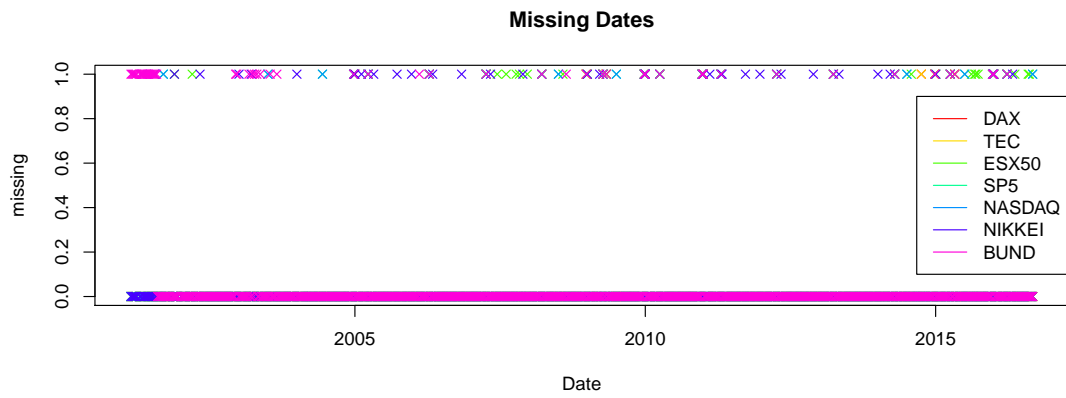
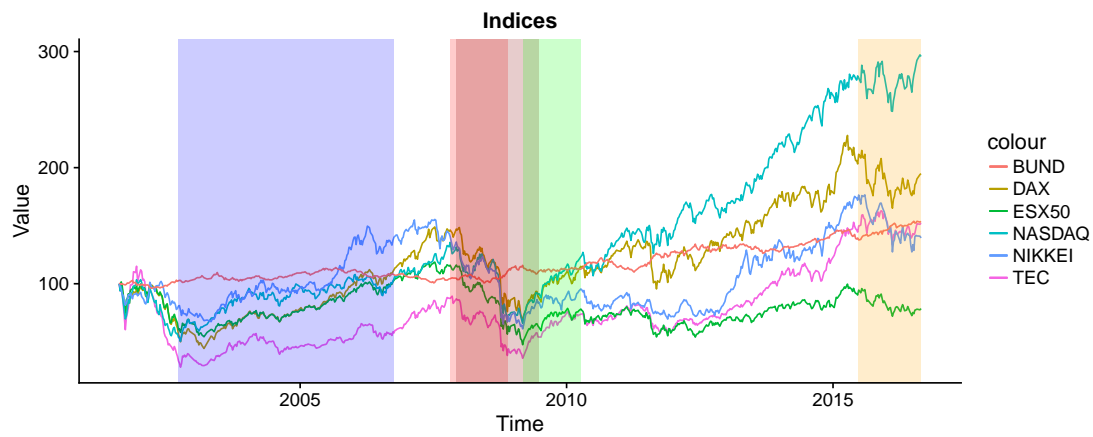


# 1 Data Import Preparation

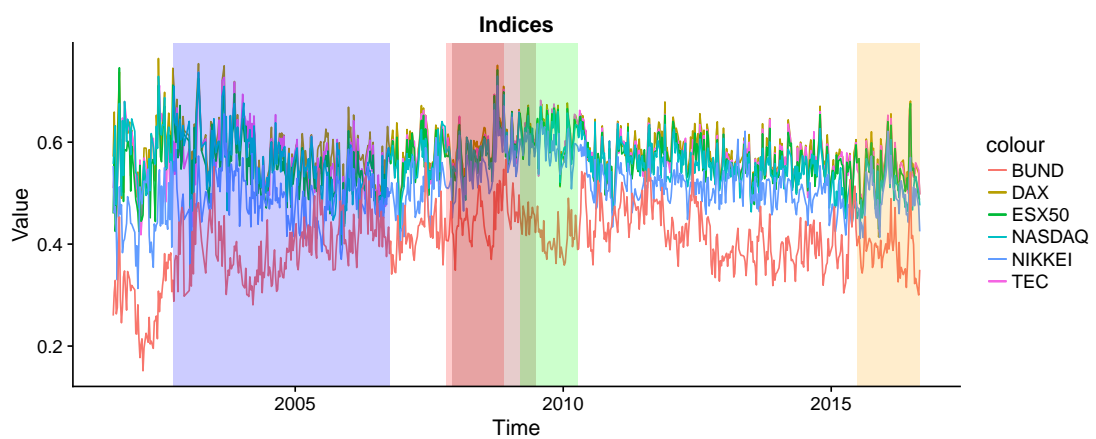




## 2 Data Visualization

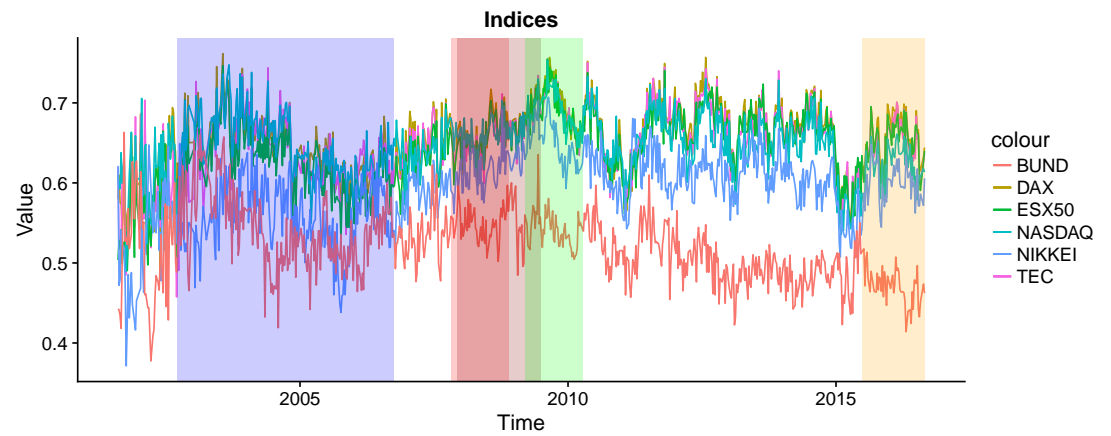


### 2.0.1 Herfindahl

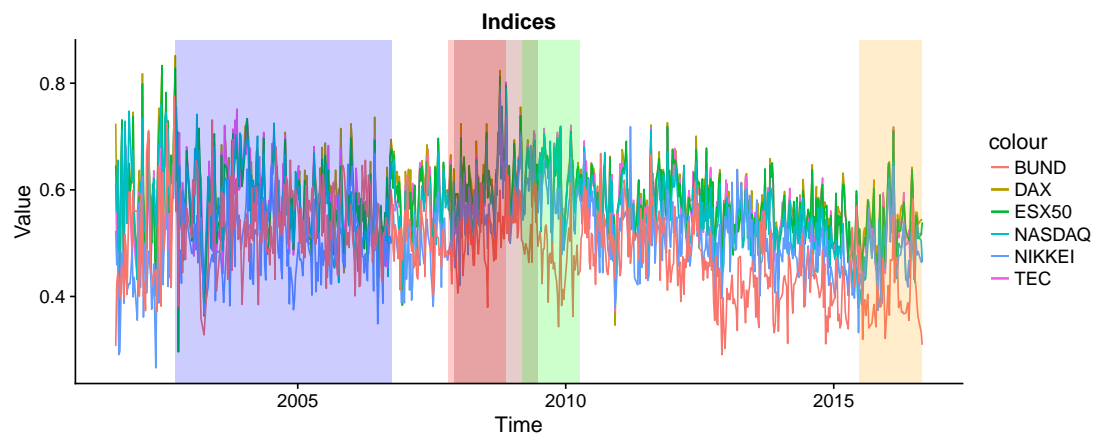


P1.pdf

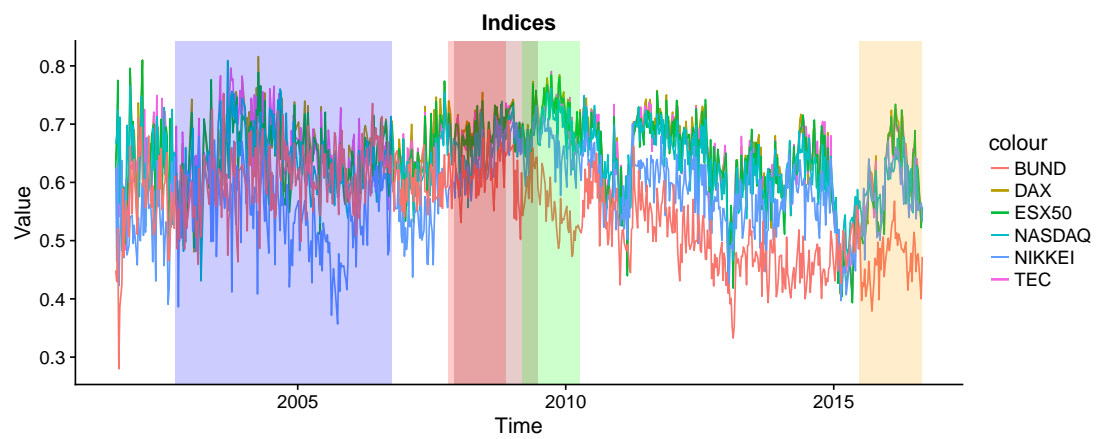
## 2 Data Visualization



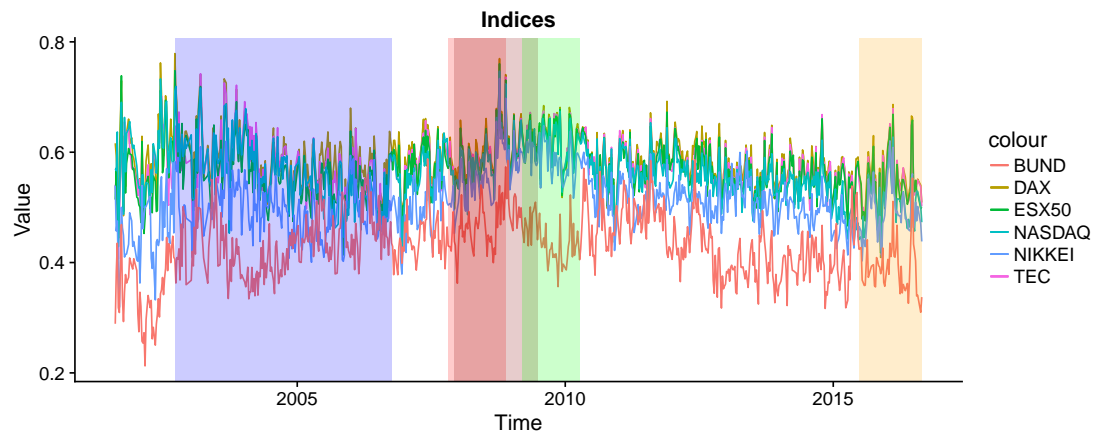
P6.pdf



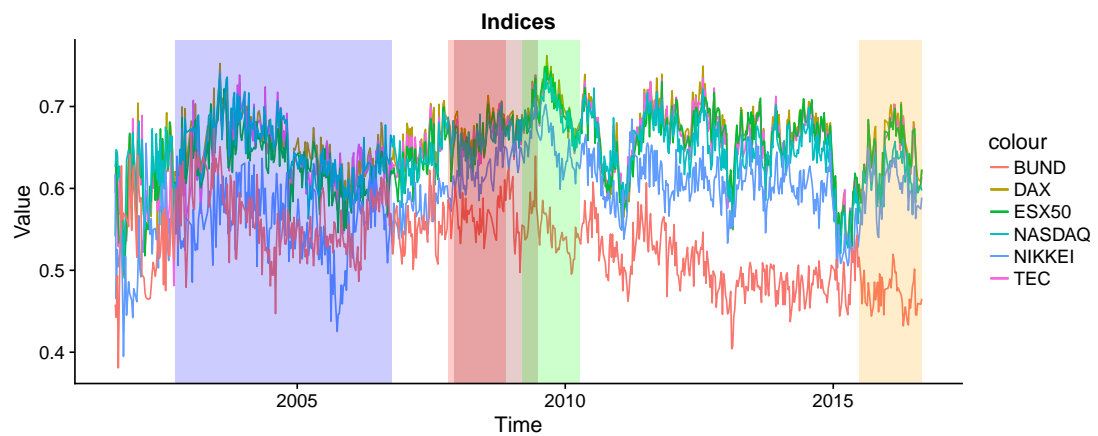
I1.pdf



I6.pdf



G1.pdf



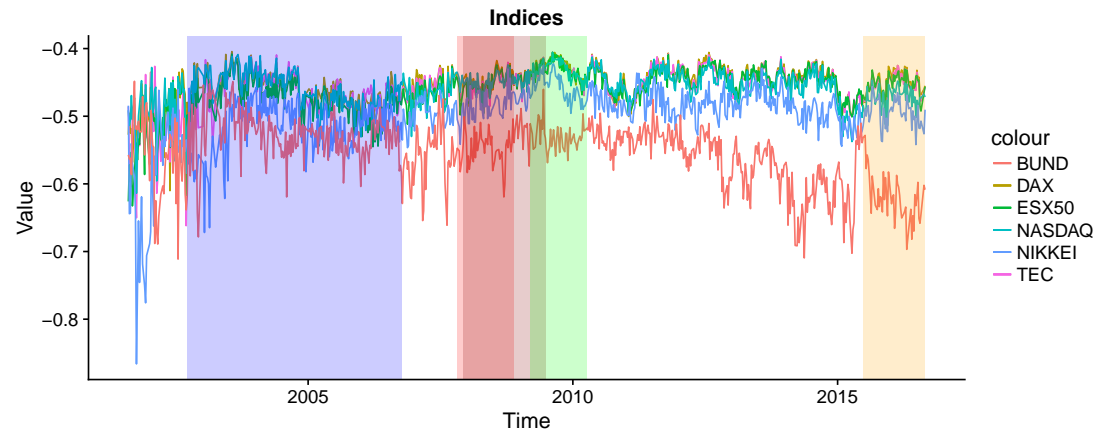
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## 2.0.2 Herfindahl

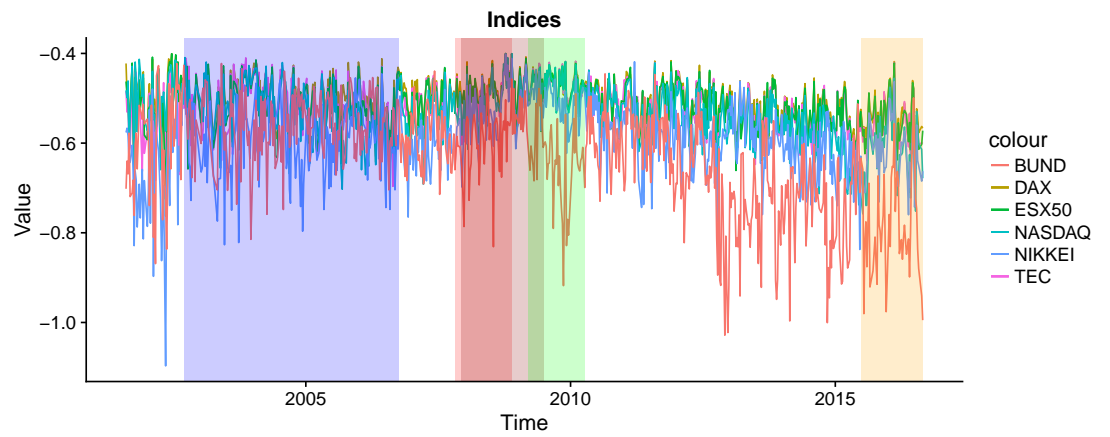


P1.pdf

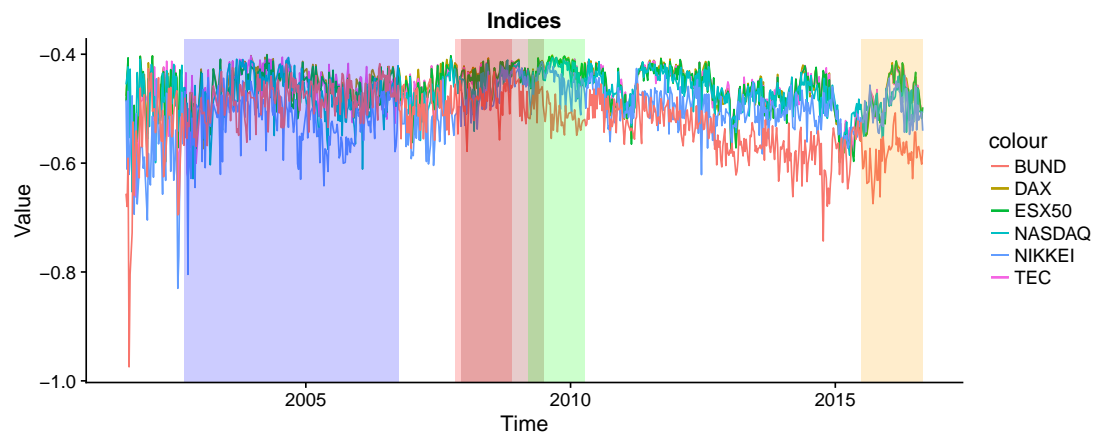
## 2 Data Visualization



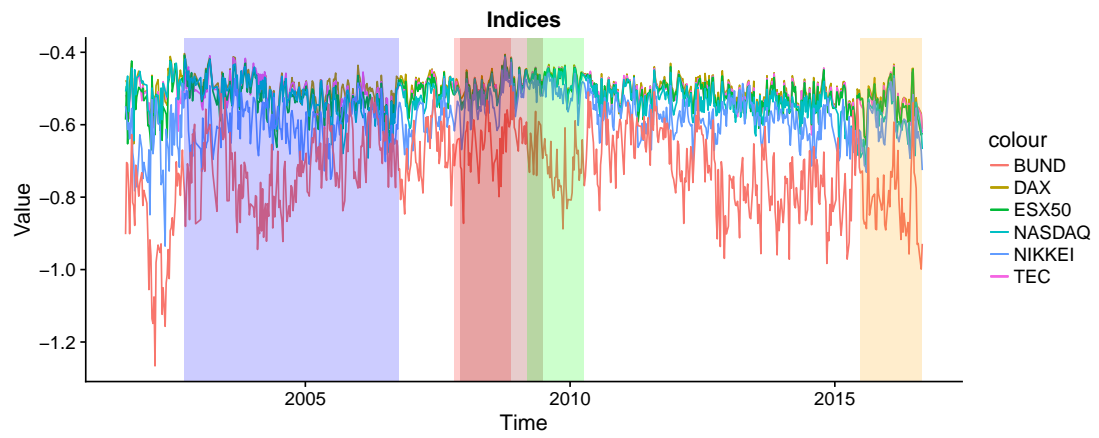
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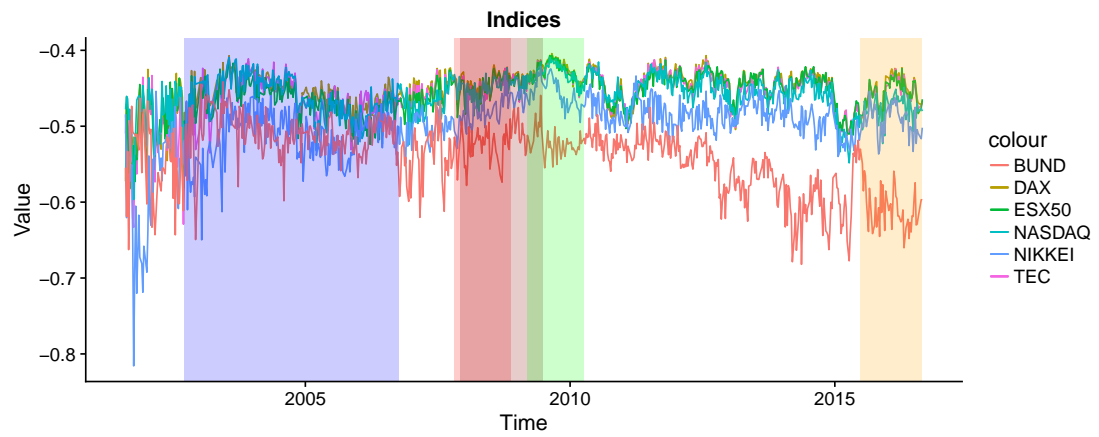
I1.pdf



I6.pdf



G1.pdf



G6.pdf



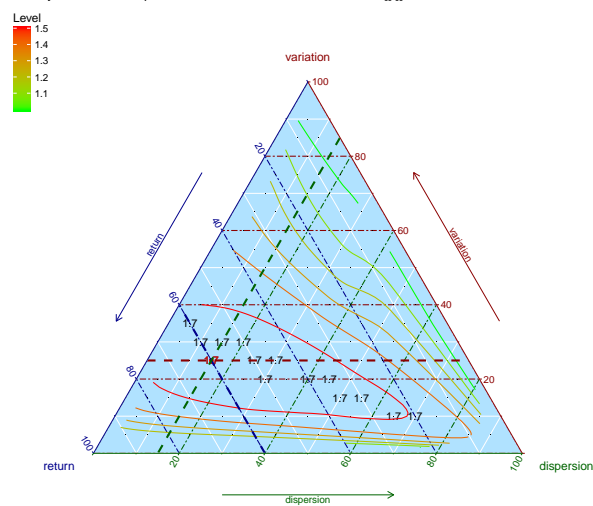
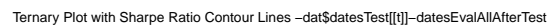
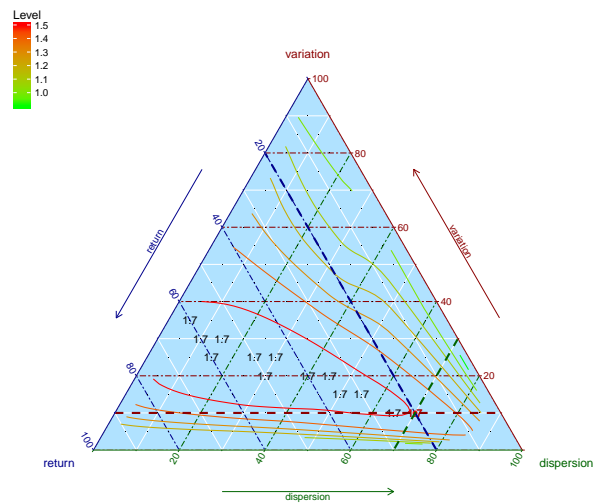
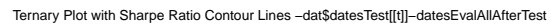


