandas/core/frame.py:10474: RuntimeWarning: Degrees of freedom <= 0 for slice
    base_cov = np.cov(mat.T, ddof=ddof)
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:2704: RuntimeWarning: divide by zero encountered in di
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    c *= np.true_divide(1, fact)
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:2704: RuntimeWarning: invalid value encountered in mul
tiply
    c *= np.true_divide(1, fact)
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:518: RuntimeWarning: Mean of empty slice.
    avg = a.mean(axis, **keepdims_kw)
/usr/local/lib/python3.10/dist-packages/numpy/core/_methods.py:182: RuntimeWarning: invalid value encountered in divide
    ret = um.true_divide(
/usr/local/lib/python3.10/dist-packages/pandas/core/frame.py:10474: RuntimeWarning: Degrees of freedom <= 0 for slice
    base_cov = np.cov(mat.T, ddof=ddof)
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:2704: RuntimeWarning: divide by zero encountered in di
vide
    c *= np.true_divide(1, fact)
/usr/local/lib/python3.10/dist-packages/numpy/lib/function_base.py:2704: RuntimeWarning: invalid value encountered in mul
tiply
    c *= np.true_divide(1, fact)
```

Unnamed: 0	assets	%	Amount	buy_price	shares_to_buy	Portfolio_Weights	InitialPrices	FinalPrices	Portfolio_Amounts	Port
0	16 ASELS.IS	49.51	49510.0	44.18	1120.0	0.4951	41.44	44.18	49510.0	
1	6 AKBNK.IS	26.49	26490.0	38.04	696.0	0.2649	30.62	38.04	26490.0	
2	11 TCELL.IS	18.92	18920.0	53.00	356.0	0.1892	57.94	53.00	18920.0	
3	2 YKBNK.IS	2.42	2420.0	20.06	120.0	0.0242	16.27	20.06	2420.0	
4	21 FROTO.IS	1.87	1870.0	728.00	2.0	0.0187	858.71	728.00	1870.0	
5	4 BIMAS.IS	0.79	790.0	301.00	2.0	0.0079	267.35	301.00	790.0	

```
assets
ASELS.IS      48.86
AKBNK.IS      30.48
TCELL.IS      16.00
YKBNK.IS       2.75
FROTO.IS       1.35
Name: %, dtype: float64
```

% Amount in 1328252.8299999998 TL

assets		
ASELS.IS	48.86	648984.33
AKBNK.IS	30.48	404851.46
TCELL.IS	16.00	212520.45
YKBNK.IS	2.75	36526.95
FROTO.IS	1.35	17931.41

{'AHGAZ': -652249.31, 'TUKAS': -372959.58, 'KOZAL': -190138.33, 'GUBRF': -37955.22, 'AKFGY': -50640.97, 'IPEKE': -24309.42, 'ASELS': 648984.33, 'AKBNK': 404851.46, 'TCELL': 212520.45, 'YKBNK': 36526.95, 'FROTO': 17931.41}

Shopping List for persistent Markowitz portfolio, as for tomorrow:

```
-----
          Buy/Sell
AHGAZ -652249.31
TUKAS -372959.58
KOZAL -190138.33
GUBRF -37955.22
AKFGY -50640.97
IPEKE -24309.42
ASELS 648984.33
AKBNK 404851.46
TCELL 212520.45
YKBNK 36526.95
FROTO 17931.41
  Unnamed: 0  assets      %  Amount  buy_price  shares_to_buy  \
0           16  ASELS.IS  49.51  49510.0    44.18         1120.0
1            6  AKBNK.IS  26.49  26490.0    38.04          696.0
2           11  TCELL.IS  18.92  18920.0    53.00          356.0
3            2  YKBNK.IS   2.42   2420.0    20.06          120.0
4           21  FROTO.IS   1.87   1870.0   728.00           2.0
5            4  BIMAS.IS   0.79    790.0   301.00           2.0
```

