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Group

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1 Stats

Ticker	Company	Industry group
CSCO	Cisco	Technology Hardware and Equipment
FDX	FedEx Corporation	Transportation
GOOG	A	B
JPM	JP Morgan	Banks
KO	The Coca-Cola Company	Food, Beverage and Tobacco
NEM	Newmont Mining Corporation	Materials
PFE	Pfizer	Pharmaceuticals, Biotechnology and Life Sciences
PSX	A	B

Table 1: Choice of stocks

	CSCO	FDX	GOOG	JPM	KO	NEM	PFE
CSCO	0.00	0.48	0.47	0.51	0.33	0.09	0.41
FDX	0.48	0.00	0.40	0.54	0.35	0.04	0.39
GOOG	0.47	0.40	0.00	0.42	0.27	0.04	0.36
JPM	0.51	0.54	0.42	0.00	0.30	-0.01	0.47
KO	0.33	0.35	0.27	0.30	0.00	0.11	0.33
NEM	0.09	0.04	0.04	-0.01	0.11	0.00	0.05
PFE	0.41	0.39	0.36	0.47	0.33	0.05	0.00
PSX	0.39	0.41	0.36	0.48	0.26	0.13	0.34

Table 2: Correlation

|	mean	vol	skew	kurt	min	max	AC	SR
CSCO	0.1813	0.2111	0.2831	9.5002	-0.0721	0.0964	-0.0359	0.7638
FDX	0.0372	0.2234	-0.2798	12.9029	-0.1216	0.1183	0.0143	0.0771
GOOG	0.1334	0.2345	0.9570	15.9532	-0.0532	0.1605	0.0367	0.4837
JPM	0.1378	0.2084	-0.0158	6.2173	-0.0695	0.0833	0.0070	0.5651
KO	0.0649	0.1368	-0.7274	7.2764	-0.0603	0.0374	0.0244	0.3283
NEM	0.0867	0.3770	-0.1173	5.8111	-0.1223	0.1131	-0.0455	0.1768
PFE	0.1139	0.1746	0.2767	6.3945	-0.0530	0.0707	0.0396	0.5379
PSX	0.0542	0.2426	-0.3383	5.3801	-0.0790	0.0726	0.0243	0.1411