## 3 Results

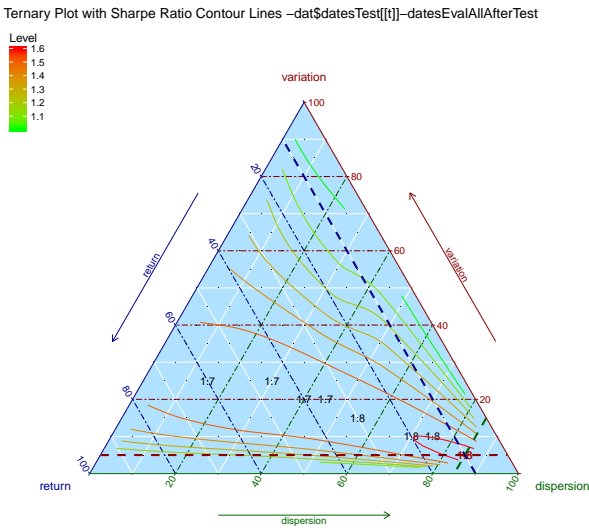
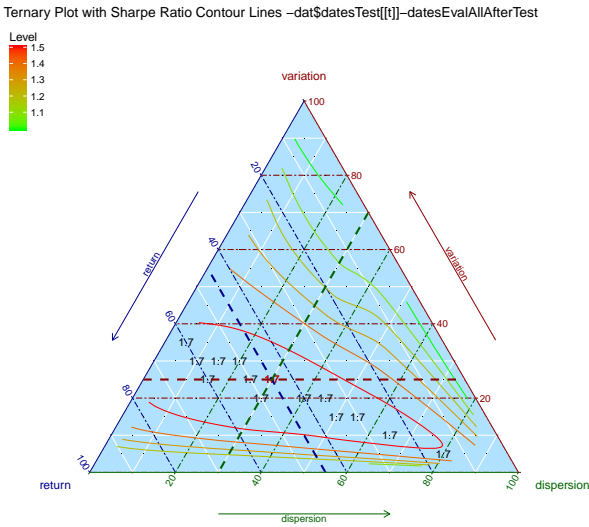
### 3.1 Ternary

### 3 Results

### 3.1.1 Ternary-Dispersion

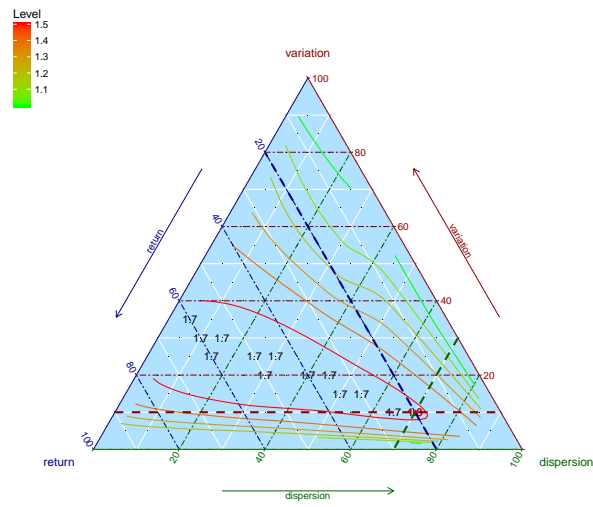


3.1 Ternary

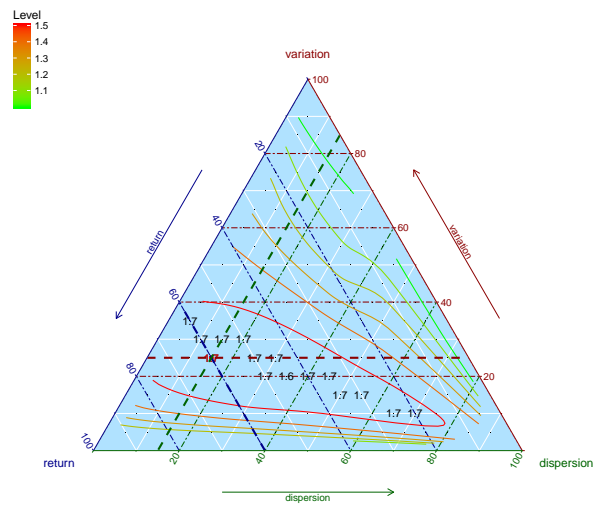


### 3 Results

Ternary Plot with Sharpe Ratio Contour Lines –dat\$datesTest[[1]]–datesEvalAllAfterTest

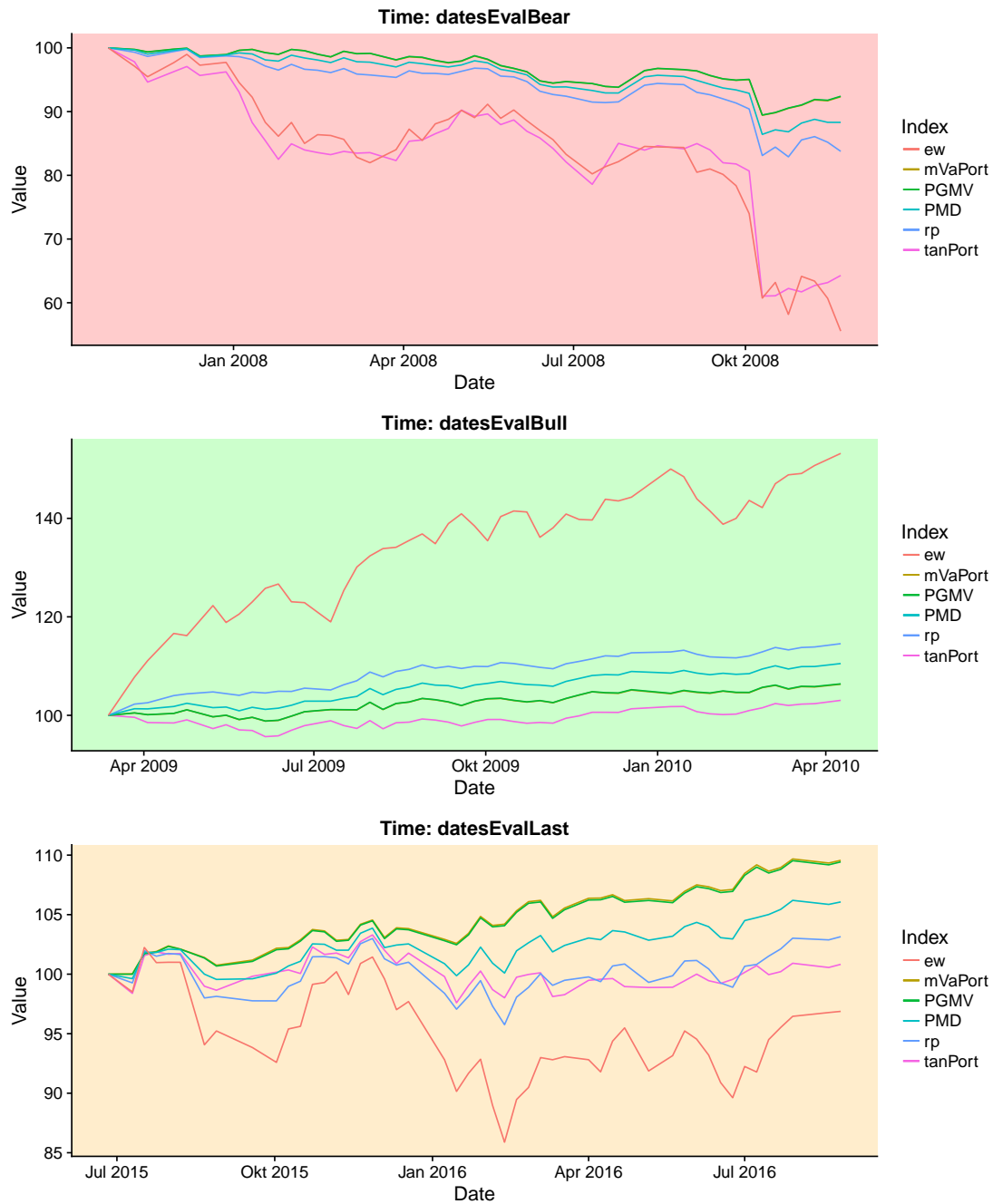


Ternary Plot with Sharpe Ratio Contour Lines –dat\$datesTest[[1]]–datesEvalAllAfterTest

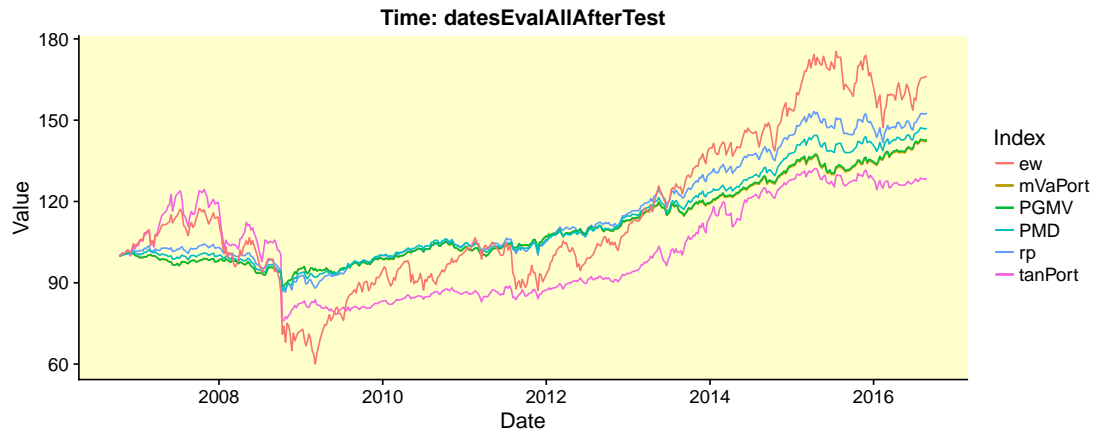


## 3.2 Performance

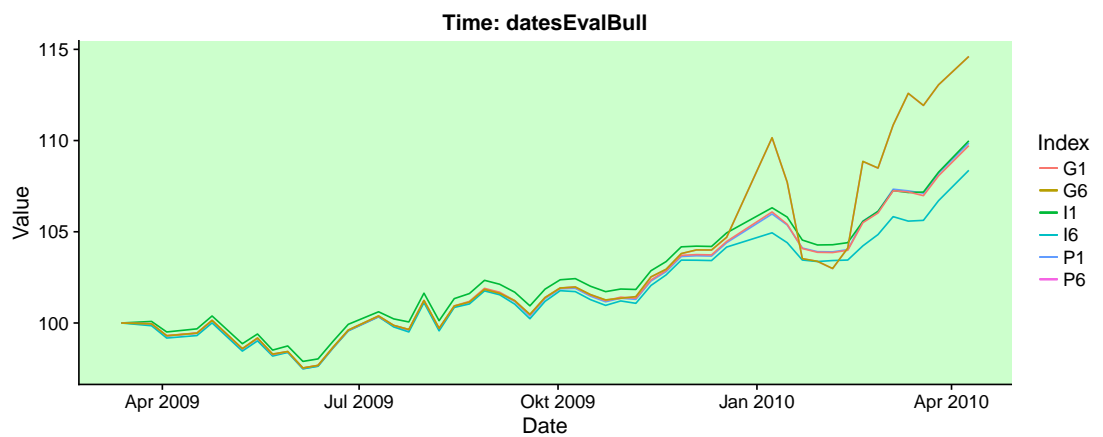
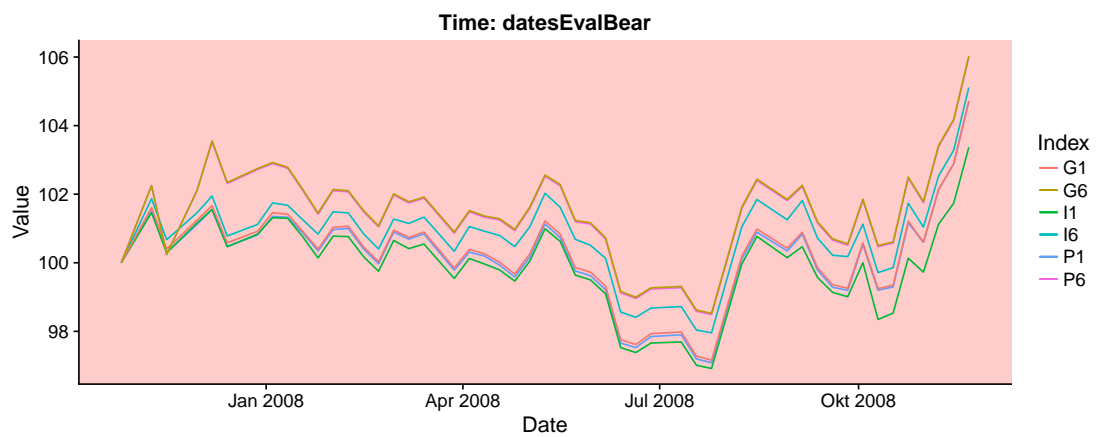
### 3.2.1 classic - constant weights

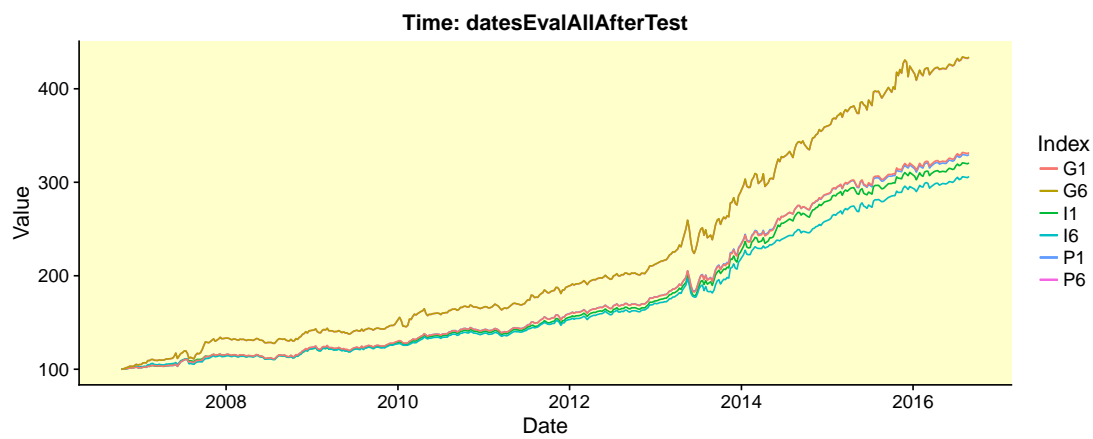
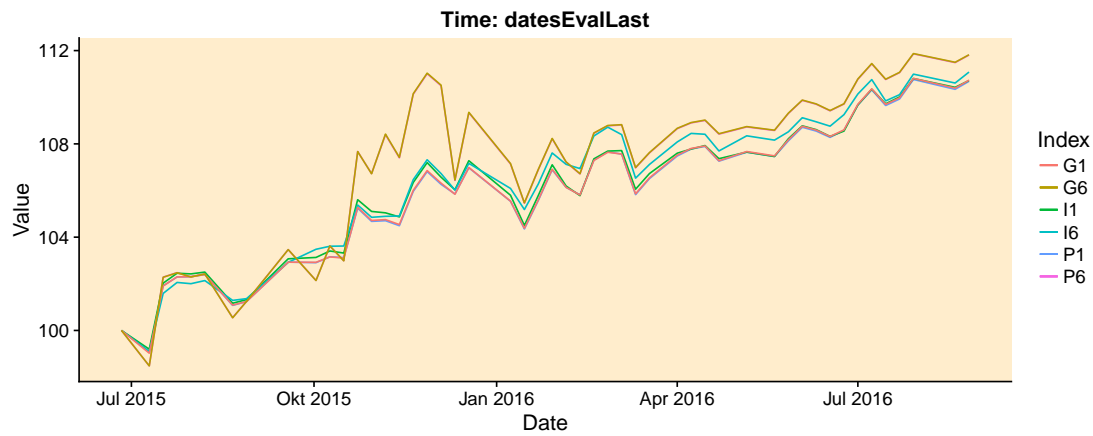


