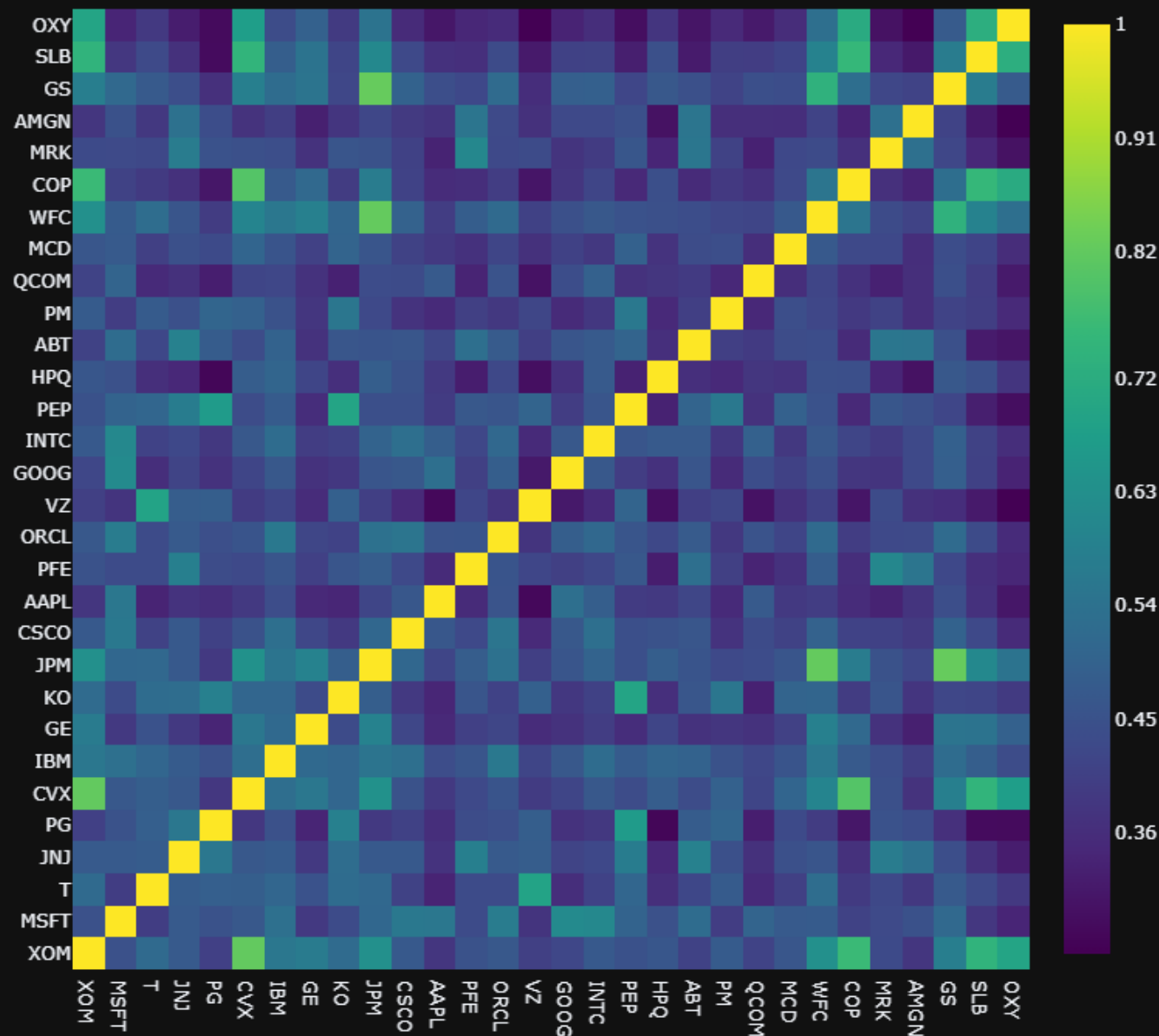


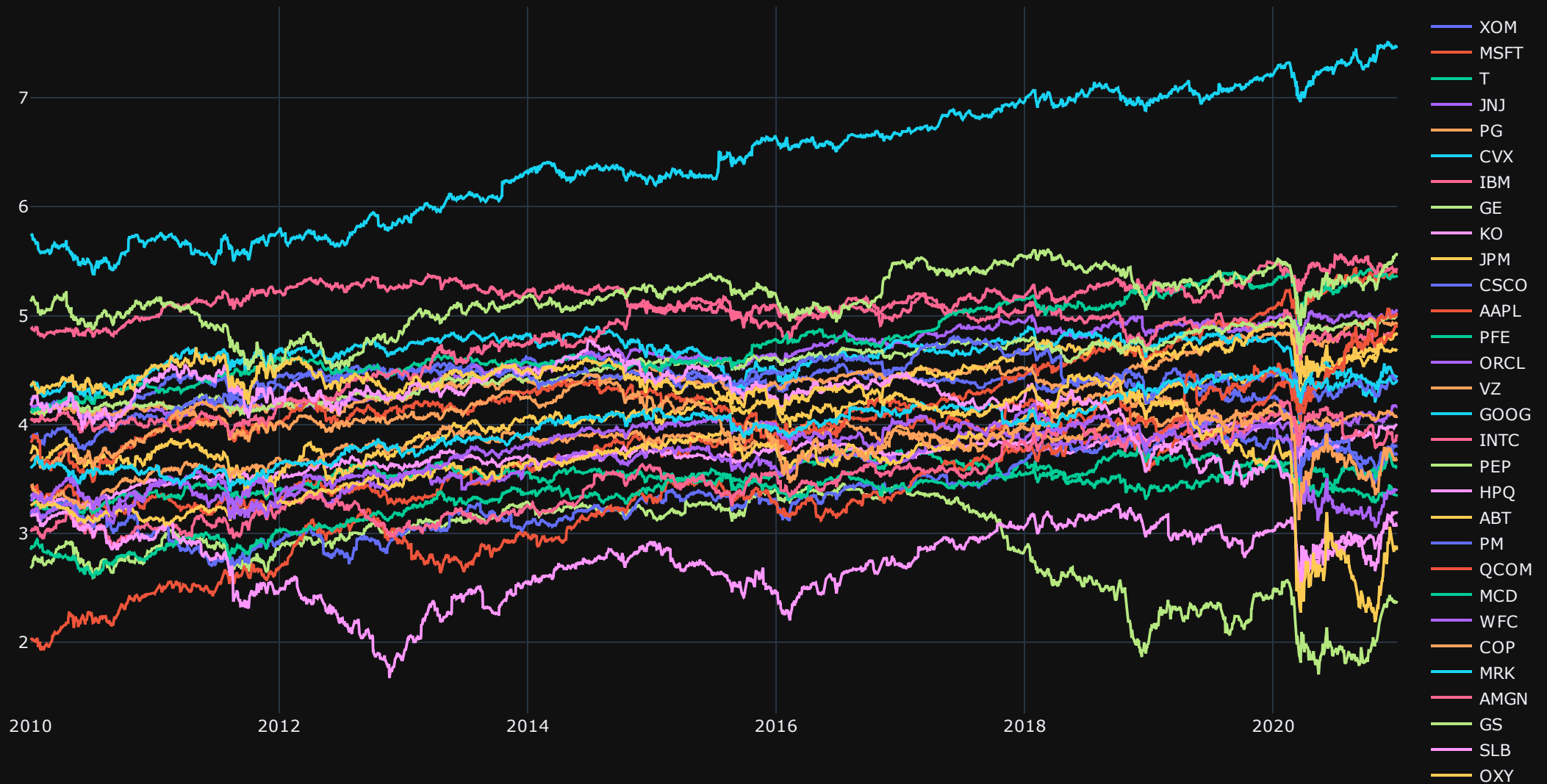
# Portfolio optimization strategies

Done by:  
Anashin Petr  