Table 3: Summary statistics
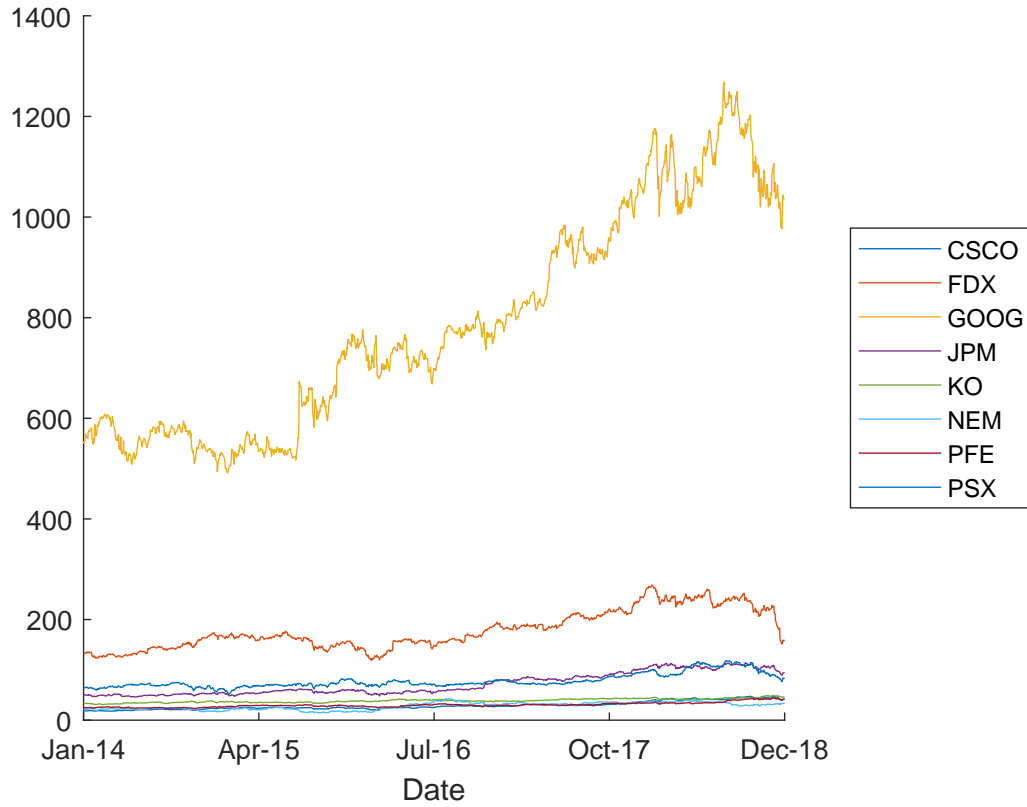
Figure 1: Data
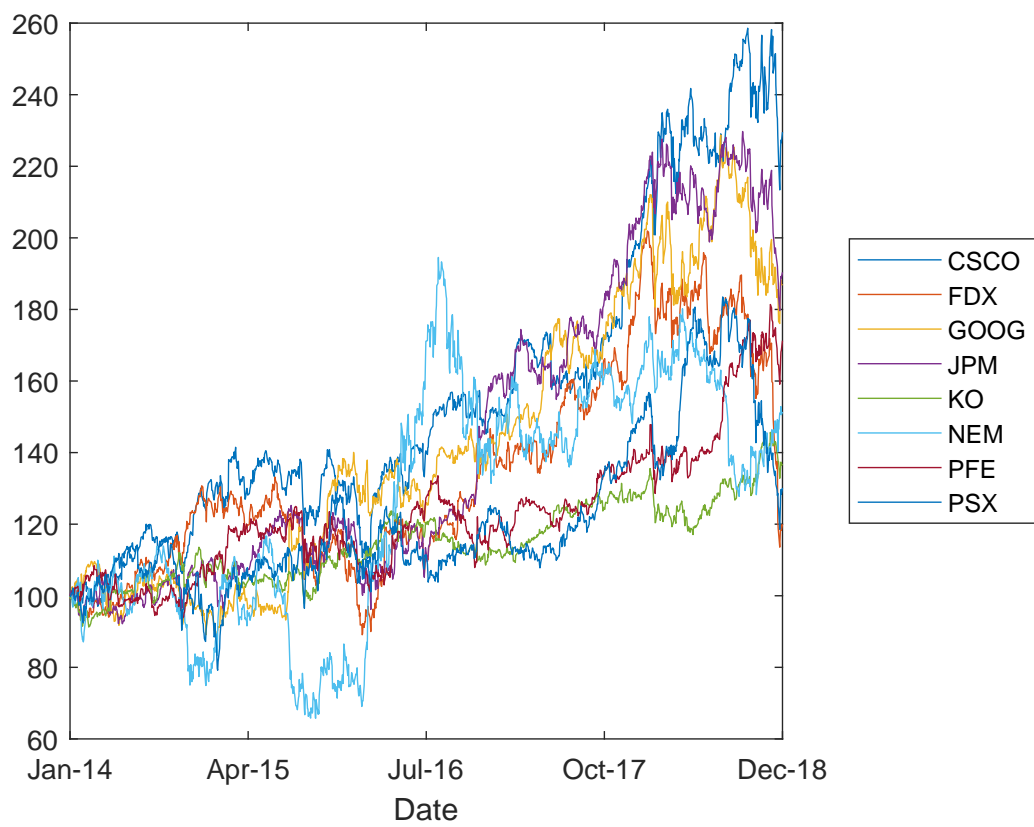