```
Portfolio_Weights  InitialPrices  FinalPrices  Portfolio_Amounts  \
0          0.4951          41.44          44.18          49510.0
1          0.2649          30.62          38.04          26490.0
2          0.1892          57.94          53.00          18920.0
3          0.0242          16.27          20.06          2420.0
4          0.0187          858.71          728.00          1870.0
5          0.0079          267.35          301.00           790.0
```

```
Portfolio_Shares  Purchased Value  Market Value  PnL %  Start PF %  \
0           1194          49479.36          52750.92    6.61         49.72
1            865          26486.30          32904.60   24.23         26.62
2            326          18888.44          17278.00   -8.53         18.98
3            148          2407.96          2968.88   23.29          2.42
4             2          1717.42          1456.00  -15.22          1.73
5             2           534.70           602.00   12.59          0.54
```

```
End PF %  Final_Cost  Rebalance Buy Price  Rebalance Shares
0         48.86      48860.0             44.18          1120.0
1         30.48      30480.0             38.04           696.0
2         16.00      16000.0             53.00           356.0
3          2.75       2750.0             20.06           120.0
4          1.35       1350.0             728.00            2.0
5          0.56         560.0            301.00            2.0
```

Requirement already satisfied: nbconvert in /usr/local/lib/python3.10/dist-packages (6.5.4)
Requirement already satisfied: lxml in /usr/local/lib/python3.10/dist-packages (from nbconvert) (4.9.4)
Requirement already satisfied: beautifulsoup4 in /usr/local/lib/python3.10/dist-packages (from nbconvert) (4.12.3)
Requirement already satisfied: bleach in /usr/local/lib/python3.10/dist-packages (from nbconvert) (6.1.0)
Requirement already satisfied: defusedxml in /usr/local/lib/python3.10/dist-packages (from nbconvert) (0.7.1)
Requirement already satisfied: entrypoints>=0.2.2 in /usr/local/lib/python3.10/dist-packages (from nbconvert) (0.4)
Requirement already satisfied: Jinja2>=3.0 in /usr/local/lib/python3.10/dist-packages (from nbconvert) (3.1.3)
Requirement already satisfied: jupyter-core>=4.7 in /usr/local/lib/python3.10/dist-packages (from nbconvert) (5.7.1)
Requirement already satisfied: jupyterlab-pygments in /usr/local/lib/python3.10/dist-packages (from nbconvert) (0.3.0)
Requirement already satisfied: MarkupSafe>=2.0 in /usr/local/lib/python3.10/dist-packages (from nbconvert) (2.1.5)
Requirement already satisfied: mistune<2,>=0.8.1 in /usr/local/lib/python3.10/dist-packages (from nbconvert) (0.8.4)
Requirement already satisfied: nbclient>=0.5.0 in /usr/local/lib/python3.10/dist-packages (from nbconvert) (0.9.0)
Requirement already satisfied: nbformat>=5.1 in /usr/local/lib/python3.10/dist-packages (from nbconvert) (5.9.2)
Requirement already satisfied: packaging in /usr/local/lib/python3.10/dist-packages (from nbconvert) (23.2)
Requirement already satisfied: pandocfilters>=1.4.1 in /usr/local/lib/python3.10/dist-packages (from nbconvert) (1.5.1)
Requirement already satisfied: pygments>=2.4.1 in /usr/local/lib/python3.10/dist-packages (from nbconvert) (2.16.1)
Requirement already satisfied: tinycss2 in /usr/local/lib/python3.10/dist-packages (from nbconvert) (1.2.1)
Requirement already satisfied: traitlets>=5.0 in /usr/local/lib/python3.10/dist-packages (from nbconvert) (5.7.1)
Requirement already satisfied: platformdirs>=2.5 in /usr/local/lib/python3.10/dist-packages (from jupyter-core>=4.7->nbconvert) (4.2.0)