### 3 Results

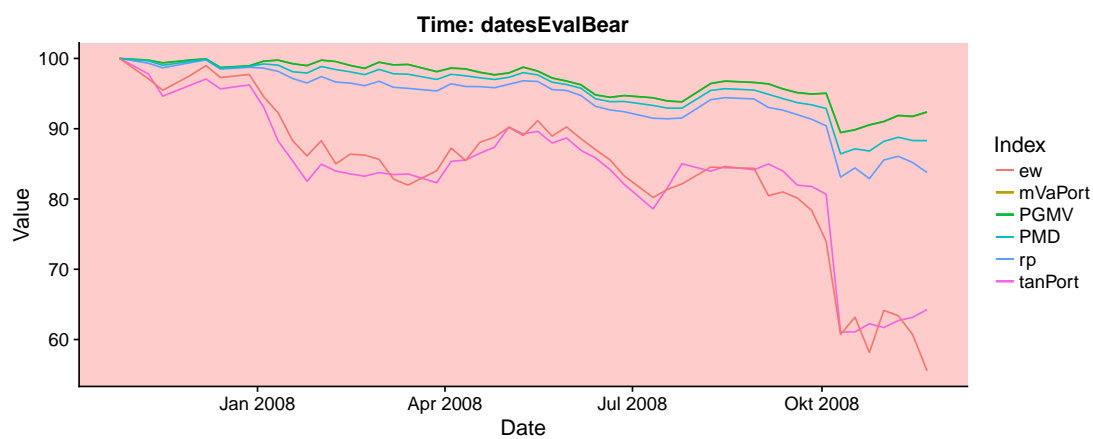


#### 3.2.2 Performance-Sentix

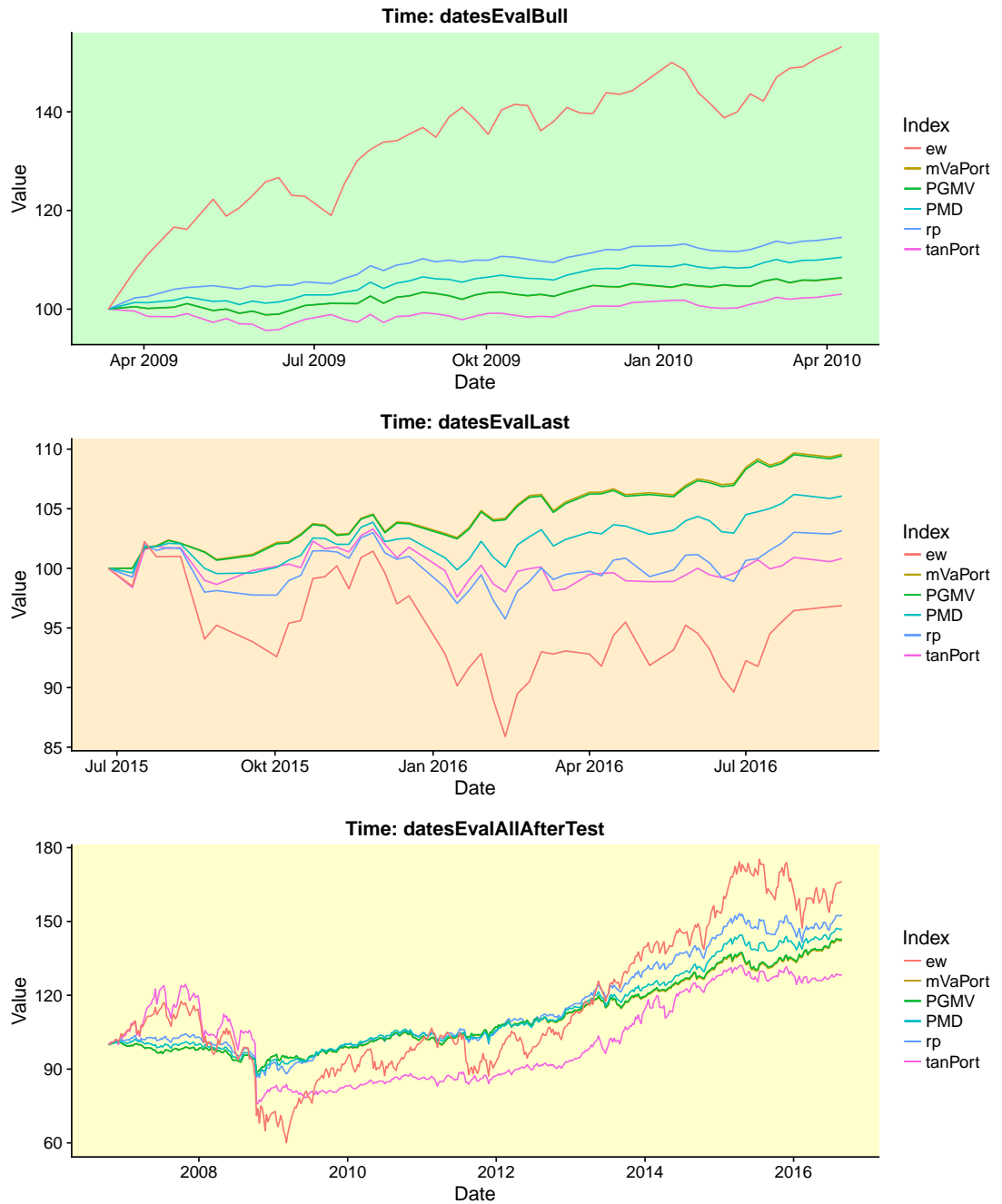




### 3.2.3 Performance-Classic

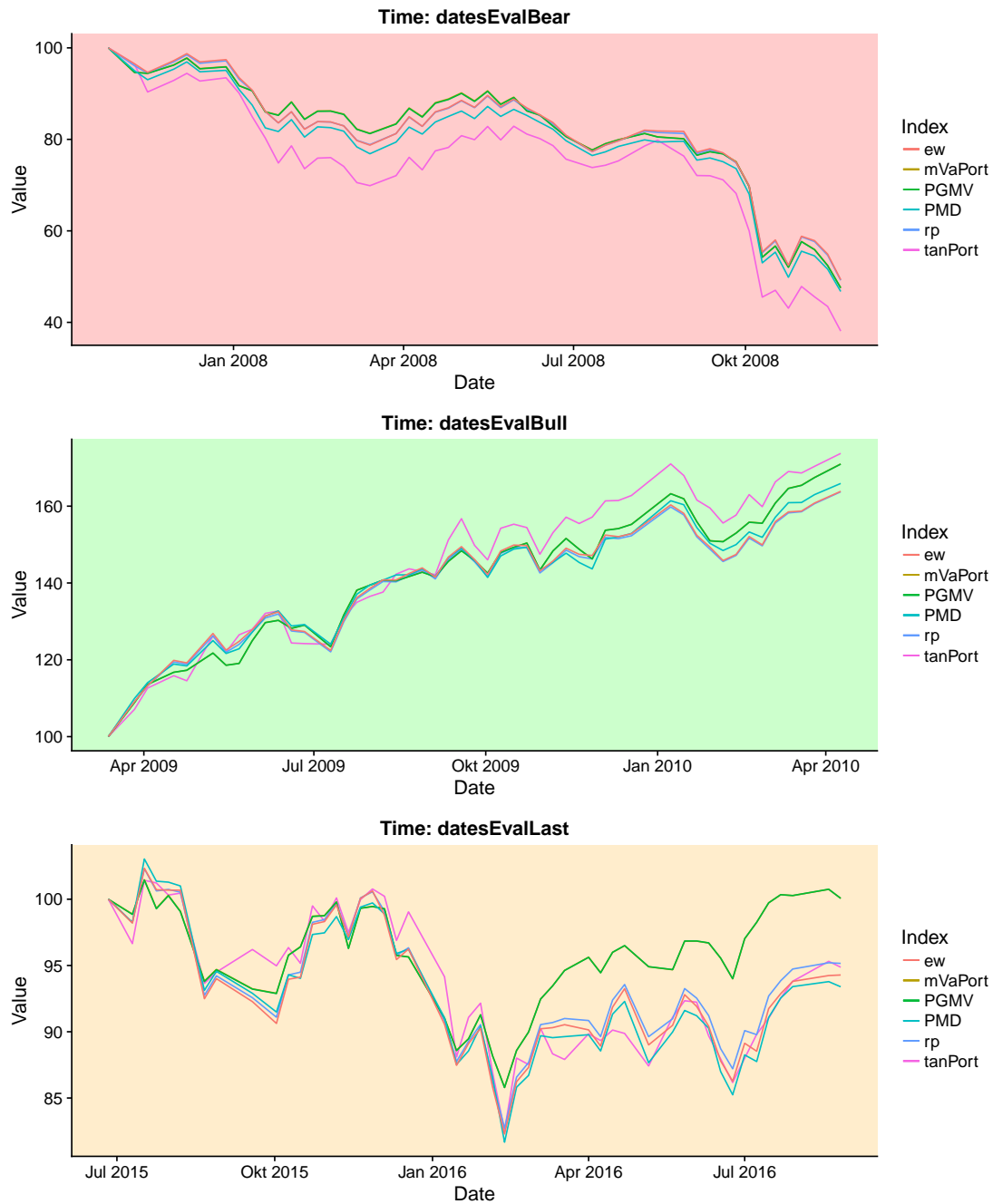


### 3 Results

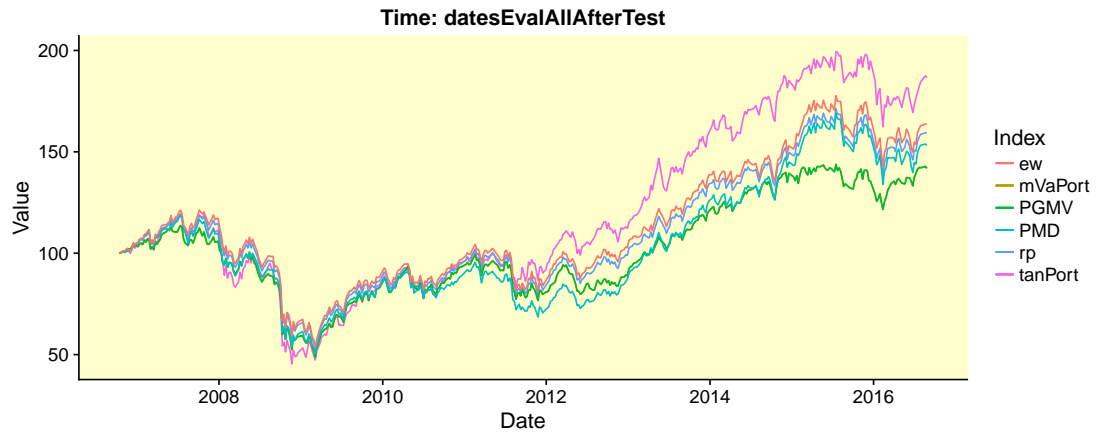




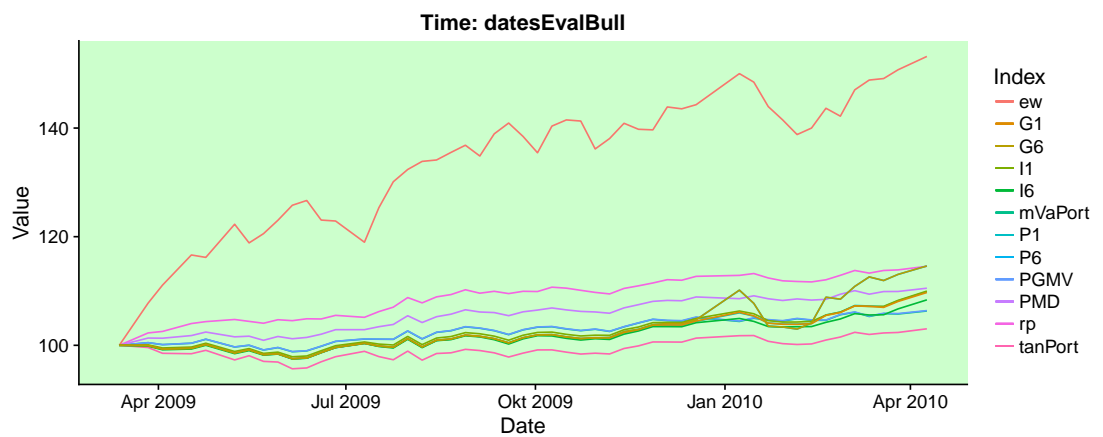
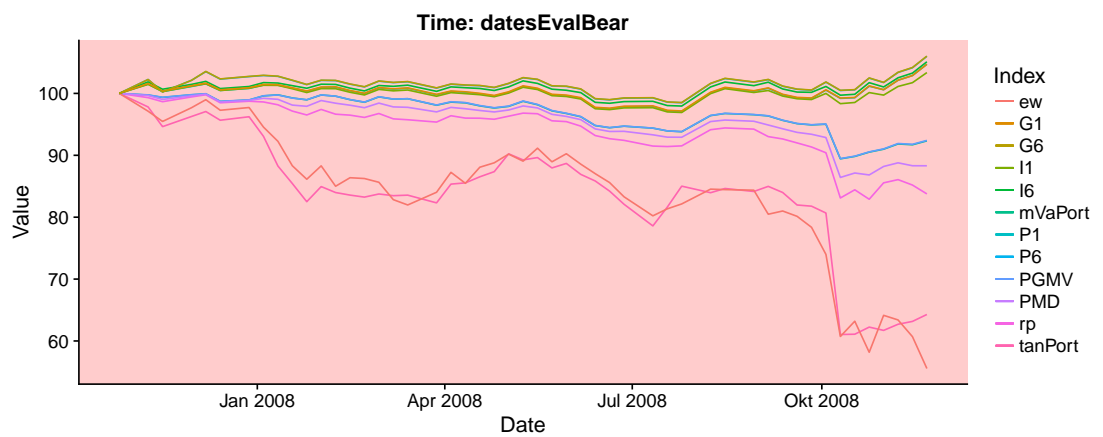
## 3.2.4 Performance-Classic-No-Risk-Free

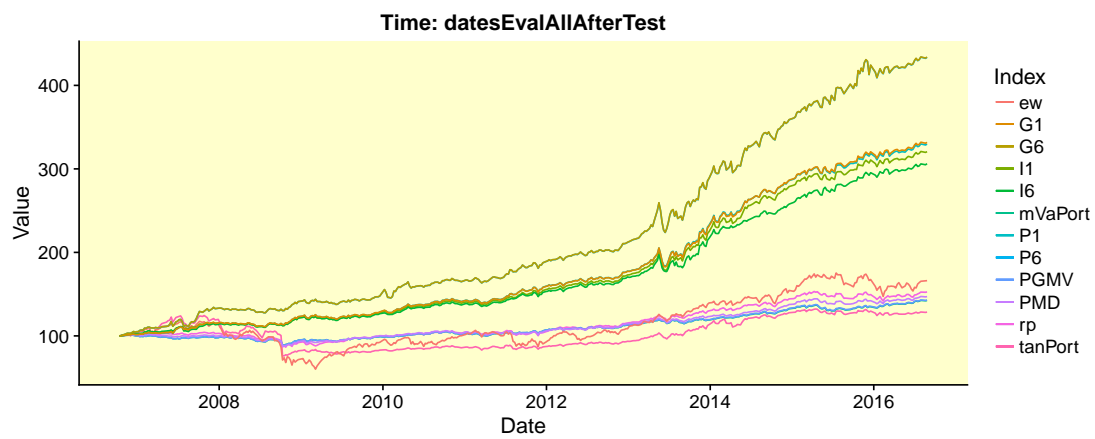
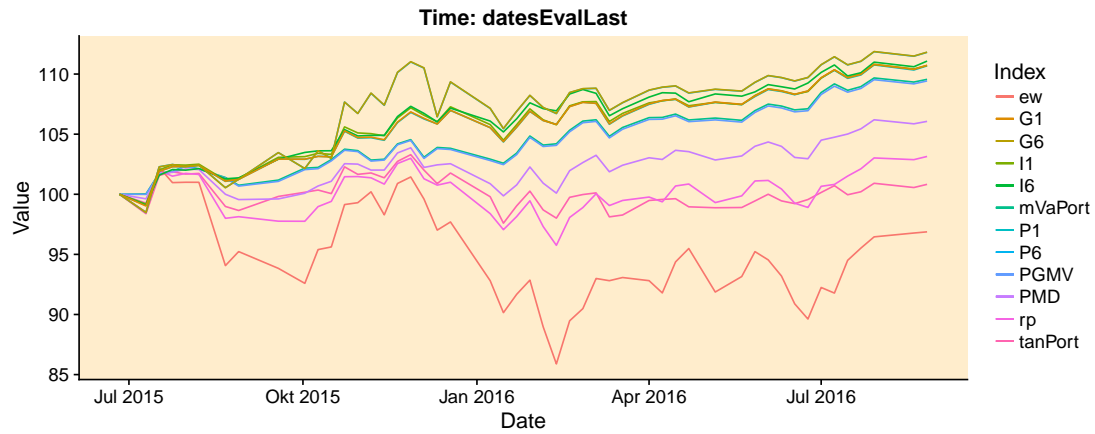


### 3 Results

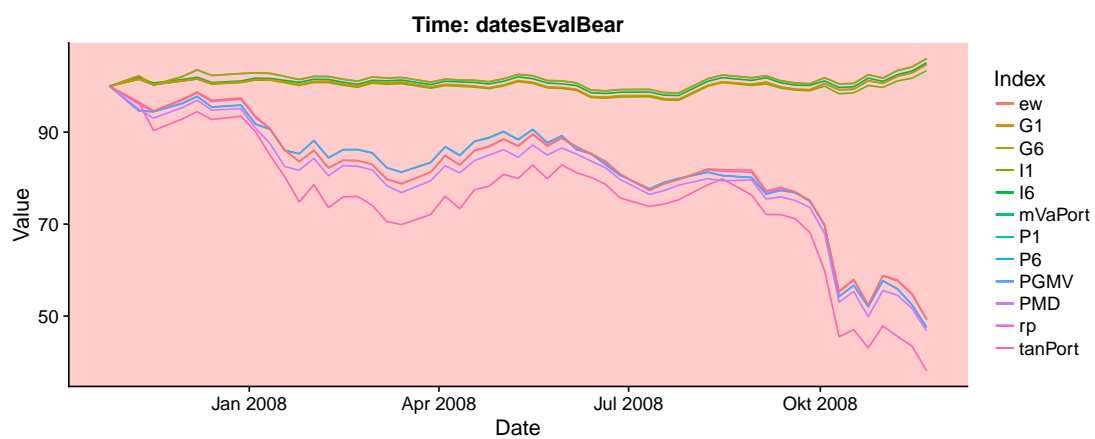


#### 3.2.5 Performance-All-classicWithRiskFree

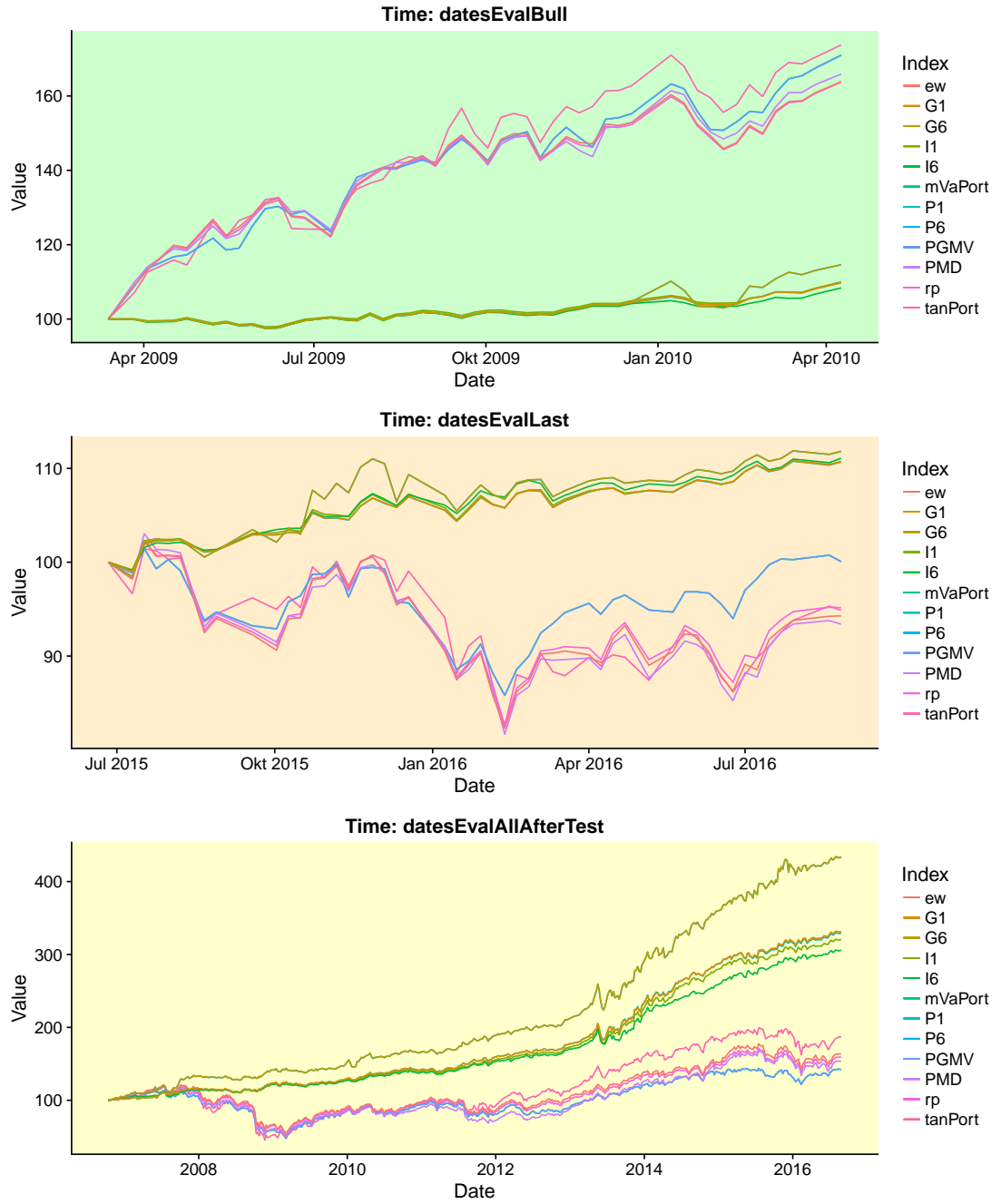




### 3.2.6 Performance-All-classicNoRiskFree



### 3 Results



### 3.3 Analysis

#### 3.3.1 Summary-Sentix

##### datesEvalBear

	P1	P6	I1	I6	G1	G6
Mean Return (an)	0.05	0.07	0.04	0.06	0.05	0.07
Volatility (an)	0.07	0.07	0.06	0.07	0.07	0.07
Sharpe Ratio (an)	0.79	0.89	0.59	0.84	0.78	0.90

##### datesEvalBull

	P1	P6	I1	I6	G1	G6
Mean Return (an)	0.11	0.16	0.11	0.09	0.11	0.16
Volatility (an)	0.06	0.10	0.05	0.05	0.06	0.10
Sharpe Ratio (an)	1.89	1.59	2.01	1.71	1.85	1.59

##### datesEvalLast

	P1	P6	I1	I6	G1	G6
Mean Return (an)	0.12	0.13	0.12	0.12	0.12	0.13
Volatility (an)	0.06	0.11	0.06	0.06	0.06	0.11
Sharpe Ratio (an)	1.84	1.25	1.81	2.06	1.83	1.25

##### datesEvalAllAfterTest

	P1	P6	I1	I6	G1	G6
Mean Return (an)	0.15	0.19	0.14	0.14	0.15	0.19
Volatility (an)	0.08	0.10	0.08	0.07	0.08	0.10
Sharpe Ratio (an)	1.92	1.81	1.91	1.85	1.92	1.81

## 3.3.2 Summary-Classic

**datesEvalBear**

	tanPort	mVaPort	rp	PGMV	PMD	ew
Mean Return (an)	-0.34	-0.08	-0.17	-0.08	-0.12	-0.44
Volatility (an)	0.29	0.08	0.11	0.08	0.09	0.29
Sharpe Ratio (an)	-1.19	-1.00	-1.54	-0.99	-1.37	-1.51

**datesEvalBull**

	tanPort	mVaPort	rp	PGMV	PMD	ew
Mean Return (an)	0.03	0.07	0.16	0.07	0.11	0.60
Volatility (an)	0.06	0.05	0.04	0.05	0.04	0.18
Sharpe Ratio (an)	0.61	1.48	3.50	1.51	2.75	3.35

**datesEvalLast**

	tanPort	mVaPort	rp	PGMV	PMD	ew
Mean Return (an)	0.01	0.10	0.04	0.10	0.07	-0.02
Volatility (an)	0.08	0.05	0.09	0.05	0.06	0.17
Sharpe Ratio (an)	0.15	2.10	0.42	2.07	1.04	-0.11

**datesEvalAllAfterTest**

	tanPort	mVaPort	rp	PGMV	PMD	ew
Mean Return (an)	0.04	0.04	0.05	0.04	0.05	0.08
Volatility (an)	0.13	0.05	0.07	0.05	0.06	0.18
Sharpe Ratio (an)	0.29	0.78	0.72	0.79	0.79	0.43

### 3.3.3 Summary-Classic-No-Risk-Free

#### datesEvalBear

	tanPort	mVaPort	rp	PGMV	PMD	ew
Mean Return (an)	-0.61	-0.52	-0.50	-0.52	-0.52	-0.50
Volatility (an)	0.41	0.34	0.34	0.34	0.35	0.34
Sharpe Ratio (an)	-1.50	-1.52	-1.45	-1.52	-1.50	-1.44

#### datesEvalBull

	tanPort	mVaPort	rp	PGMV	PMD	ew
Mean Return (an)	0.84	0.80	0.72	0.80	0.75	0.73
Volatility (an)	0.23	0.20	0.21	0.20	0.21	0.21
Sharpe Ratio (an)	3.60	3.94	3.41	3.93	3.56	3.38

#### datesEvalLast

	tanPort	mVaPort	rp	PGMV	PMD	ew
Mean Return (an)	-0.03	0.01	-0.03	0.01	-0.05	-0.04
Volatility (an)	0.21	0.15	0.19	0.15	0.20	0.20
Sharpe Ratio (an)	-0.16	0.08	-0.17	0.08	-0.25	-0.20

#### datesEvalAllAfterTest

	tanPort	mVaPort	rp	PGMV	PMD	ew
Mean Return (an)	0.11	0.06	0.08	0.06	0.07	0.08
Volatility (an)	0.24	0.20	0.21	0.20	0.21	0.21
Sharpe Ratio (an)	0.44	0.31	0.37	0.31	0.35	0.39

**3.3.4 SummaryAll-classicWithRiskFree****datesEvalBear**

	tanPort	mVaPort	rp	PGMV	PMD	ew	P1	P6	I1	I6
Mean Return (an)	-0.34	-0.08	-0.17	-0.08	-0.12	-0.44	0.05	0.07	0.04	0.06
Volatility (an)	0.29	0.08	0.11	0.08	0.09	0.29	0.07	0.07	0.06	0.07
Sharpe Ratio (an)	-1.19	-1.00	-1.54	-0.99	-1.37	-1.51	0.79	0.89	0.59	0.84

**datesEvalBull**

	tanPort	mVaPort	rp	PGMV	PMD	ew	P1	P6	I1	I6
Mean Return (an)	0.03	0.07	0.16	0.07	0.11	0.60	0.11	0.16	0.11	0.09
Volatility (an)	0.06	0.05	0.04	0.05	0.04	0.18	0.06	0.10	0.05	0.05
Sharpe Ratio (an)	0.61	1.48	3.50	1.51	2.75	3.35	1.89	1.59	2.01	1.71

**datesEvalLast**

	tanPort	mVaPort	rp	PGMV	PMD	ew	P1	P6	I1	I6
Mean Return (an)	0.01	0.10	0.04	0.10	0.07	-0.02	0.12	0.13	0.12	0.12
Volatility (an)	0.08	0.05	0.09	0.05	0.06	0.17	0.06	0.11	0.06	0.06
Sharpe Ratio (an)	0.15	2.10	0.42	2.07	1.04	-0.11	1.84	1.25	1.81	2.06