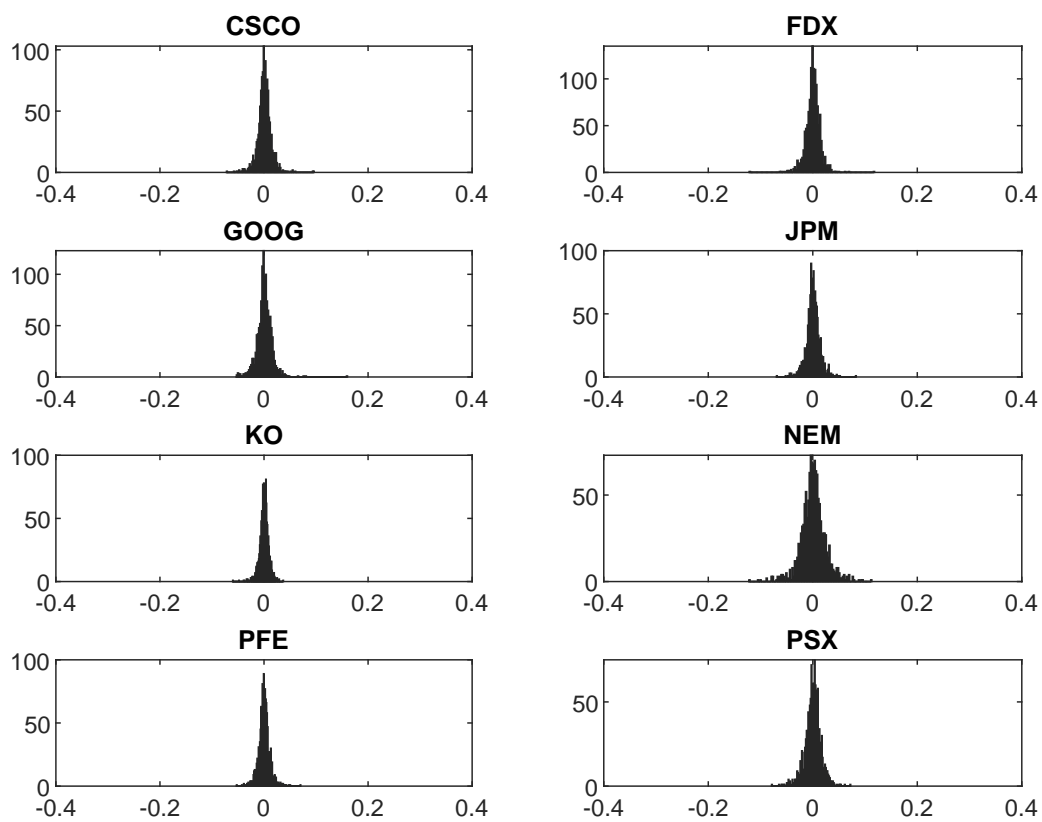
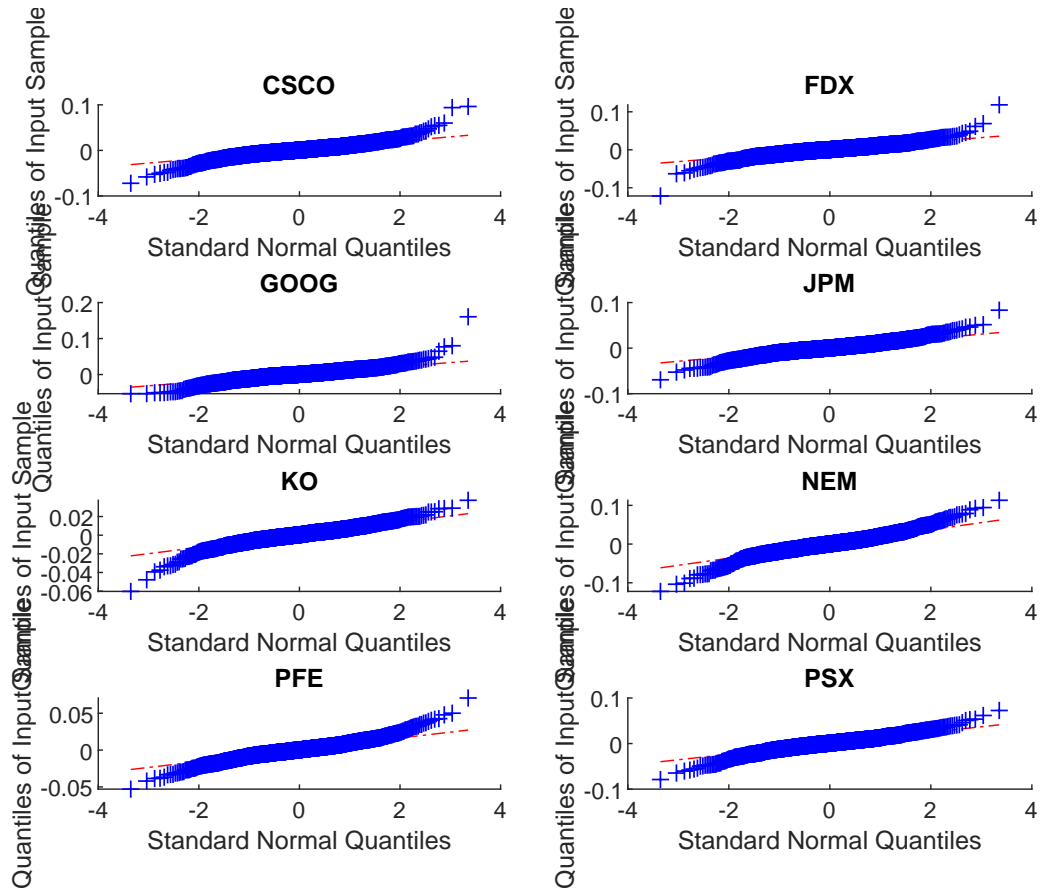Figure 2: Normalised data