Ladygin Mikhail  
Nesterov Ivan  
Fyodorov Alexey

# Correlation matrix of 30 American companies (like General Electric, Procter & Gamble and Oracle)



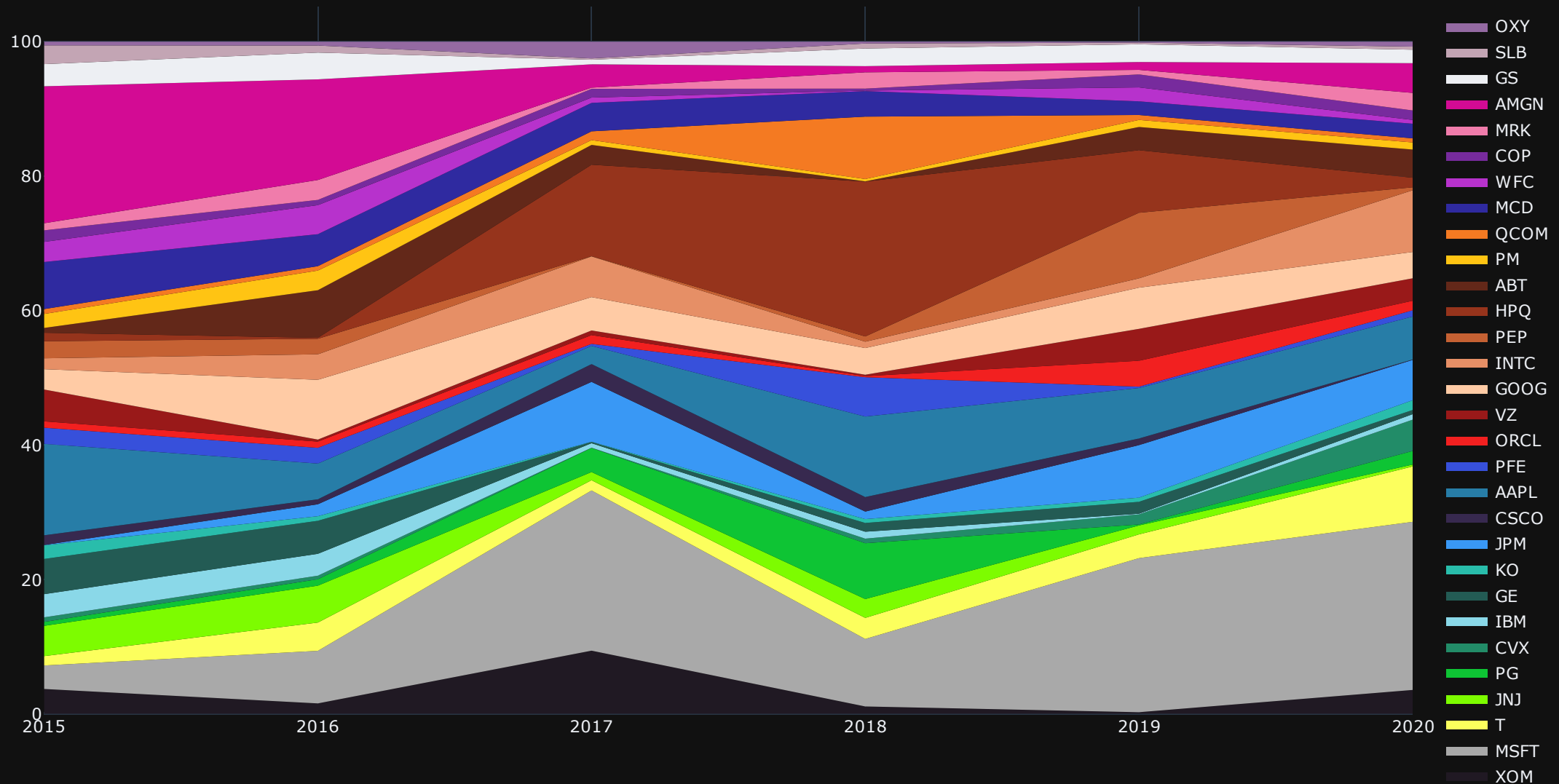
# Plots of selected stocks throughout 2010-2020 (logarithmic scale was utilized)