**datesEvalAllAfterTest**

	tanPort	mVaPort	rp	PGMV	PMD	ew	P1	P6	I1	I6
Mean Return (an)	0.04	0.04	0.05	0.04	0.05	0.08	0.15	0.19	0.14	0.14
Volatility (an)	0.13	0.05	0.07	0.05	0.06	0.18	0.08	0.10	0.08	0.07
Sharpe Ratio (an)	0.29	0.78	0.72	0.79	0.79	0.43	1.92	1.81	1.91	1.85



**3.3.5 SummaryAll-classicNoRiskFree****datesEvalBear**

	tanPort	mVaPort	rp	PGMV	PMD	ew	P1	P6	I1	I6	G1	G6
Mean Return (an)	-0.61	-0.52	-0.50	-0.52	-0.52	-0.50	0.05	0.07	0.04	0.06	0.05	0.07
Volatility (an)	0.41	0.34	0.34	0.34	0.35	0.34	0.07	0.07	0.06	0.07	0.07	0.07
Sharpe Ratio (an)	-1.50	-1.52	-1.45	-1.52	-1.50	-1.44	0.79	0.89	0.59	0.84	0.78	0.90

**datesEvalBull**

	tanPort	mVaPort	rp	PGMV	PMD	ew	P1	P6	I1	I6	G1	G6
Mean Return (an)	0.84	0.80	0.72	0.80	0.75	0.73	0.11	0.16	0.11	0.09	0.11	0.16
Volatility (an)	0.23	0.20	0.21	0.20	0.21	0.21	0.06	0.10	0.05	0.05	0.06	0.10
Sharpe Ratio (an)	3.60	3.94	3.41	3.93	3.56	3.38	1.89	1.59	2.01	1.71	1.85	1.59

**datesEvalLast**

	tanPort	mVaPort	rp	PGMV	PMD	ew	P1	P6	I1	I6	G1	G6
Mean Return (an)	-0.03	0.01	-0.03	0.01	-0.05	-0.04	0.12	0.13	0.12	0.12	0.12	0.13
Volatility (an)	0.21	0.15	0.19	0.15	0.20	0.20	0.06	0.11	0.06	0.06	0.06	0.11
Sharpe Ratio (an)	-0.16	0.08	-0.17	0.08	-0.25	-0.20	1.84	1.25	1.81	2.06	1.83	1.25

**datesEvalAllAfterTest**

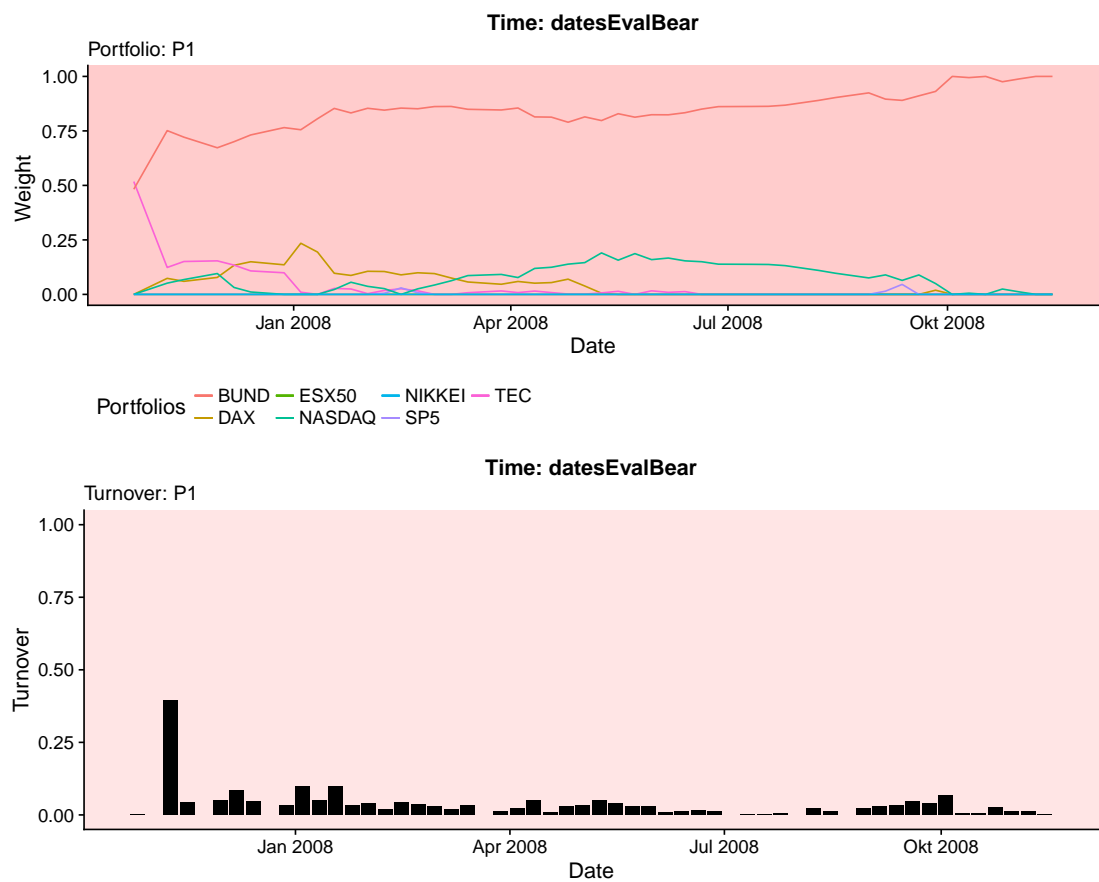
	tanPort	mVaPort	rp	PGMV	PMD	ew	P1	P6	I1	I6	G1	G6
Mean Return (an)	0.11	0.06	0.08	0.06	0.07	0.08	0.15	0.19	0.14	0.14	0.15	0.19
Volatility (an)	0.24	0.20	0.21	0.20	0.21	0.21	0.08	0.10	0.08	0.07	0.08	0.10
Sharpe Ratio (an)	0.44	0.31	0.37	0.31	0.35	0.39	1.92	1.81	1.91	1.85	1.92	1.81

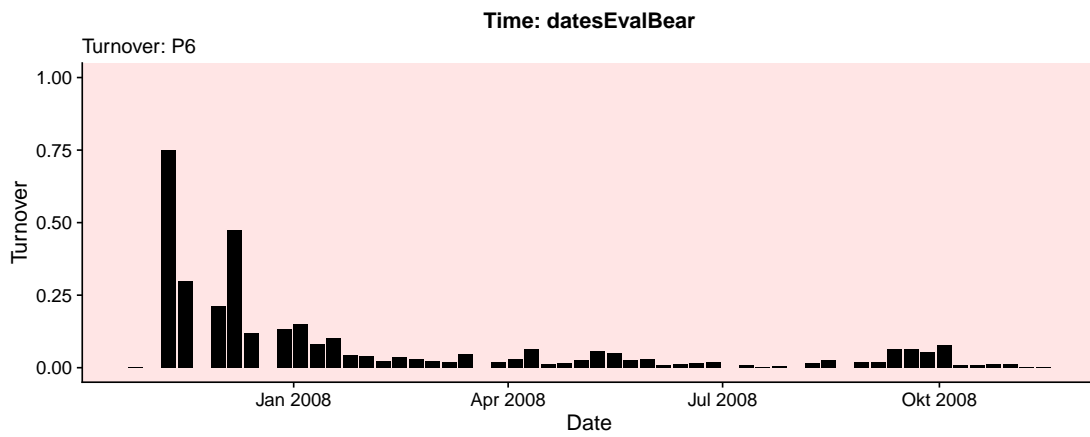
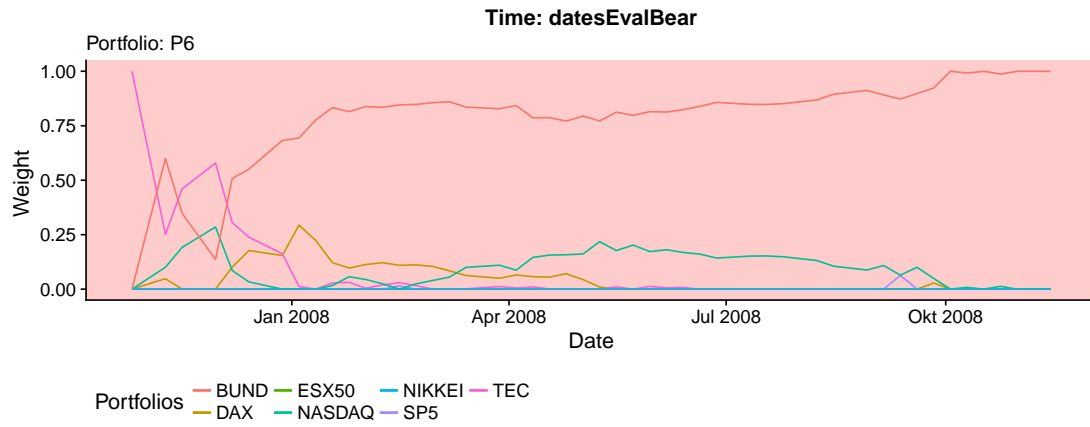
### 3 Results

## 3.4 Weights

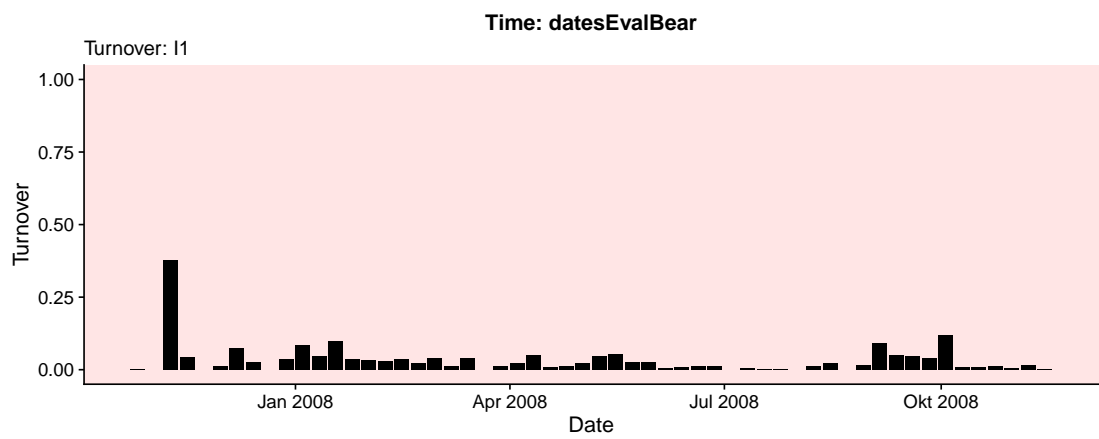
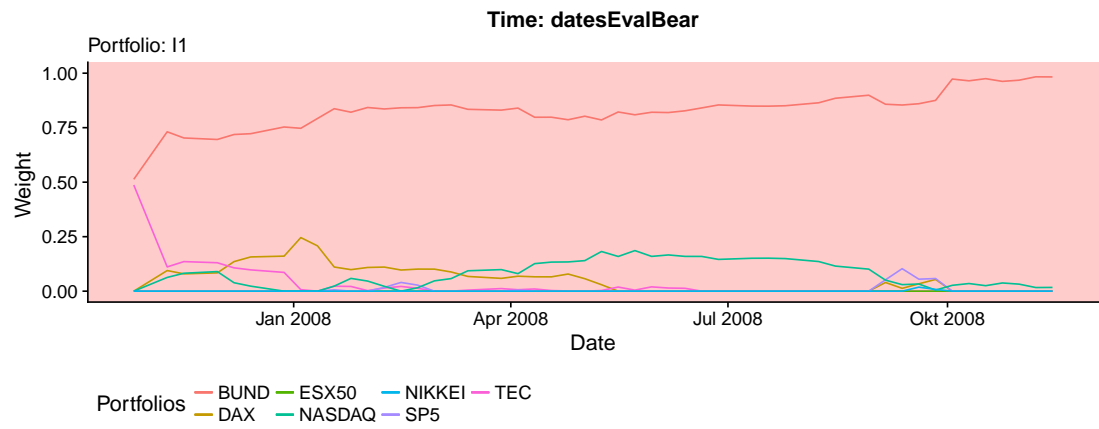
### 3.4.1 Weights-Sentix

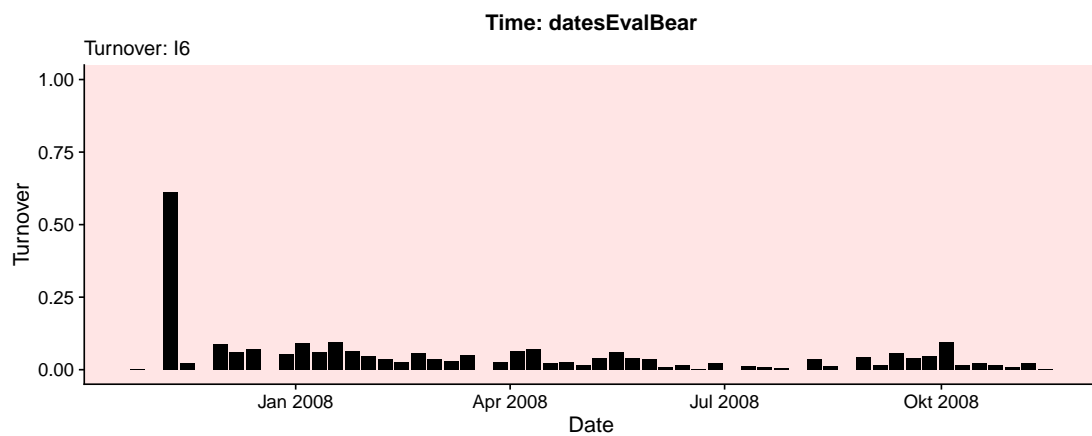
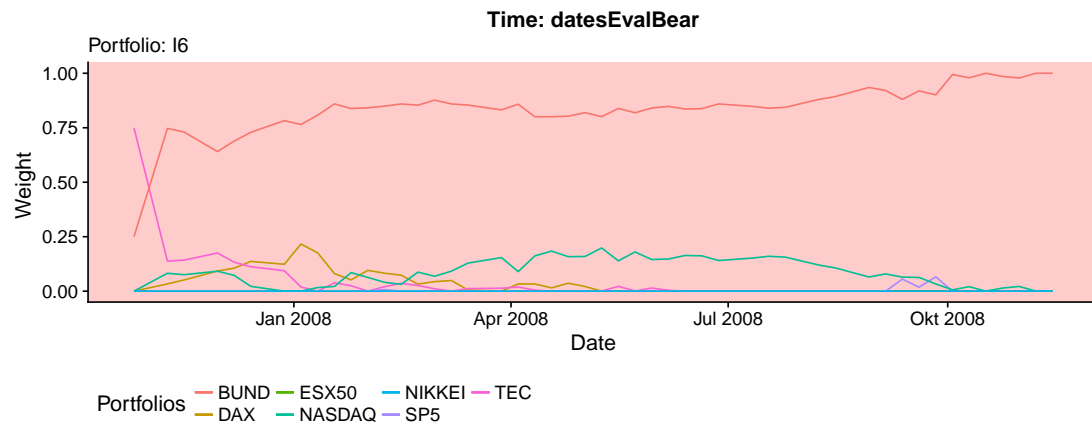
Weights-Sentix - datesEvalBear



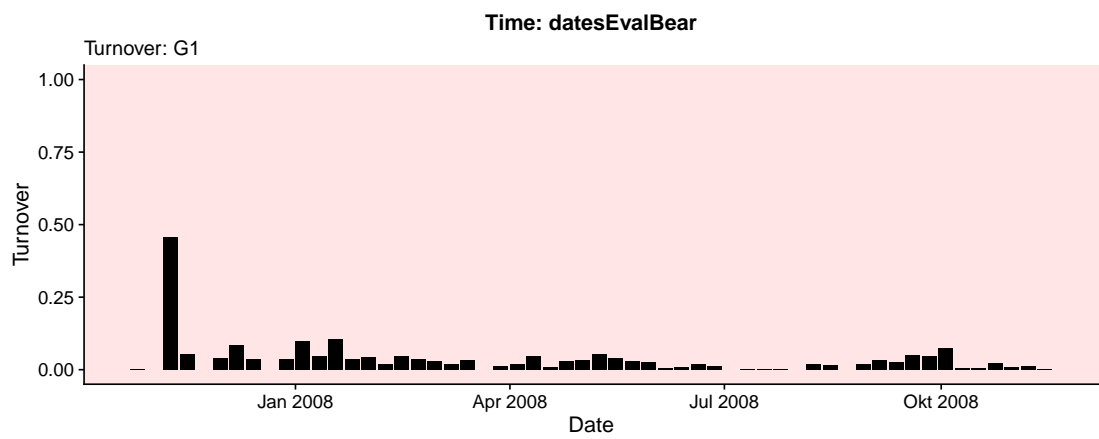
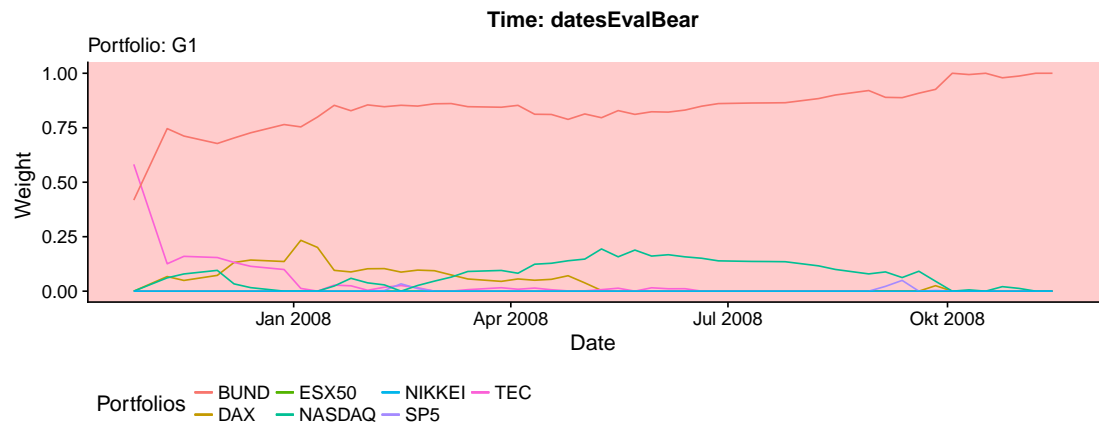


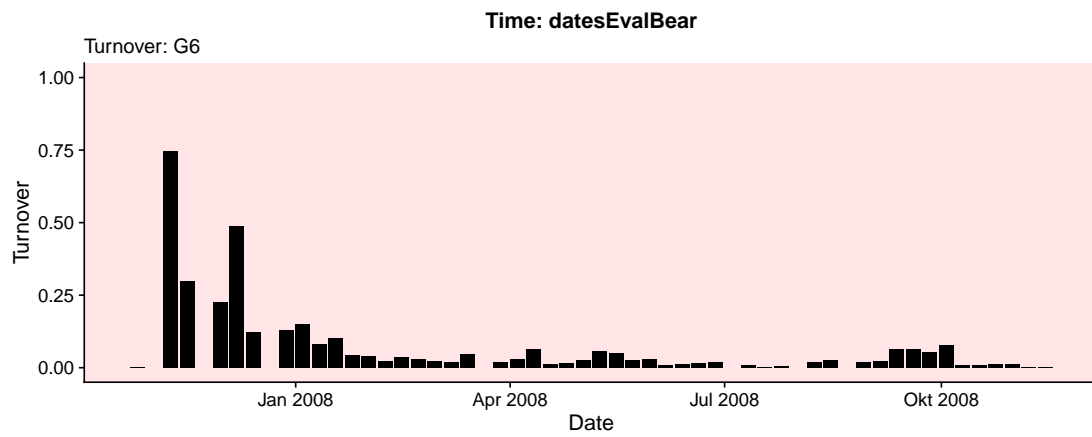
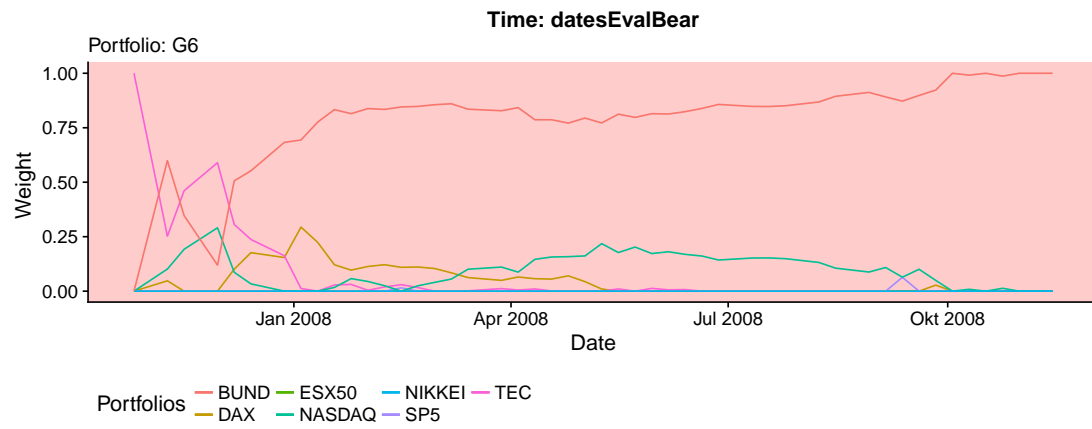
### 3 Results