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Figure 3: Histograms of returns

Figure 4: QQ plot of returns

2   Portfolios

	GMV	TAN1	NoSS	MAX	EQ1	8 percent	20 percent
CSCO	0.0299	0.6627	0.0301	1.0000	0.1250	0.0800	0.1058
FDX	0.0086	-0.5334	0.0089	0.0000	0.1250	0.0800	0.0815
GOOG	0.0528	0.1667	0.0528	0.0000	0.1250	0.0800	0.1051
JPM	0.0684	0.4304	0.0684	0.0000	0.1250	0.0800	0.1356
KO	0.5364	0.1322	0.5362	0.0000	0.1250	0.4188	0.2000
NEM	0.0655	0.0836	0.0655	0.0000	0.1250	0.0800	0.1074
PFE	0.2072	0.3182	0.2072	0.0000	0.1250	0.1010	0.2000
PSX	0.0312	-0.2605	0.0311	0.0000	0.1250	0.0800	0.0647
Mean	0.0880	0.2197	0.0880	0.1813	0.1012	0.0892	0.1035
StDev	0.1171	0.2007	0.1171	0.2111	0.1378	0.1211	0.1290

Table 4: Portfolio weights
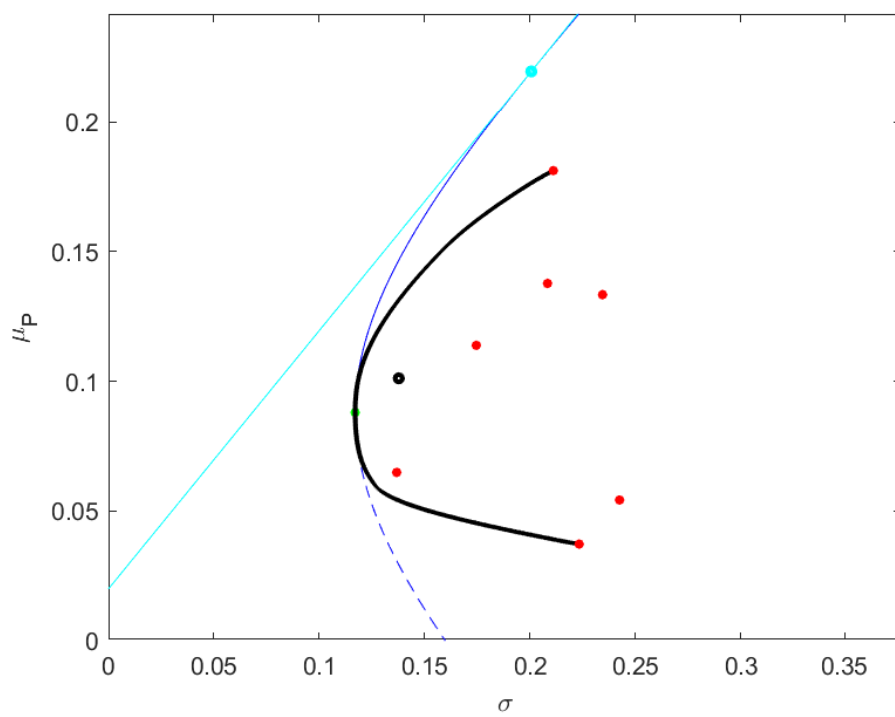
Figure 5: Efficient frontier
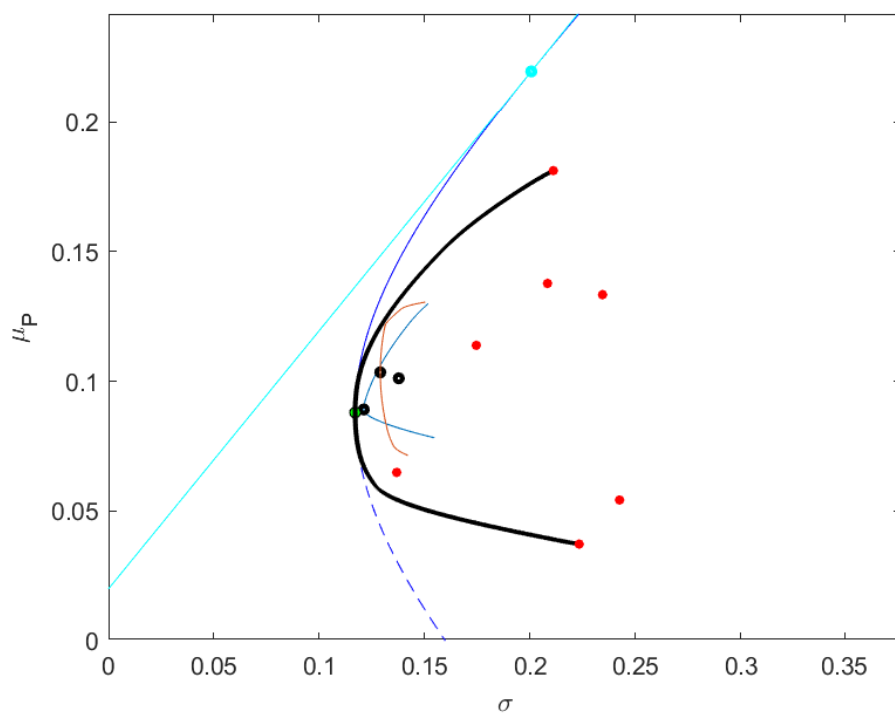
Figure 6: Efficient frontier with restrictions