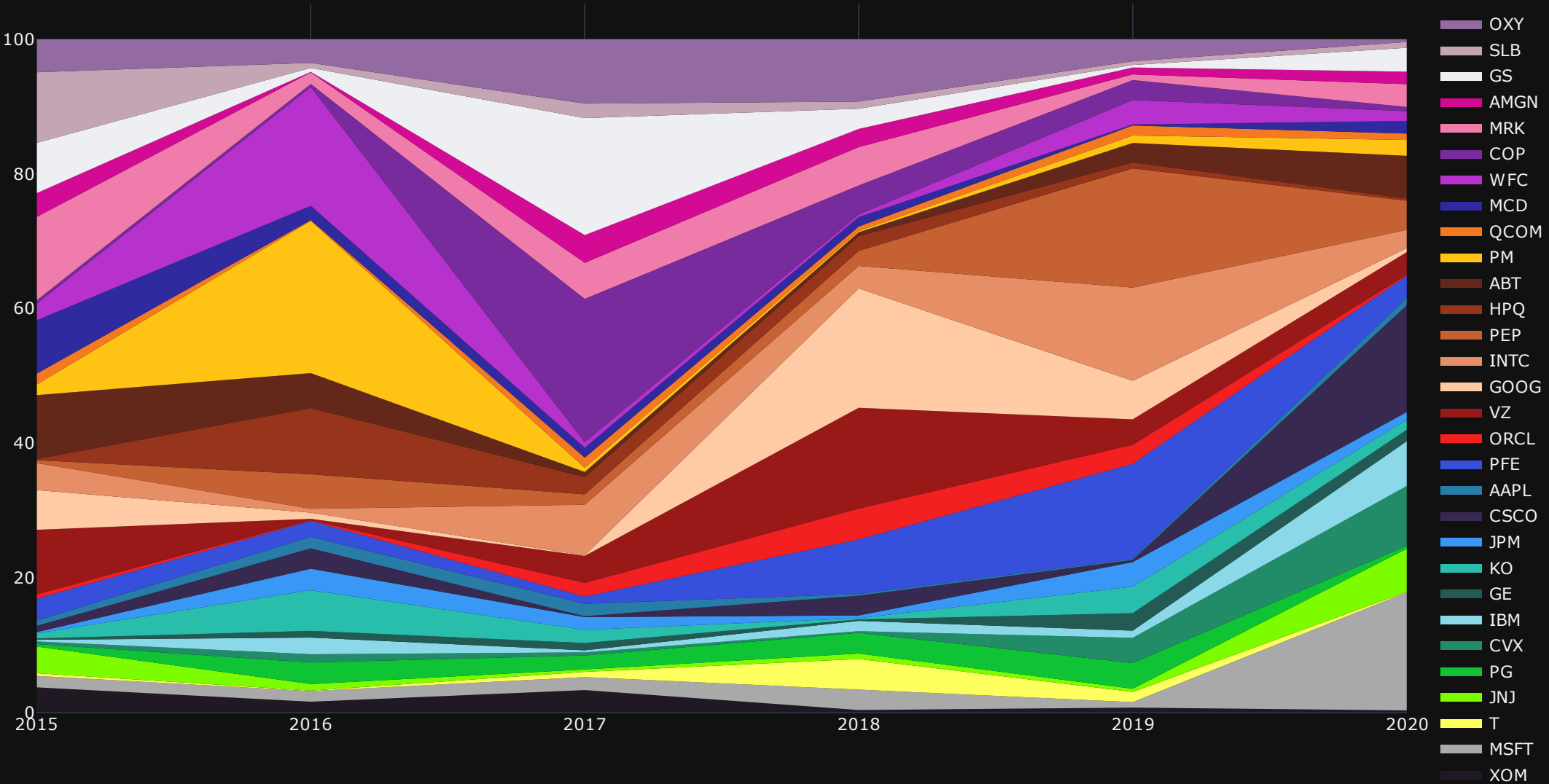
# Portfolio value graphs from 2015 till 2021 (incl. optimal portfolio, minimum volatility portfolio and portfolio with efficient risk = 0.18)