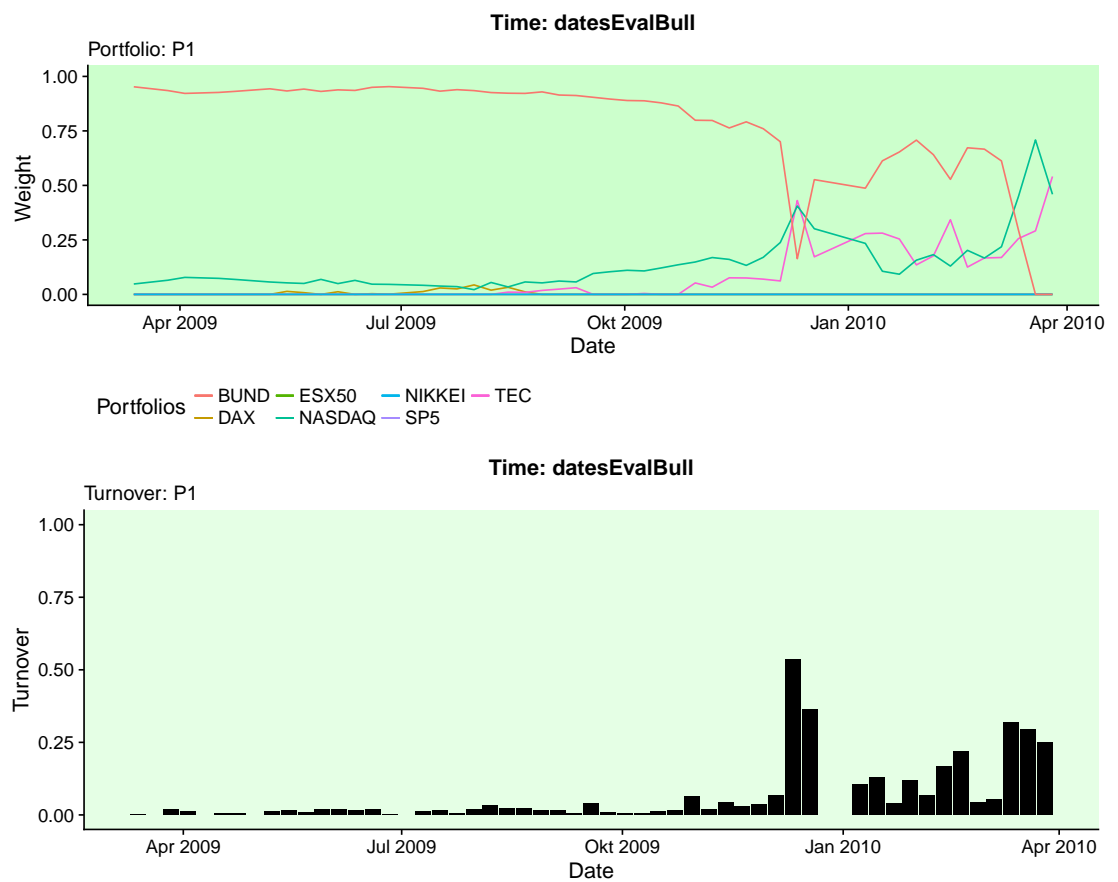
### 3 Results



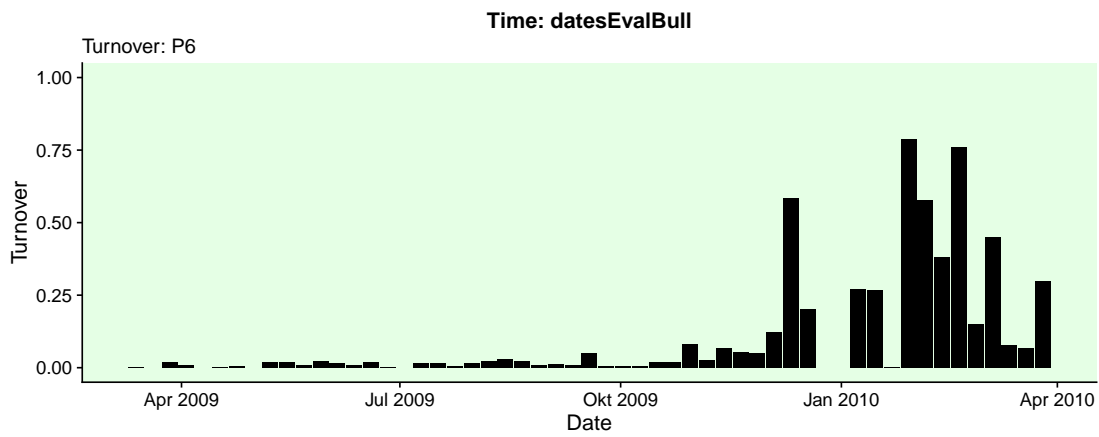
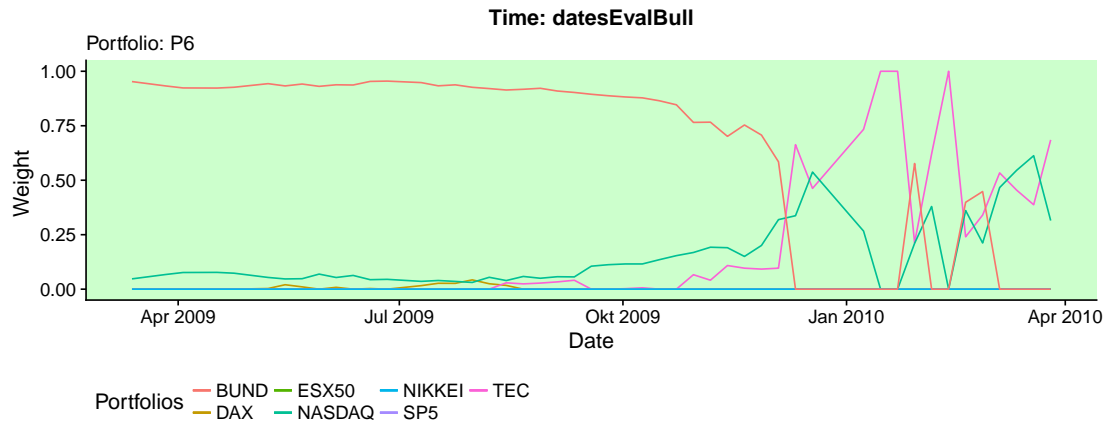


### 3 Results

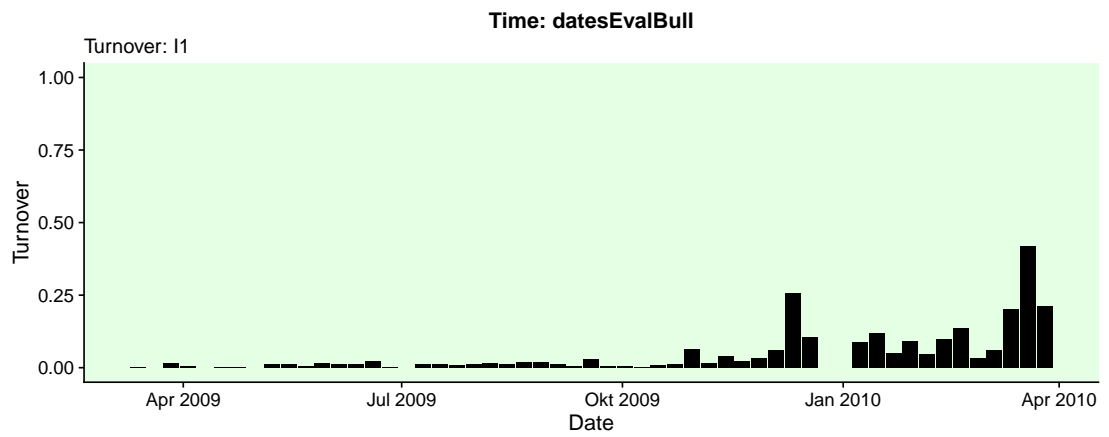
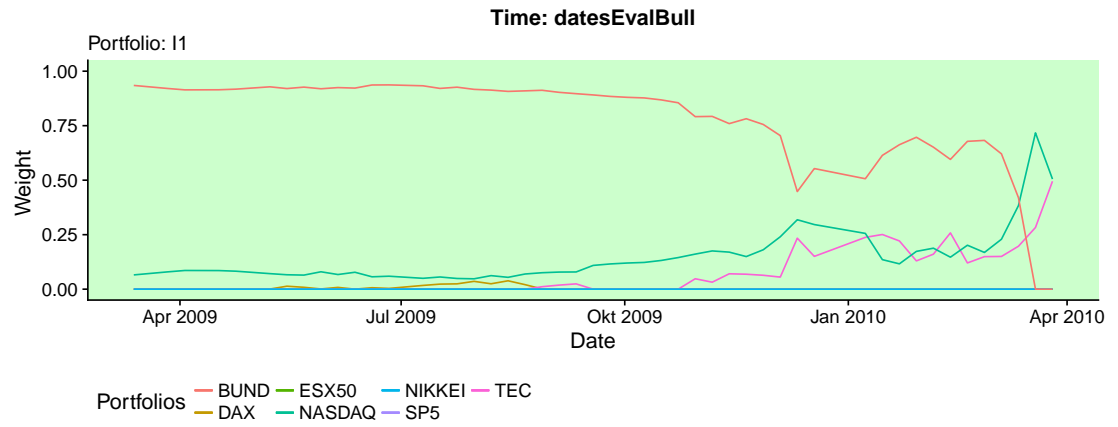
#### Weights-Sentix - datesEvalBull

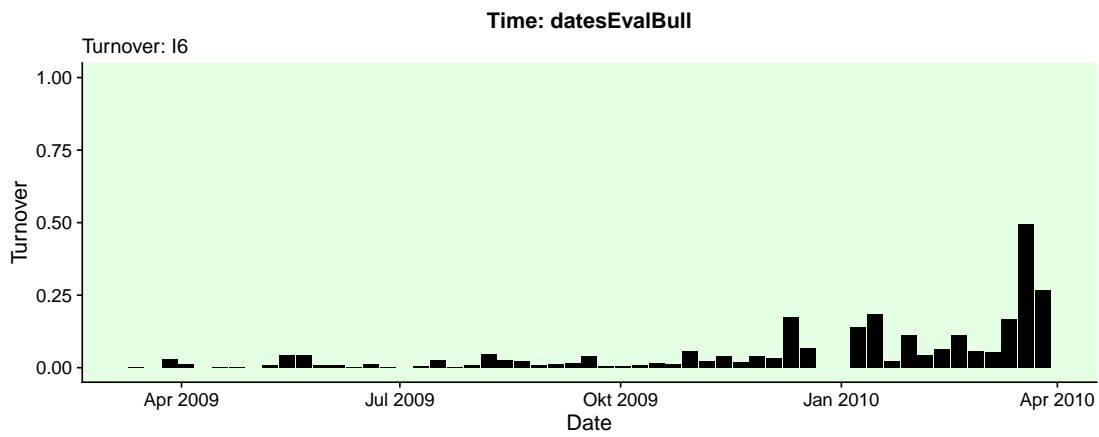
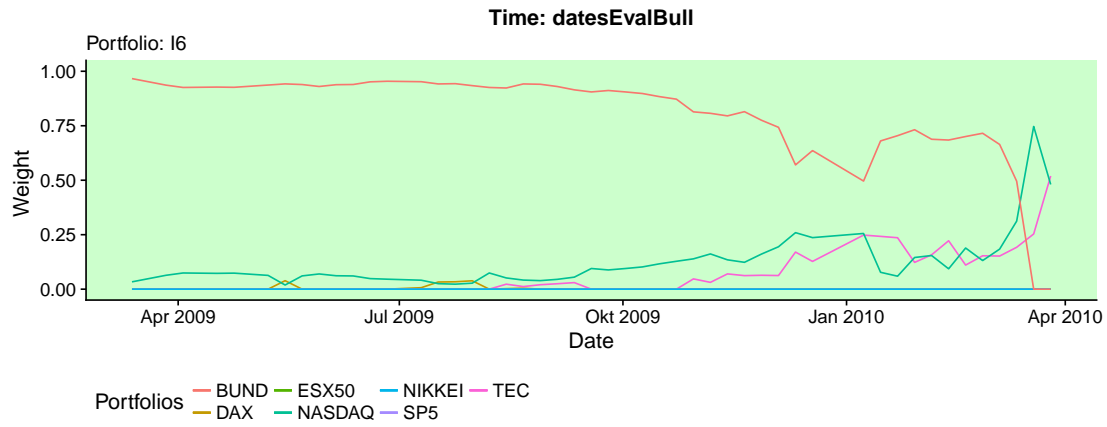




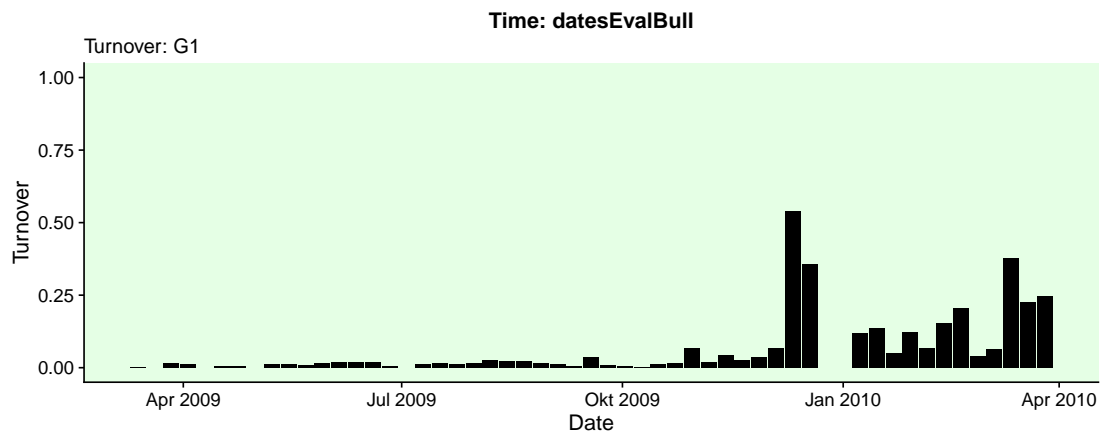
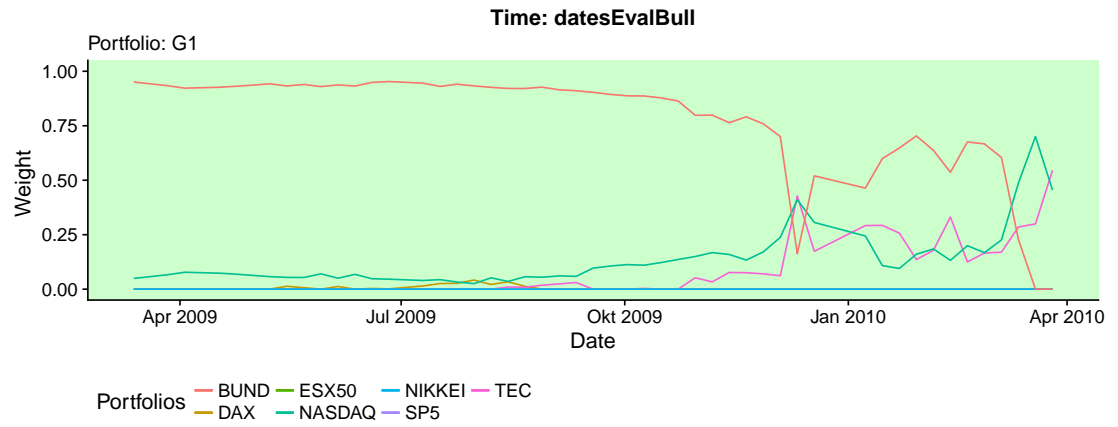


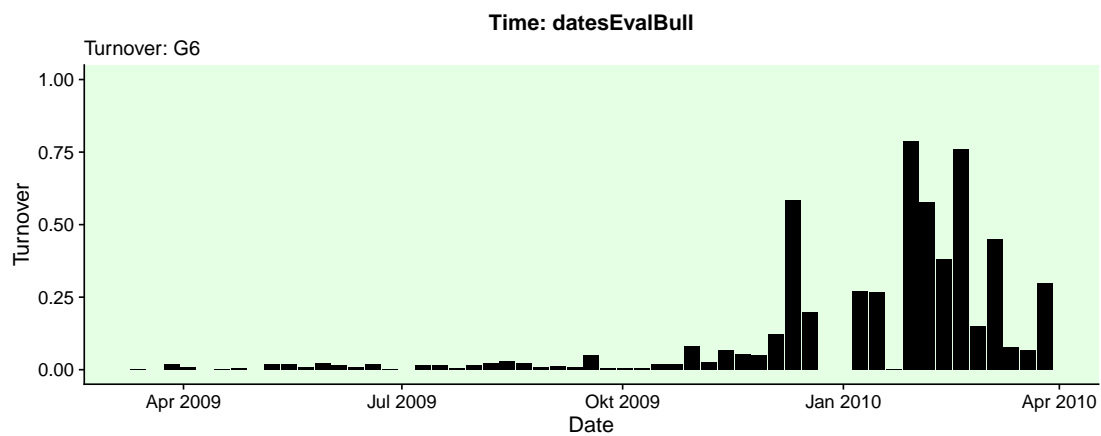
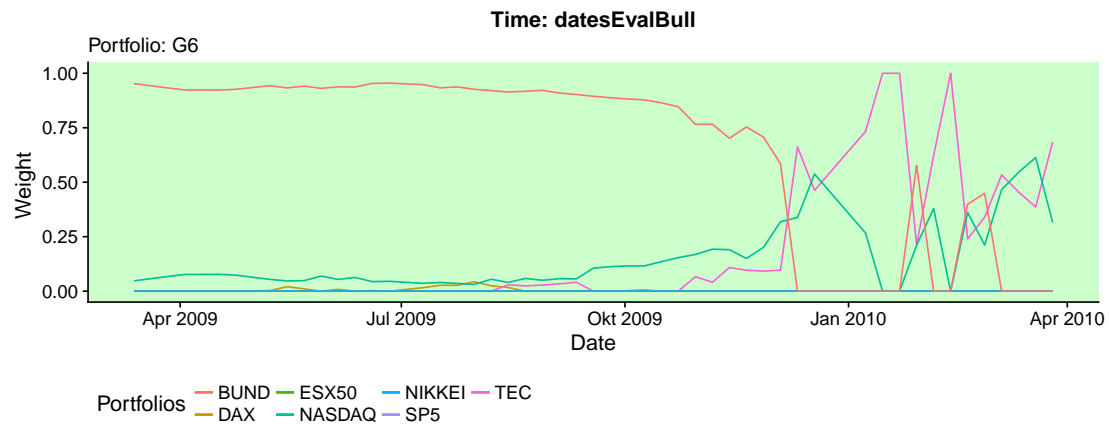
### 3 Results





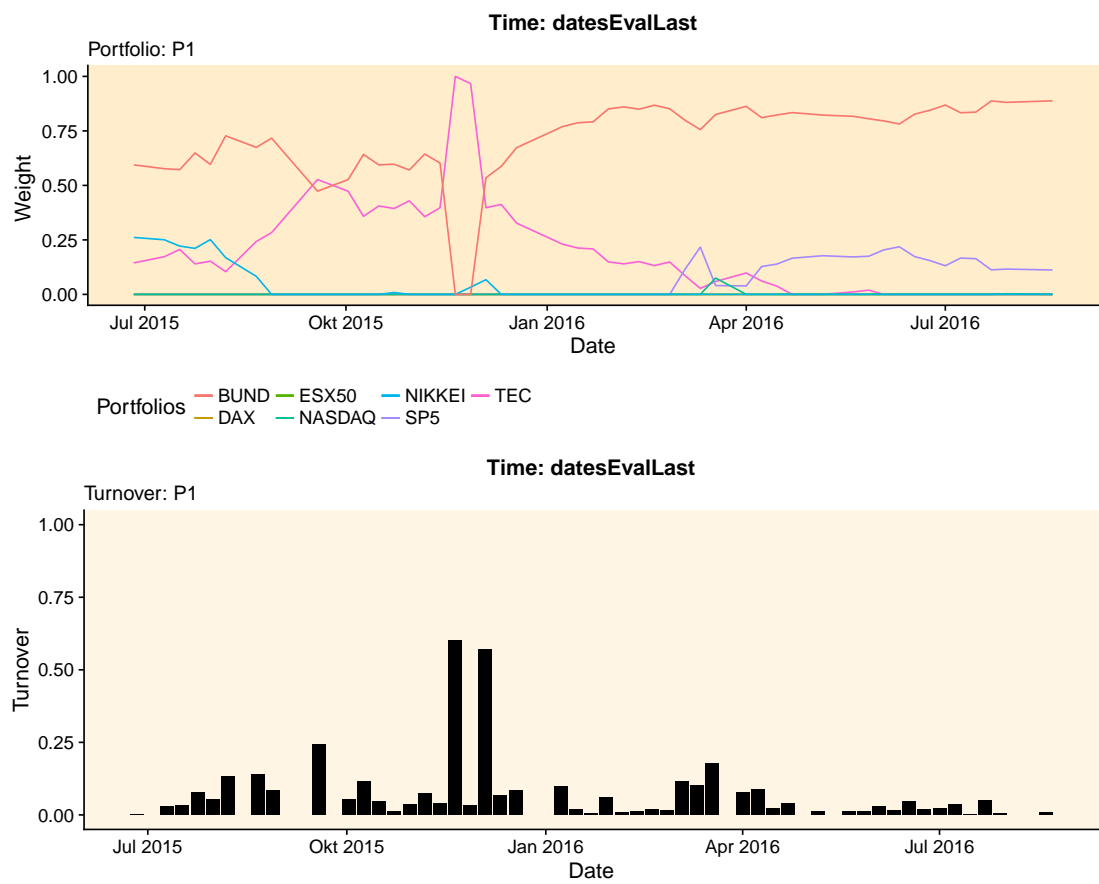
### 3 Results

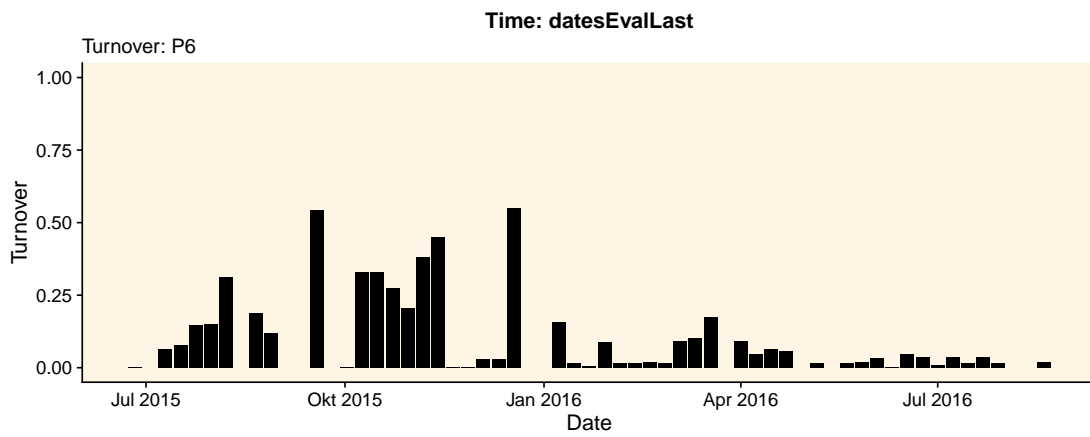
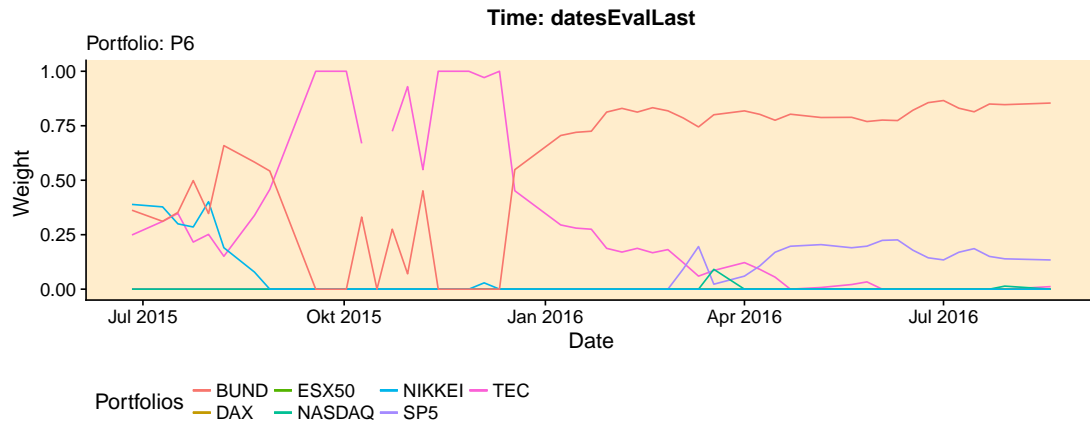