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3 Results

|	mean	vol	skew	kurt	min	max	AC	SR
GMV	0.1699	0.1307	-0.4709	7.9180	-0.0442	0.0352	-0.0799	1.1474
TAN1	0.2257	0.2134	0.5378	5.9883	-0.0415	0.0685	0.0141	0.9639
NoSS	0.1699	0.1307	-0.4704	7.9120	-0.0442	0.0352	-0.0798	1.1469
MAX	0.1694	0.2459	-0.8145	8.6977	-0.0861	0.0666	0.0171	0.6078
EQ1	0.2009	0.1346	-0.1730	4.0831	-0.0256	0.0337	-0.0005	1.3444
8Percent	0.2035	0.1267	-0.2686	5.7369	-0.0350	0.0293	-0.0567	1.4483
20Percent	0.1739	0.1262	-0.2225	4.0830	-0.0238	0.0307	-0.0161	1.2195

Table 5: Performance
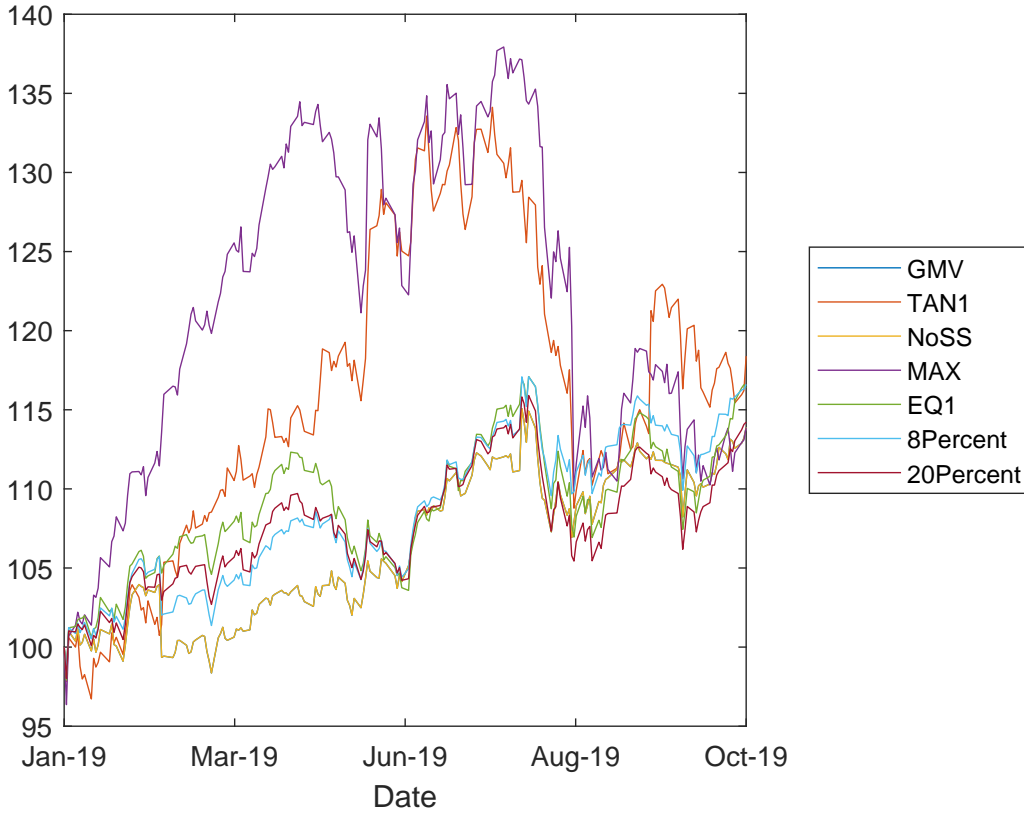
Figure 7: Normalised data, performance