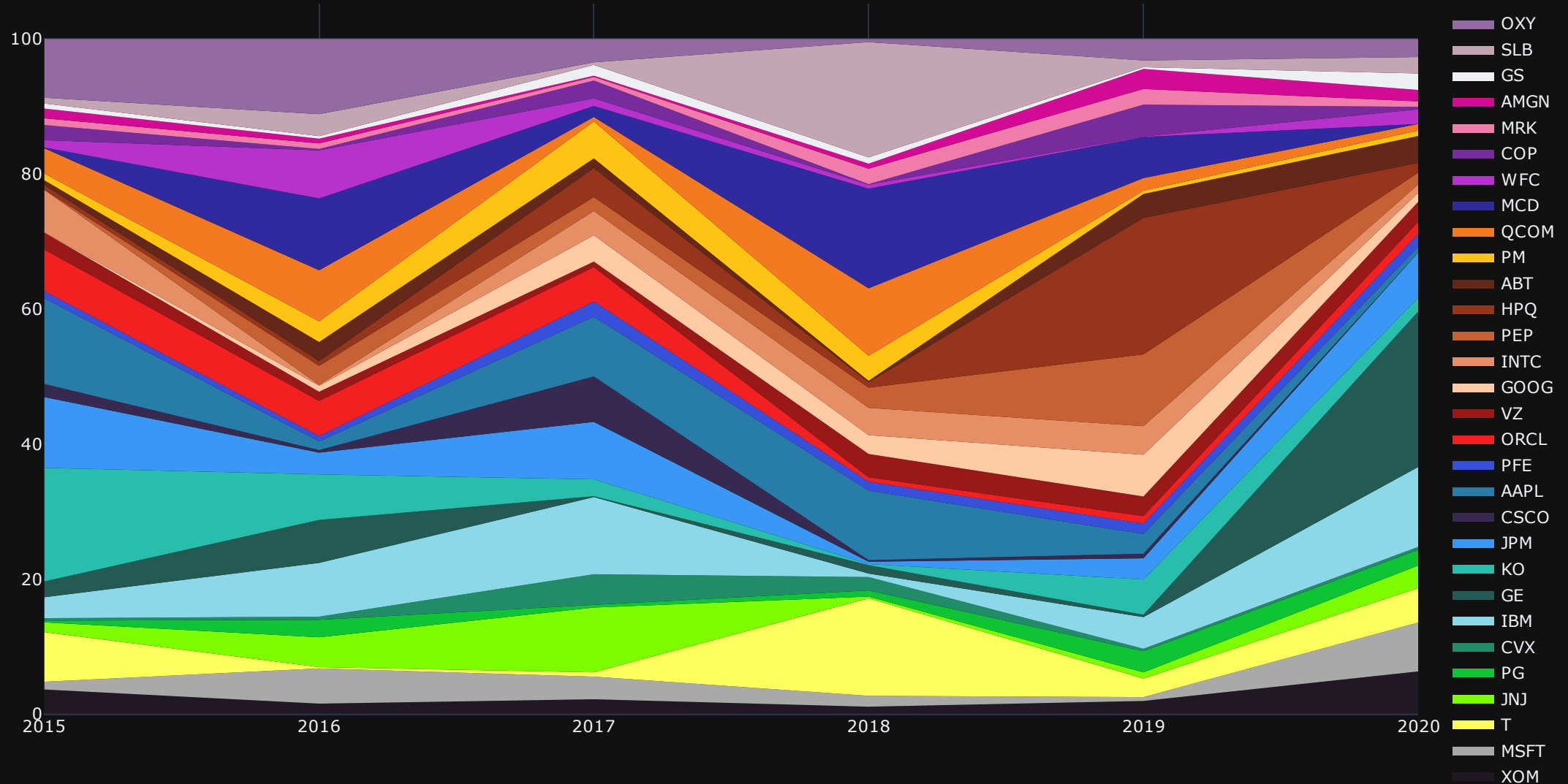
# Altering of optimal portfolio weights during observed period (2015-2020)



# Altering of minimum volatility portfolio weights during observed period (2015-2020)



# Altering of efficient risk portfolio weights during observed period (2015-2020)



# Statistics for each portfolio type

Portfolio type	Optimal portfolio	Minimum volatility	Efficient risk = 0.18
Annual return, 2015	1.47%	-0.47%	-4.86%
Annual return, 2016	7.35%	10.04%	6.02%
Annual return, 2017	25.41%	9.97%	18.21%
Annual return, 2018	-2.77%	-3.38%	1.12%
Annual return, 2019	33.98%	19.84%	20.8%
Annual return, 2020	9.06%	2.22%	8.12%
Average annual return	12.42%	6.29%	8.24%
Maximum recovery period, days	293	226	443
Maximum drawdown, dollars	590876.29	460138.13	513008.27
Volatility	0.49	0.40	0.49