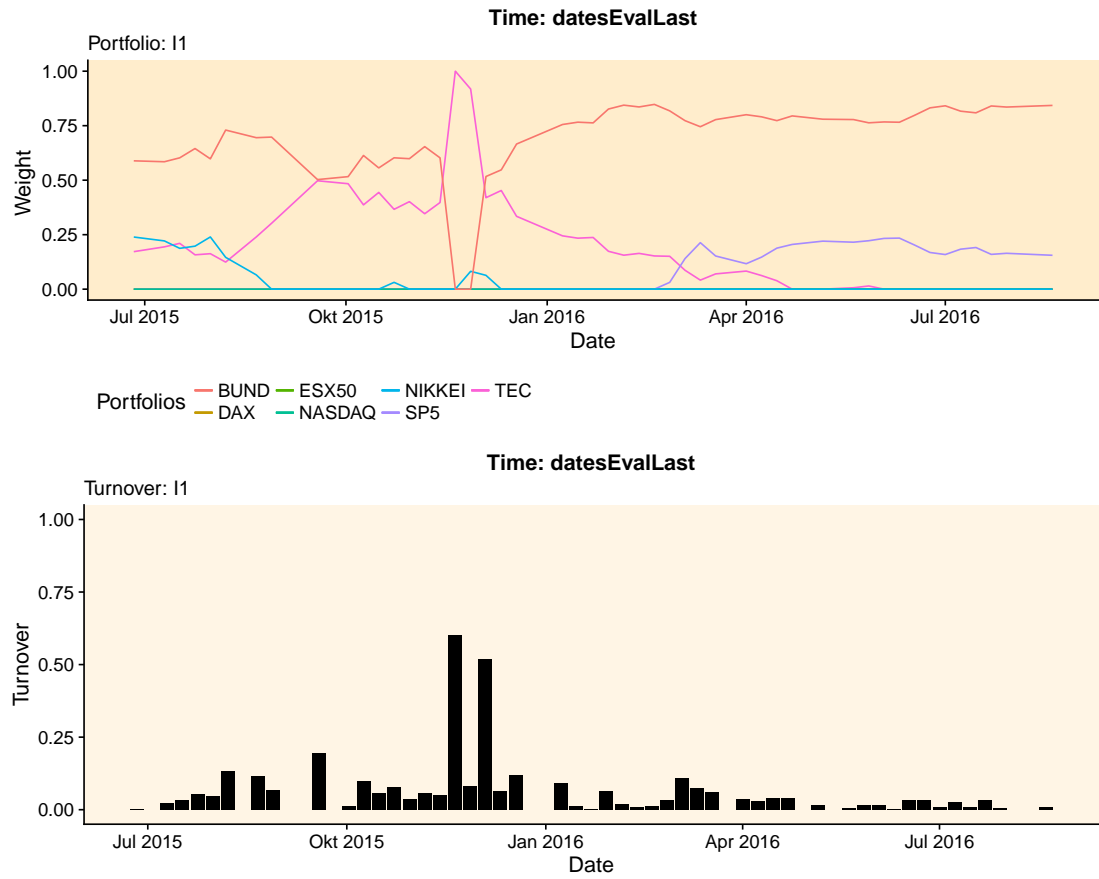
### 3 Results

#### Weights-Sentix - datesEvalLast

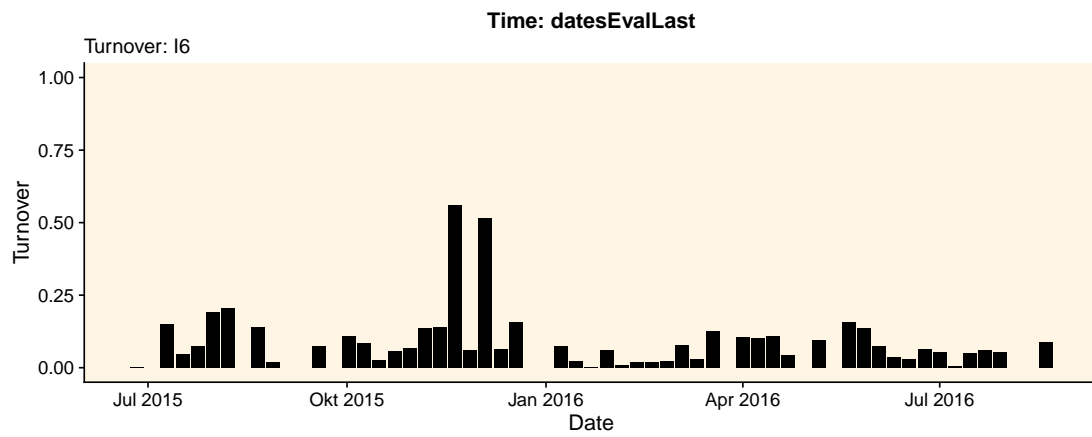
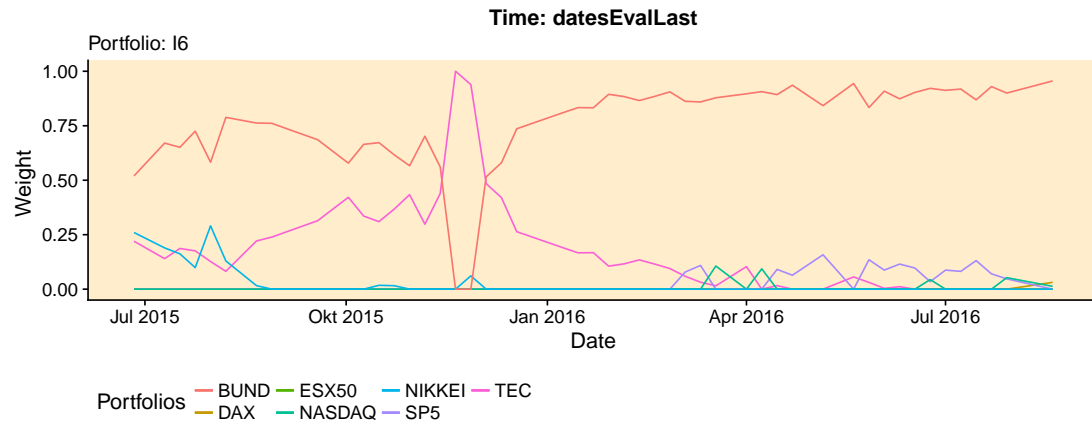




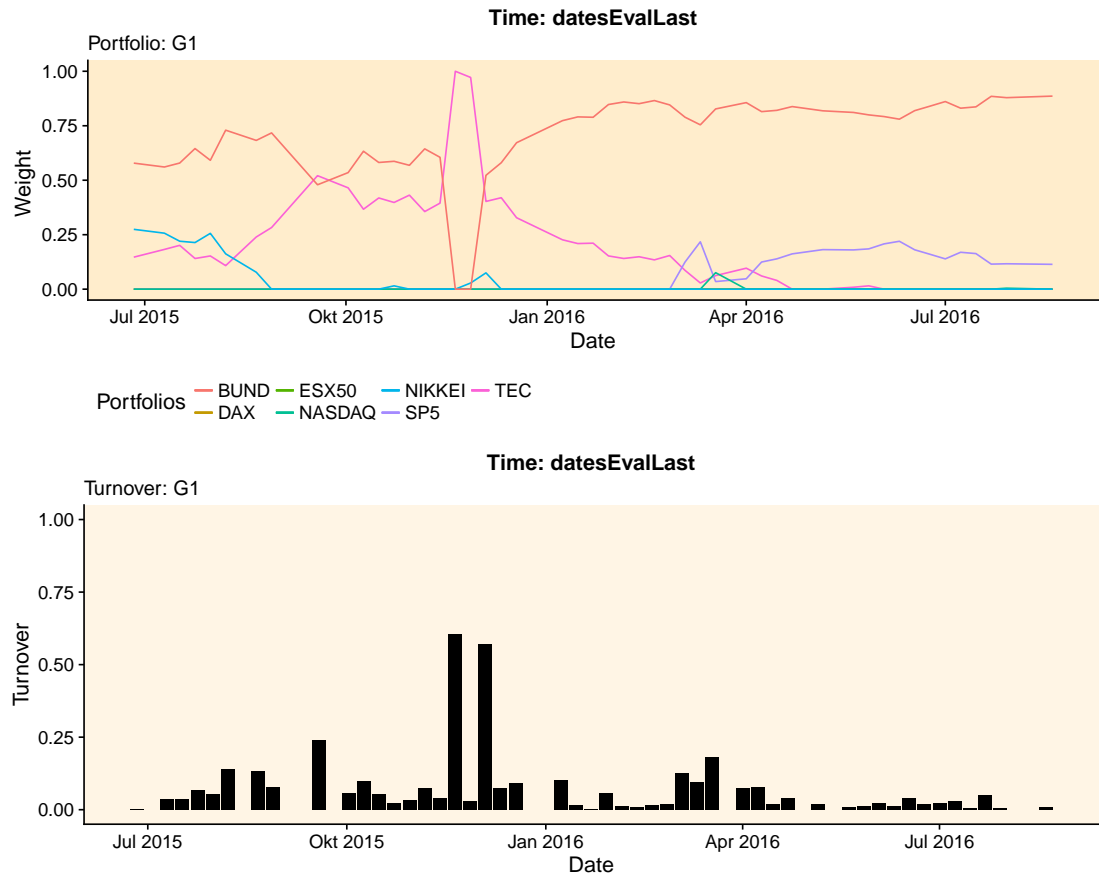
### 3 Results

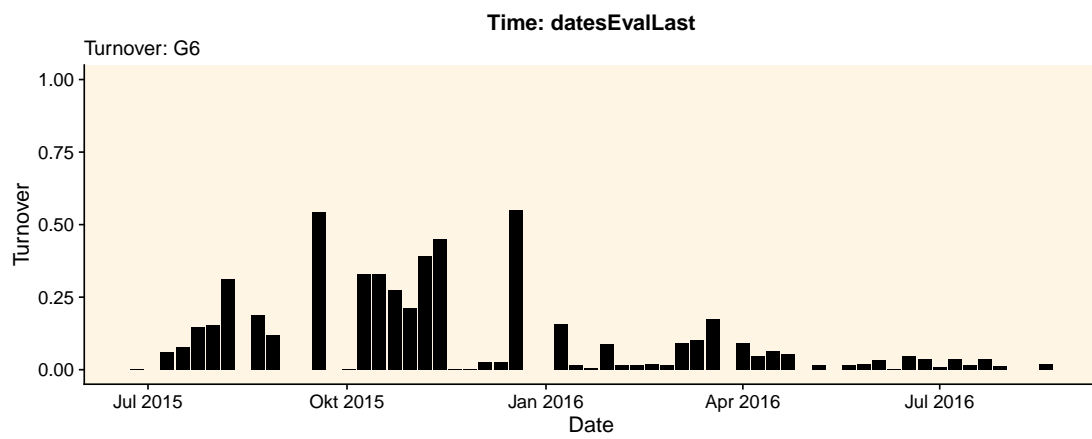
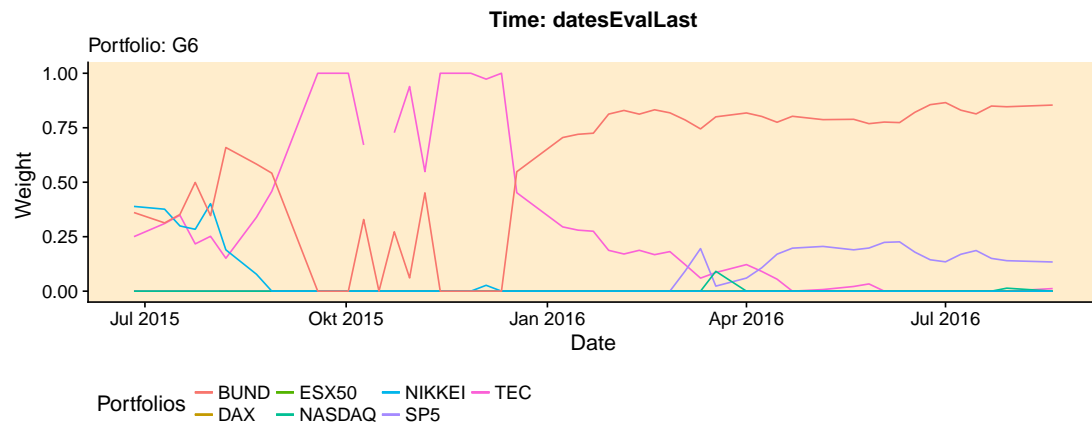






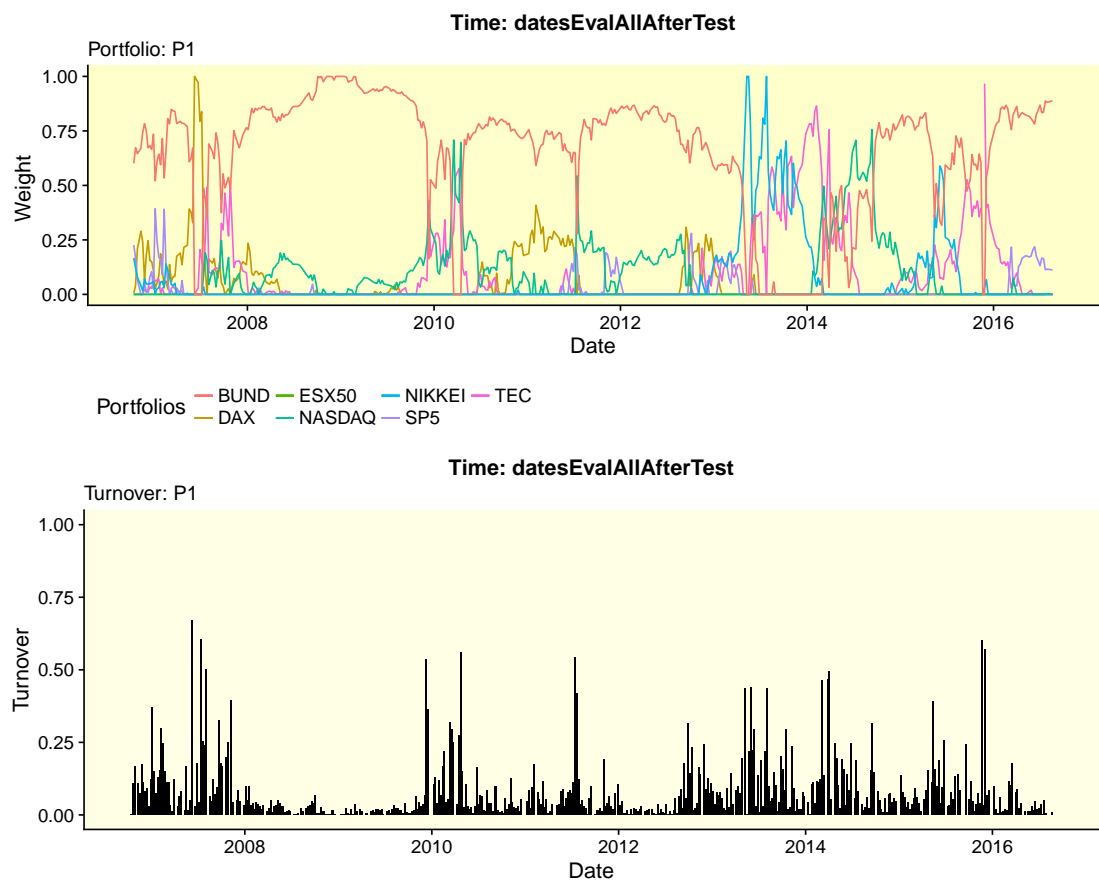
### 3 Results

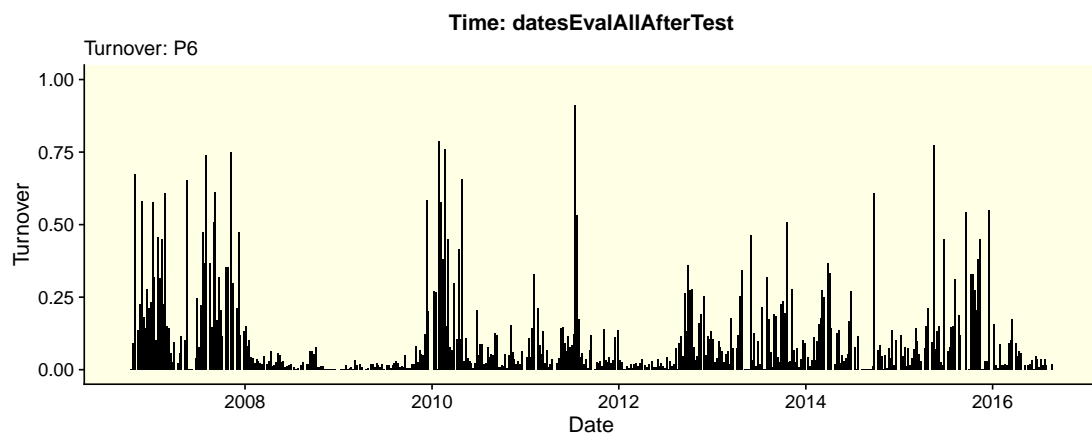
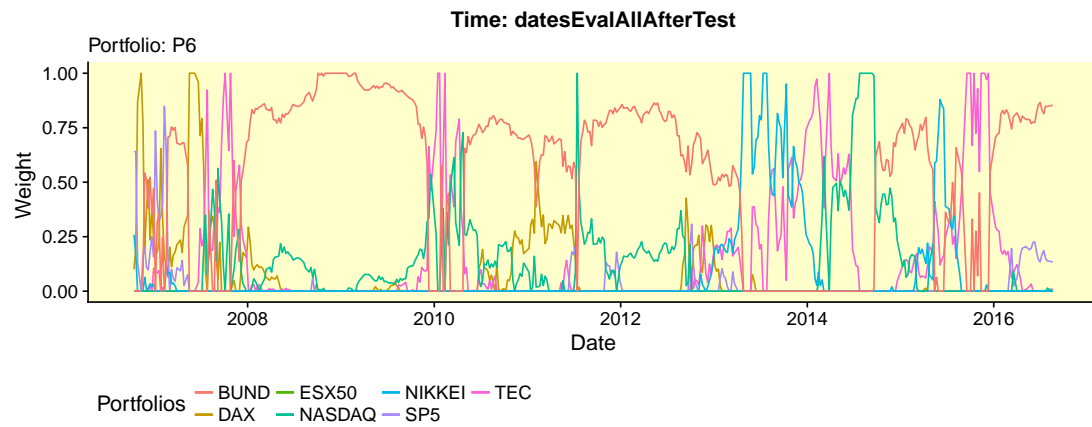




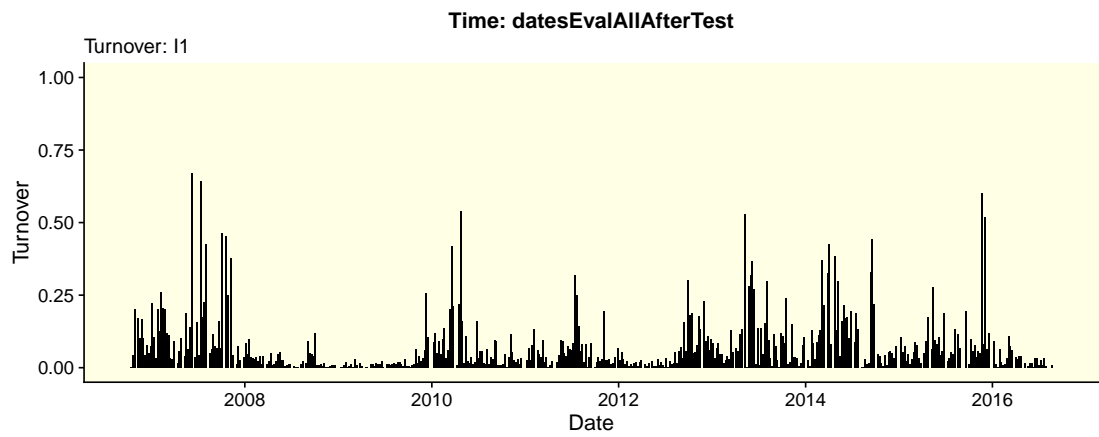
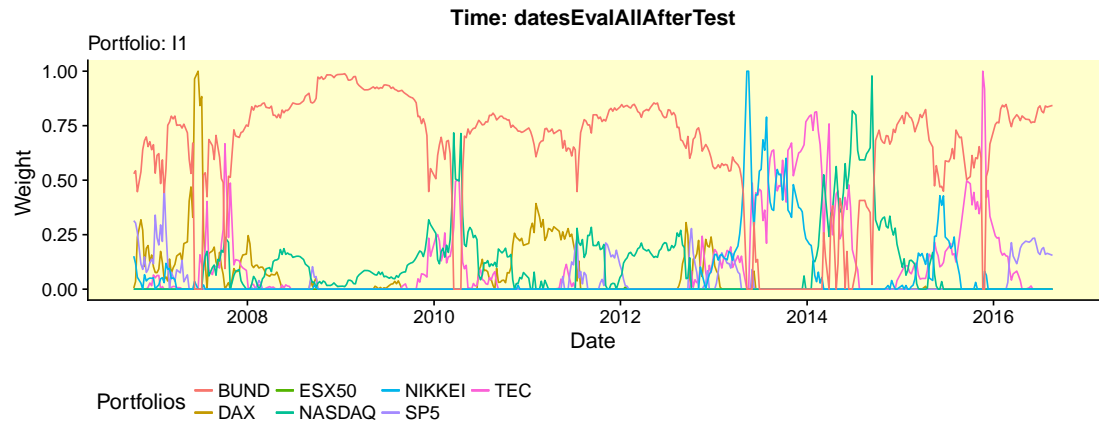
### 3 Results