Requirement already satisfied: jupyter-client>=6.1.12 in /usr/local/lib/python3.10/dist-packages (from nbclient>=0.5.0->nbconvert) (6.1.12)
Requirement already satisfied: fastjsonschema in /usr/local/lib/python3.10/dist-packages (from nbformat>=5.1->nbconvert) (2.19.1)
Requirement already satisfied: jsonschema>=2.6 in /usr/local/lib/python3.10/dist-packages (from nbformat>=5.1->nbconvert) (4.19.2)
Requirement already satisfied: soupsieve>1.2 in /usr/local/lib/python3.10/dist-packages (from beautifulsoup4->nbconvert) (2.5)
Requirement already satisfied: six>=1.9.0 in /usr/local/lib/python3.10/dist-packages (from bleach->nbconvert) (1.16.0)
Requirement already satisfied: webencodings in /usr/local/lib/python3.10/dist-packages (from bleach->nbconvert) (0.5.1)
Requirement already satisfied: attrs>=22.2.0 in /usr/local/lib/python3.10/dist-packages (from jsonschema>=2.6->nbformat>=5.1->nbconvert) (23.2.0)
Requirement already satisfied: jsonschema-specifications>=2023.03.6 in /usr/local/lib/python3.10/dist-packages (from jsonschema>=2.6->nbformat>=5.1->nbconvert) (2023.12.1)
Requirement already satisfied: referencing>=0.28.4 in /usr/local/lib/python3.10/dist-packages (from jsonschema>=2.6->nbformat>=5.1->nbconvert) (0.33.0)
Requirement already satisfied: rpds-py>=0.7.1 in /usr/local/lib/python3.10/dist-packages (from jsonschema>=2.6->nbformat>=5.1->nbconvert) (0.17.1)
Requirement already satisfied: pyzmq>=13 in /usr/local/lib/python3.10/dist-packages (from jupyter-client>=6.1.12->nbclient>=0.5.0->nbconvert) (23.2.1)
Requirement already satisfied: python-dateutil>=2.1 in /usr/local/lib/python3.10/dist-packages (from jupyter-client>=6.1.12->nbclient>=0.5.0->nbconvert) (2.8.2)
Requirement already satisfied: tornado>=4.1 in /usr/local/lib/python3.10/dist-packages (from jupyter-client>=6.1.12->nbclient>=0.5.0->nbconvert) (6.3.2)

--2024-02-11 21:41:37-- https://raw.githubusercontent.com/MarkovMarkowitz/MarkovMarkowitz/main/ON3_AnalyzeAndReplacePortfolio_v10A.ipynb
Resolving raw.githubusercontent.com (raw.githubusercontent.com)... 185.199.110.133, 185.199.108.133, 185.199.109.133, ...
Connecting to raw.githubusercontent.com (raw.githubusercontent.com)|185.199.110.133|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 513448 (501K) [text/plain]
Saving to: 'ON3_AnalyzeAndReplacePortfolio_v10A.ipynb'

ON3_AnalyzeAndRepla 100%[=====] 501.41K --.-KB/s in 0.1s

2024-02-11 21:41:37 (3.58 MB/s) - 'ON3_AnalyzeAndReplacePortfolio_v10A.ipynb' saved [513448/513448]

[NbConvertApp] Converting notebook /content/ON3_AnalyzeAndReplacePortfolio_v10A.ipynb to html
[NbConvertApp] Writing 972244 bytes to /content/ON3_AnalyzeAndReplacePortfolio_v10A.html

Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
xvfb is already the newest version (2:21.1.4-2ubuntu1.7~22.04.8).
0 upgraded, 0 newly installed, 0 to remove and 31 not upgraded.
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
xfonts-scalable is already the newest version (1:1.0.3-1.2ubuntu1).
xfonts-100dpi is already the newest version (1:1.0.4+nmu1.1).
xfonts-75dpi is already the newest version (1:1.0.4+nmu1.1).
xfonts-cyrillic is already the newest version (1:1.0.5).
0 upgraded, 0 newly installed, 0 to remove and 31 not upgraded.

Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
wkhtmltopdf is already the newest version (0.12.6-2).
0 upgraded, 0 newly installed, 0 to remove and 31 not upgraded.

XDG_RUNTIME_DIR not set, defaulting to '/tmp/runtime-root'
Loading page (1/2)
Printing pages (2/2)
Done