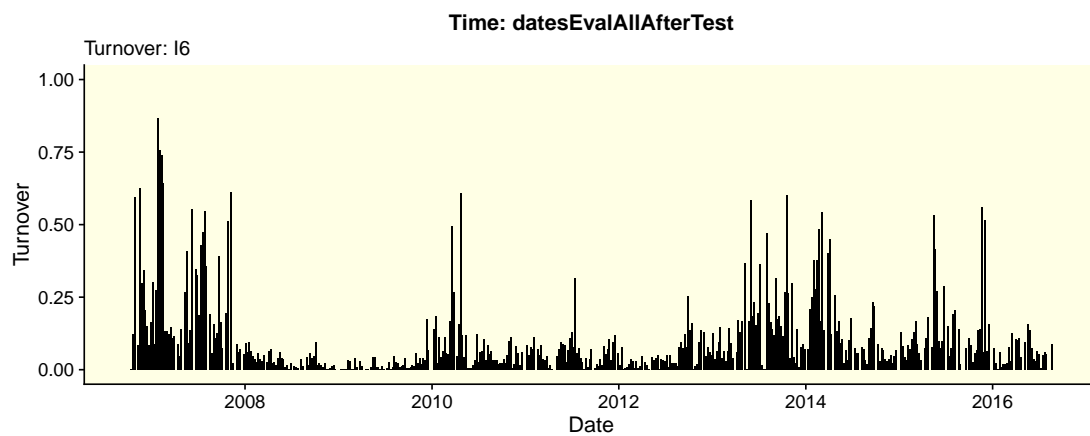
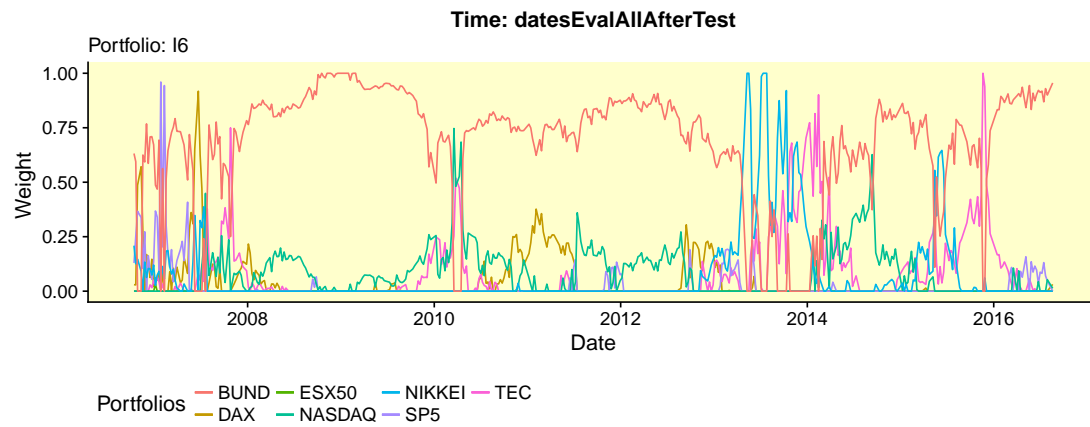
#### Weights-Sentix - datesEvalAllAfterTest



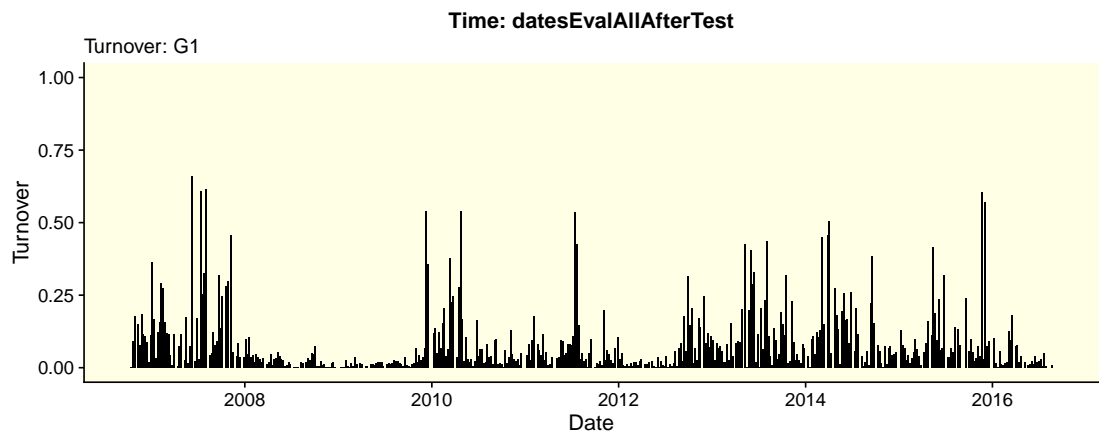
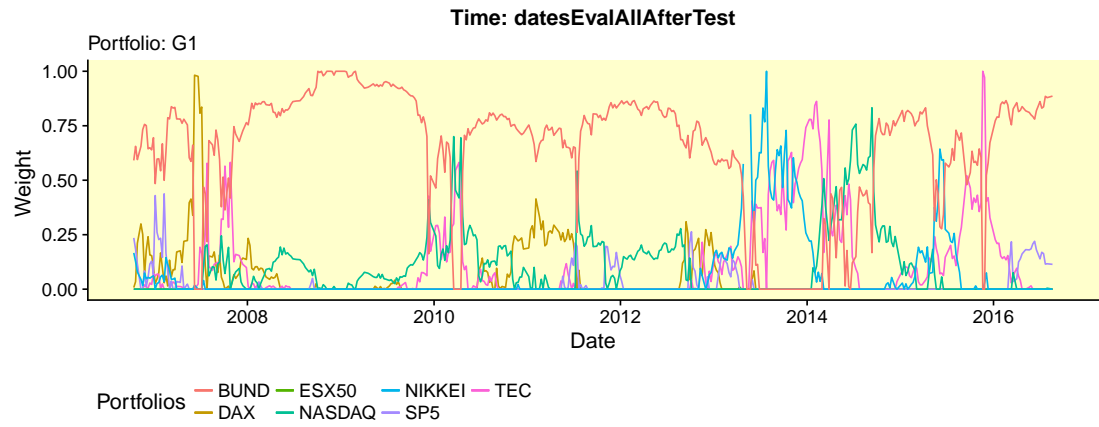


### 3 Results

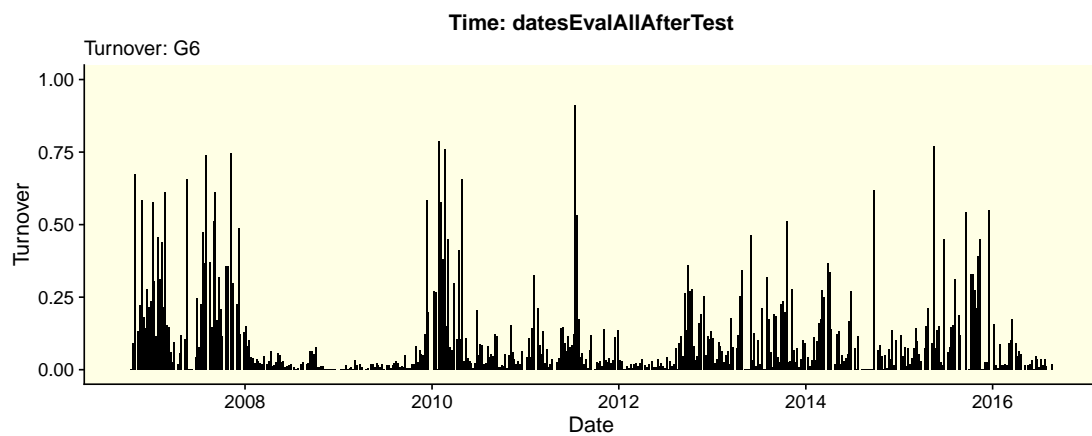
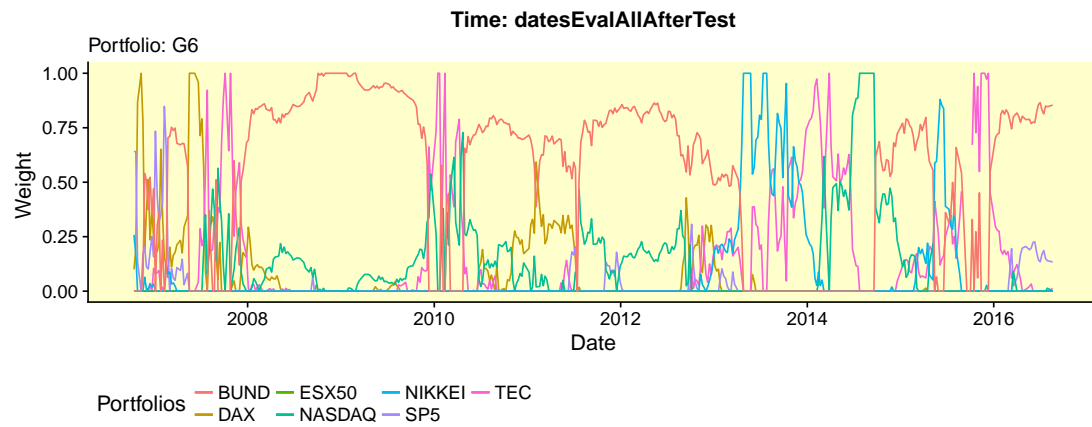




### 3 Results



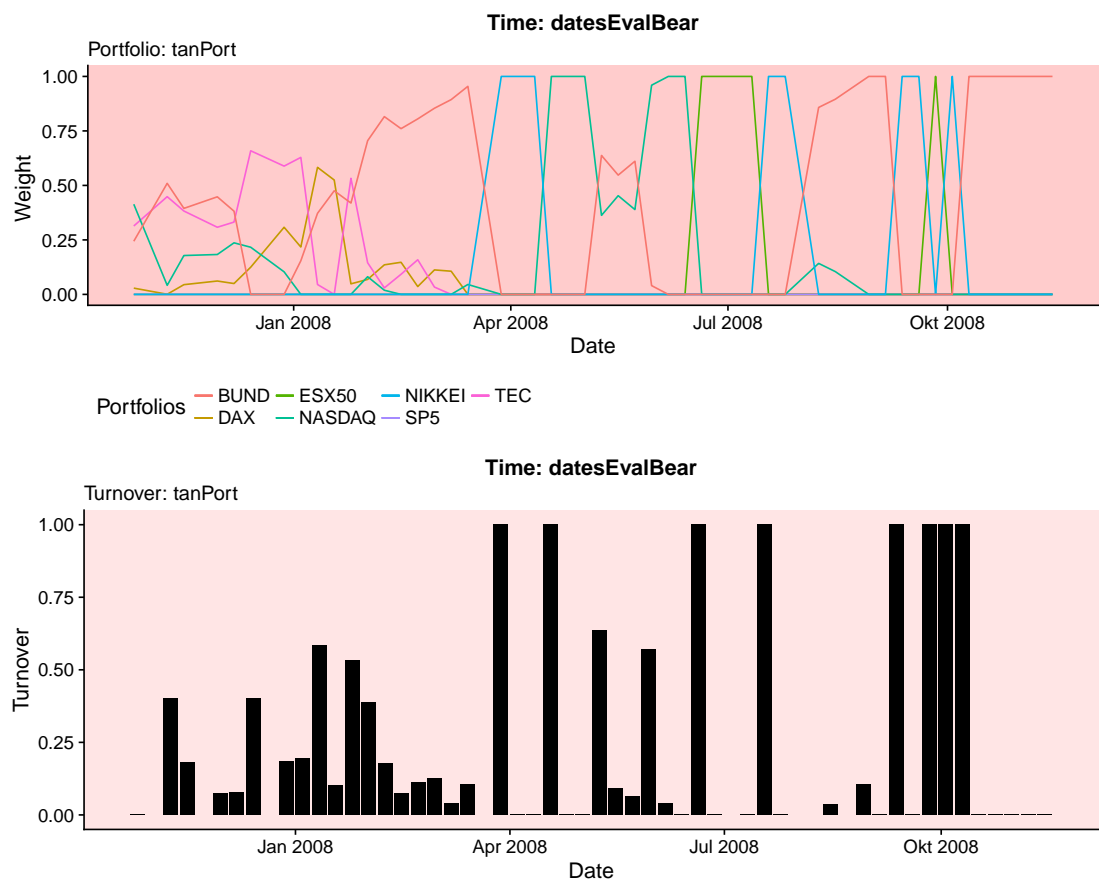


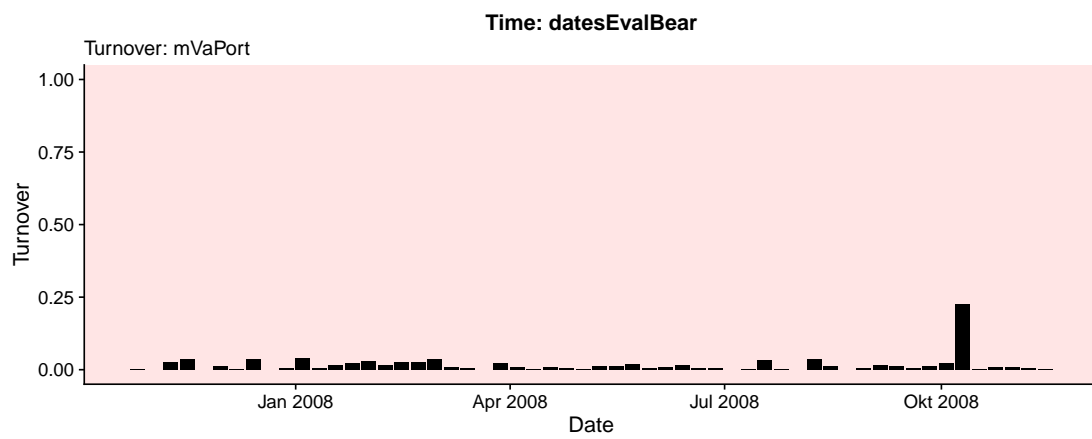
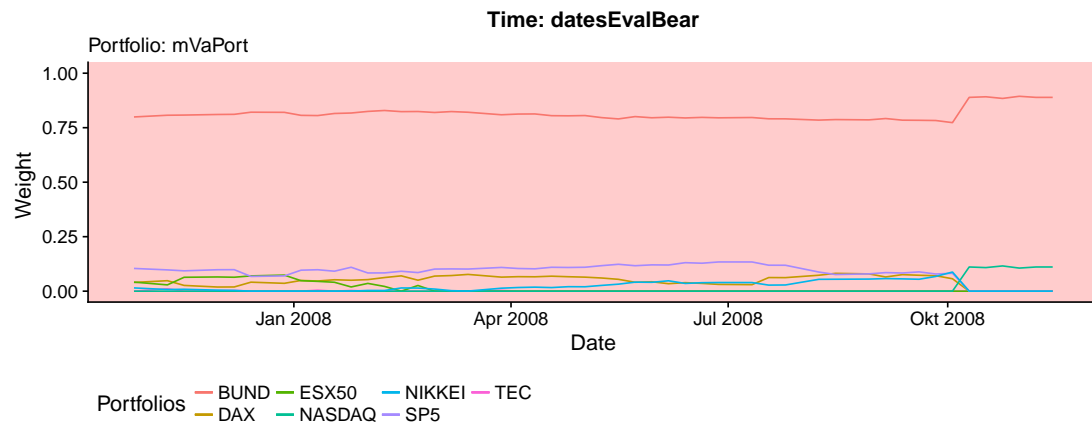


### 3 Results

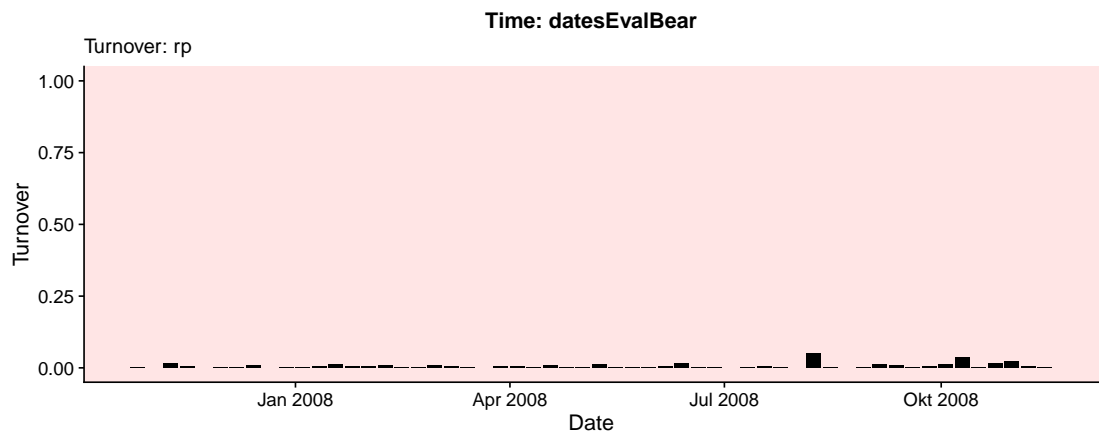
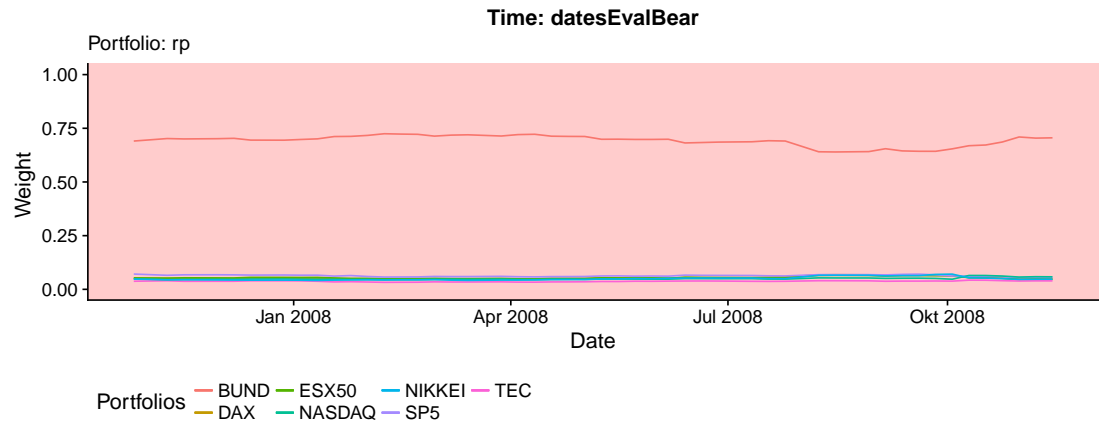
#### 3.4.2 Weights-Classic

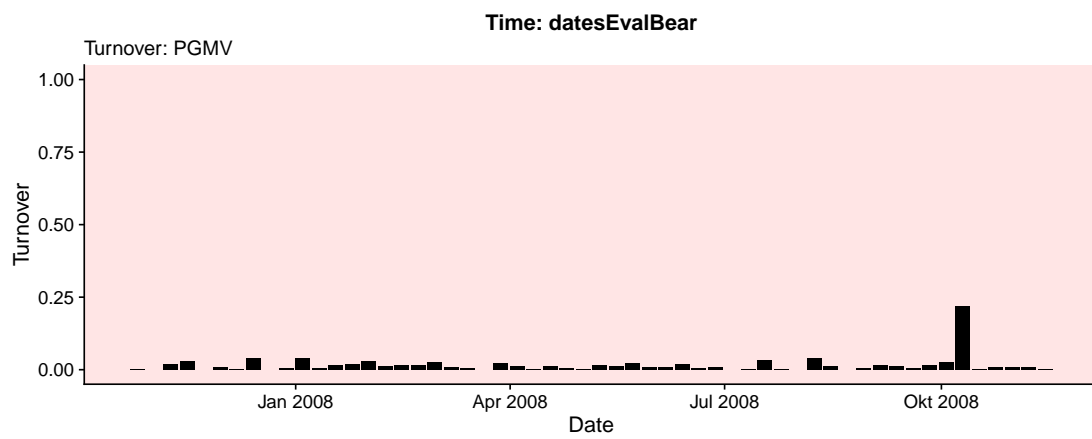
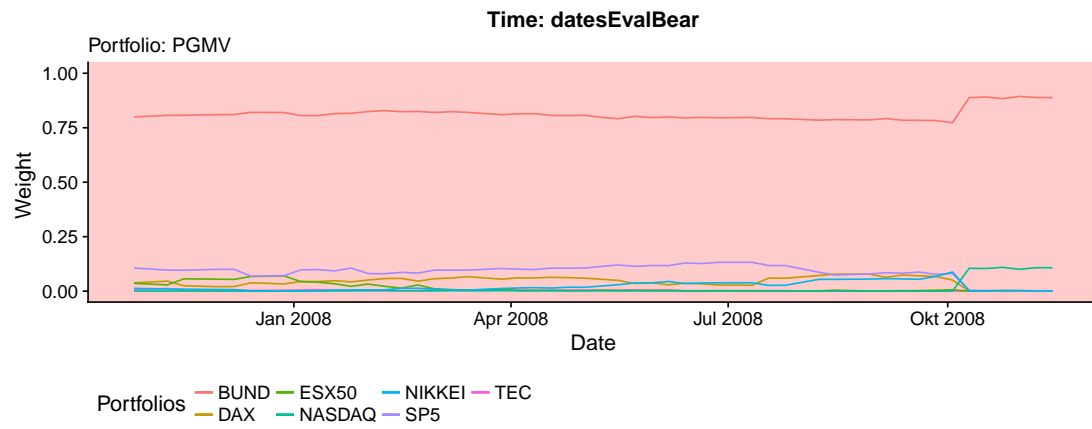
##### Weights-Classic - datesEvalBear



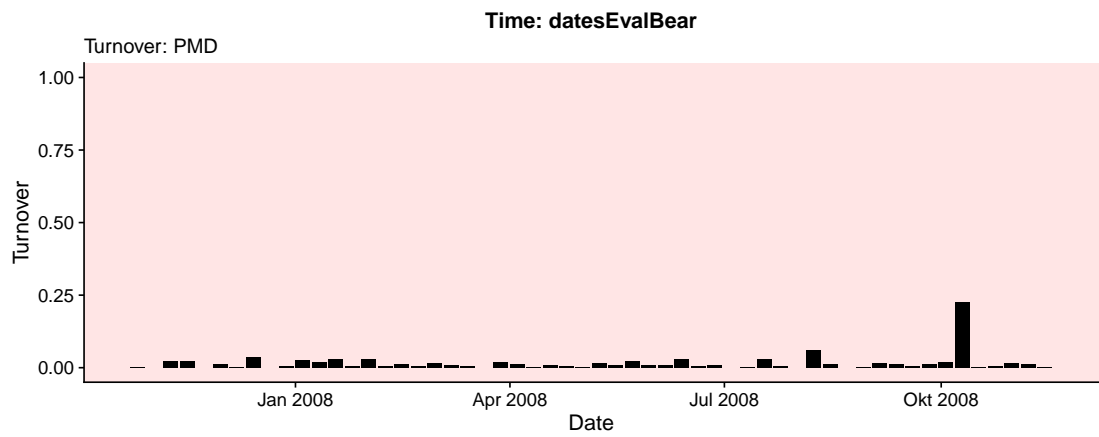
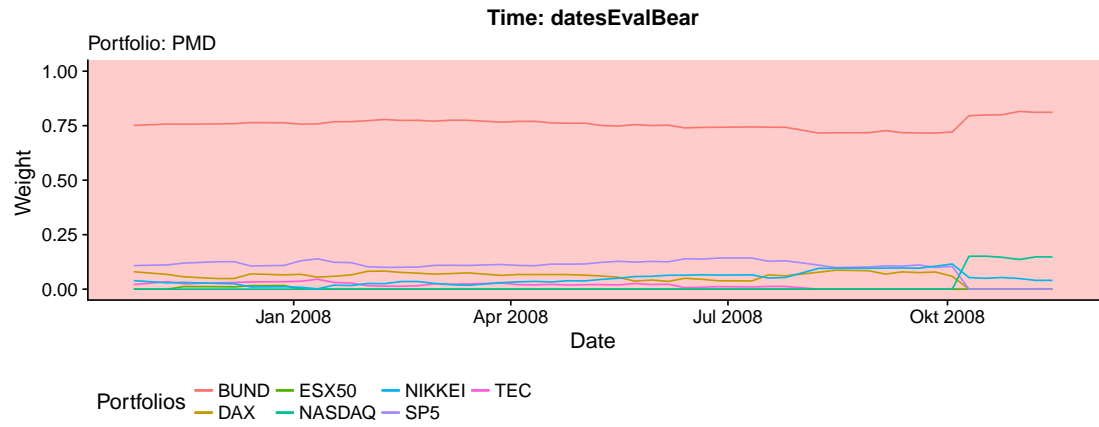


### 3 Results

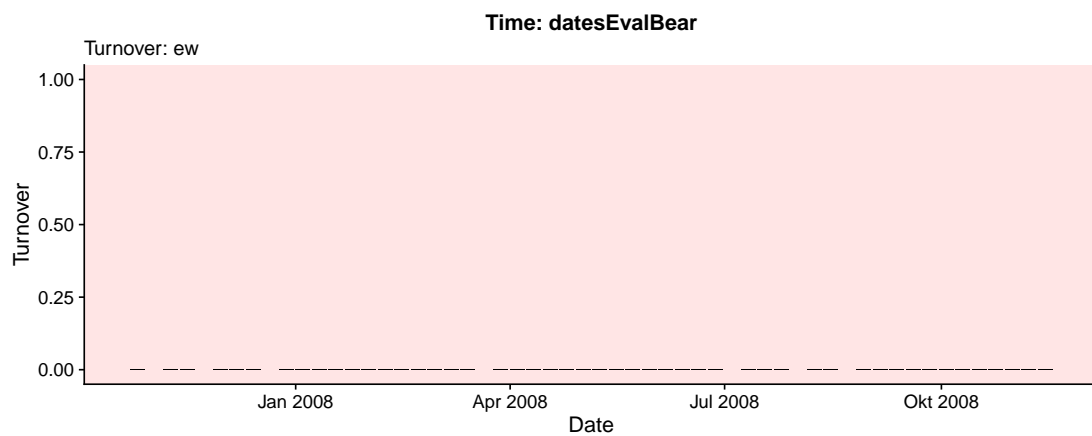
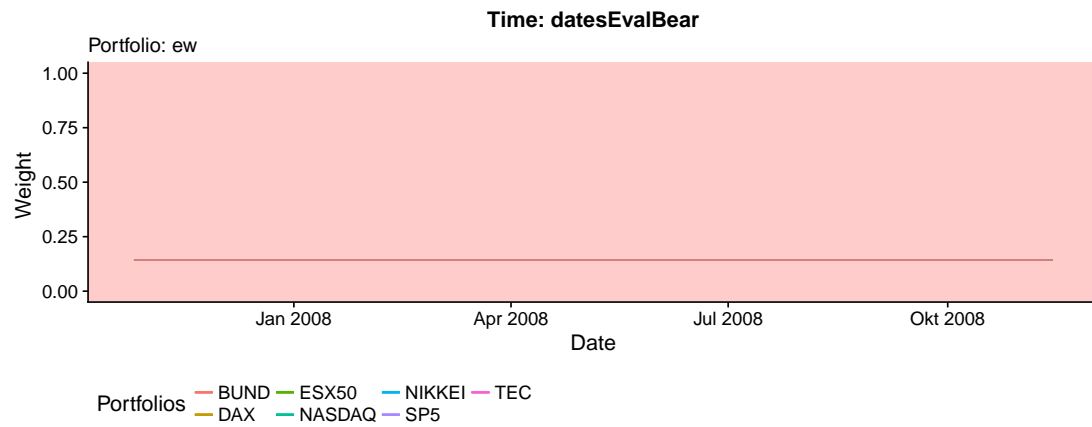




### 3 Results

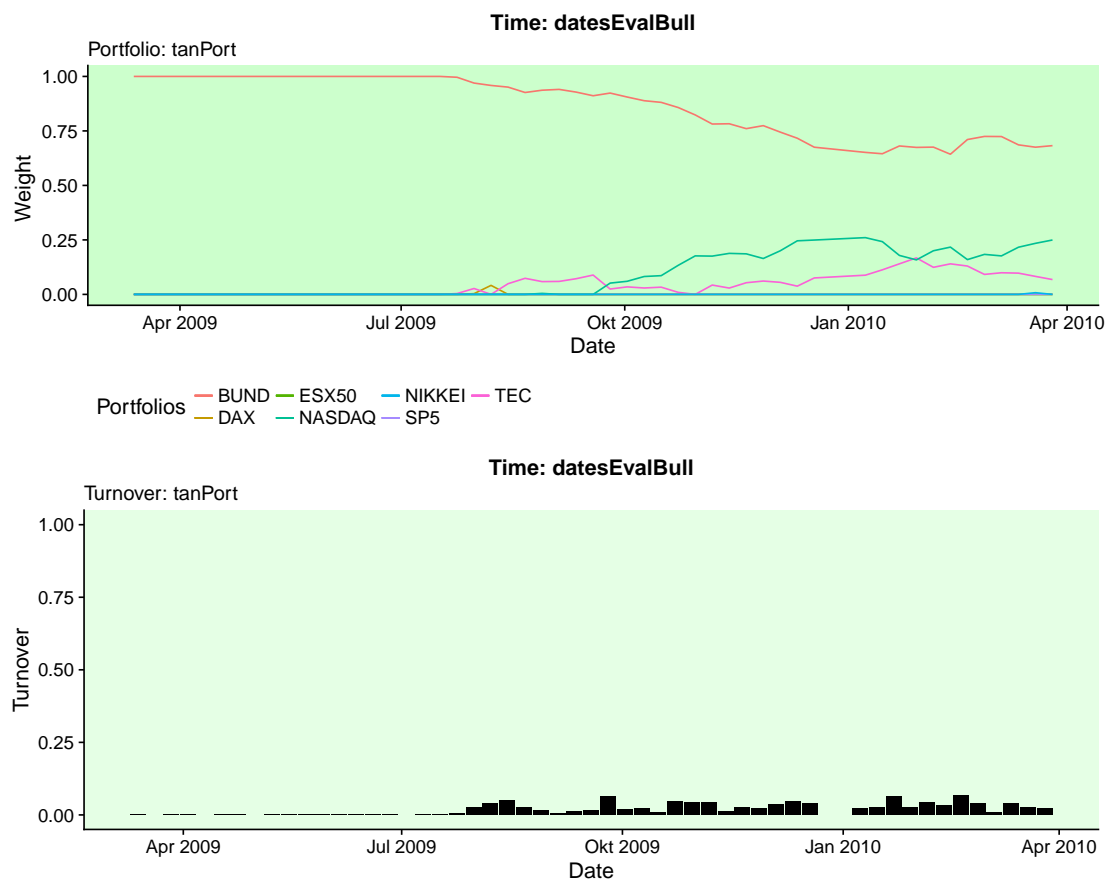


### 3.4 Weights

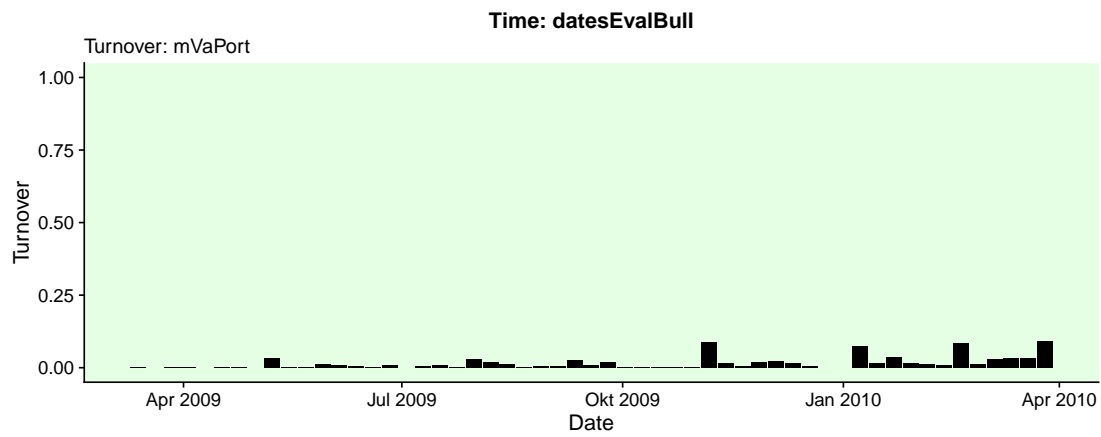
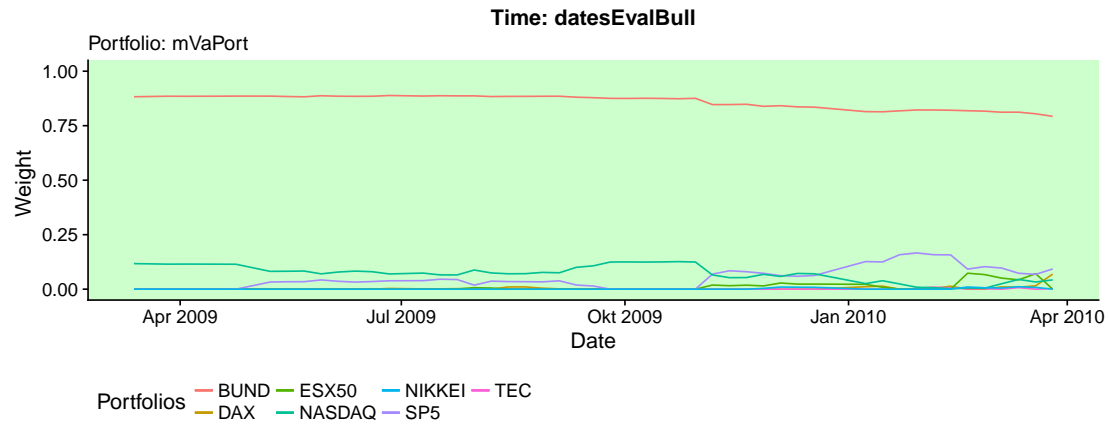


### 3 Results

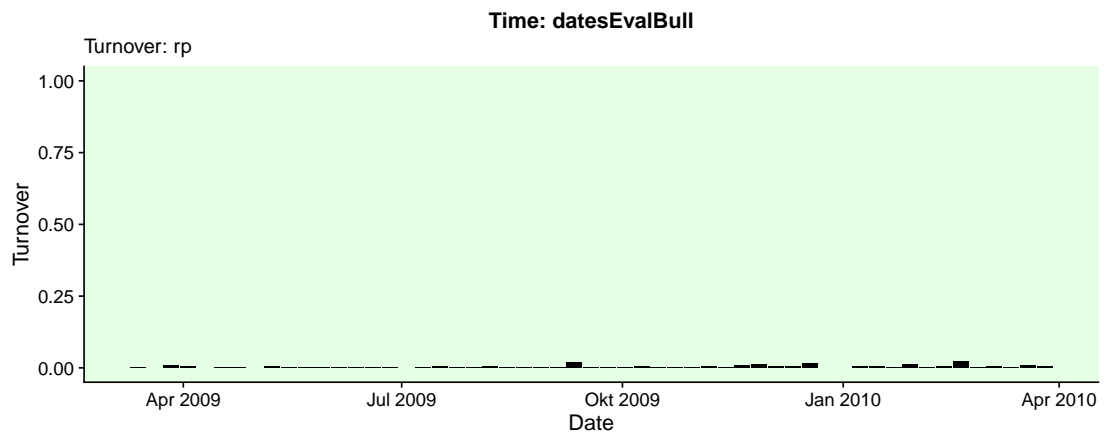
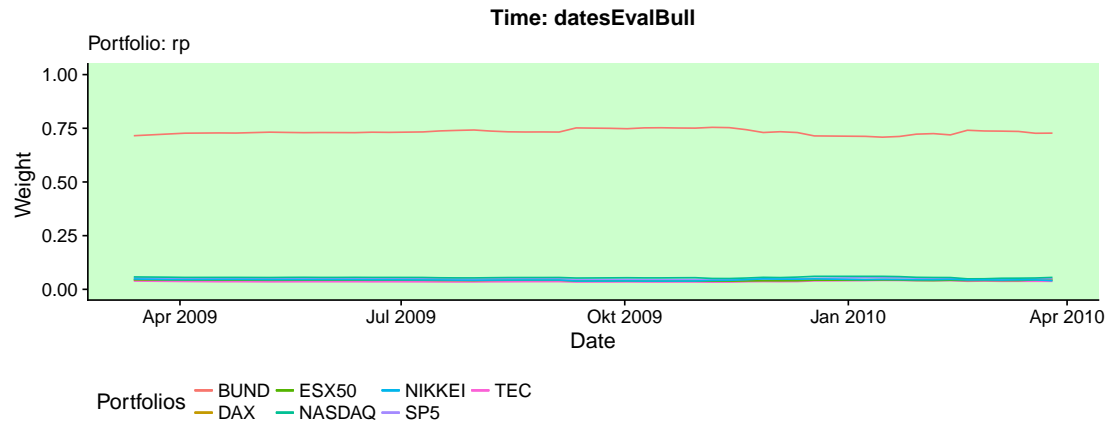
#### Weights-Classic - datesEvalBull

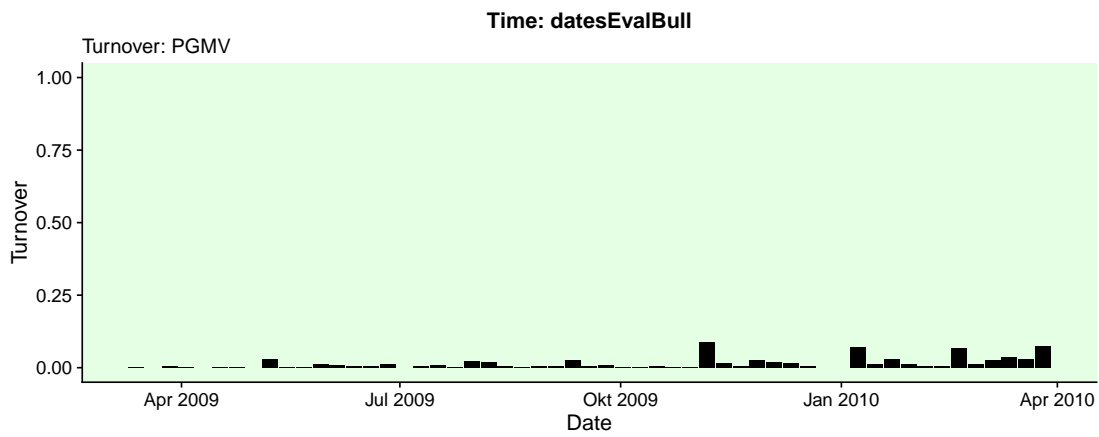
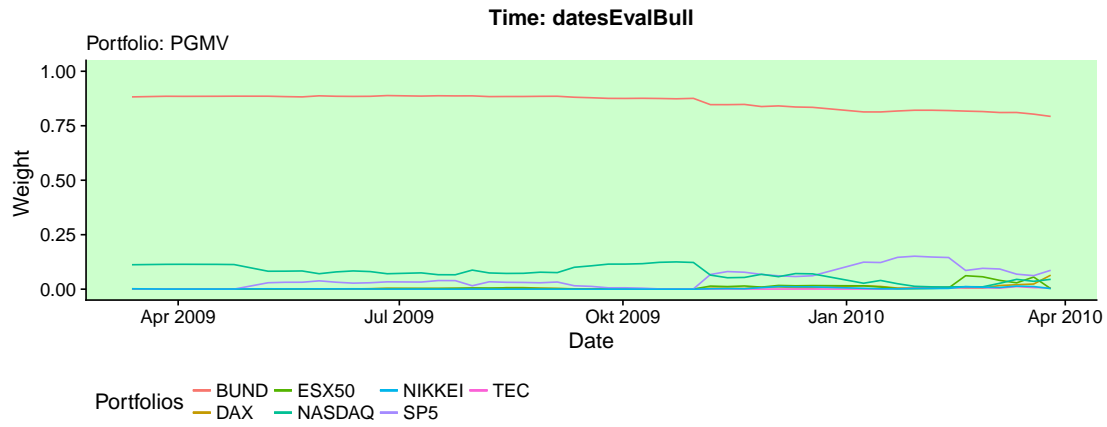




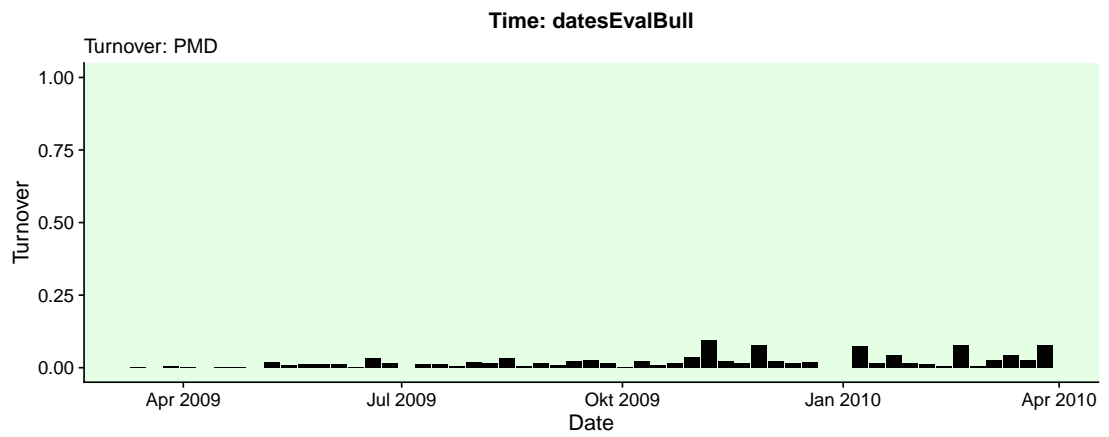
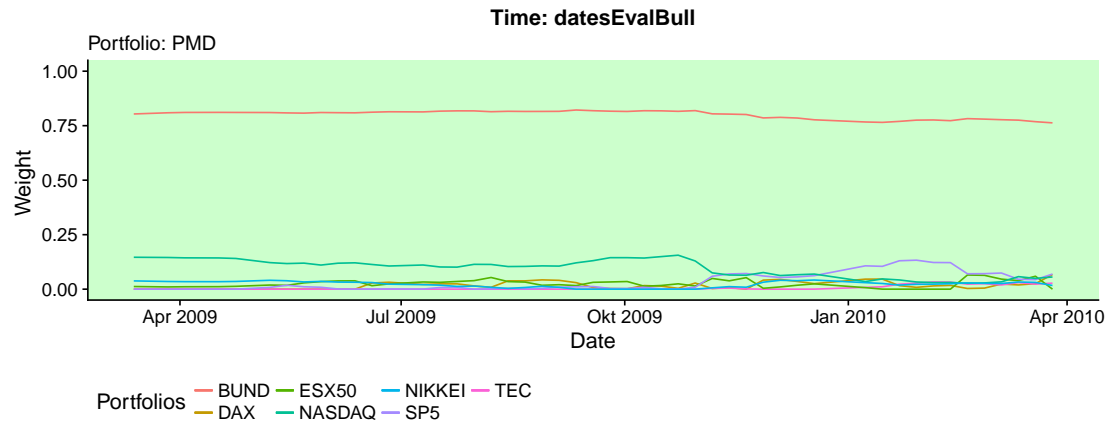


### 3 Results

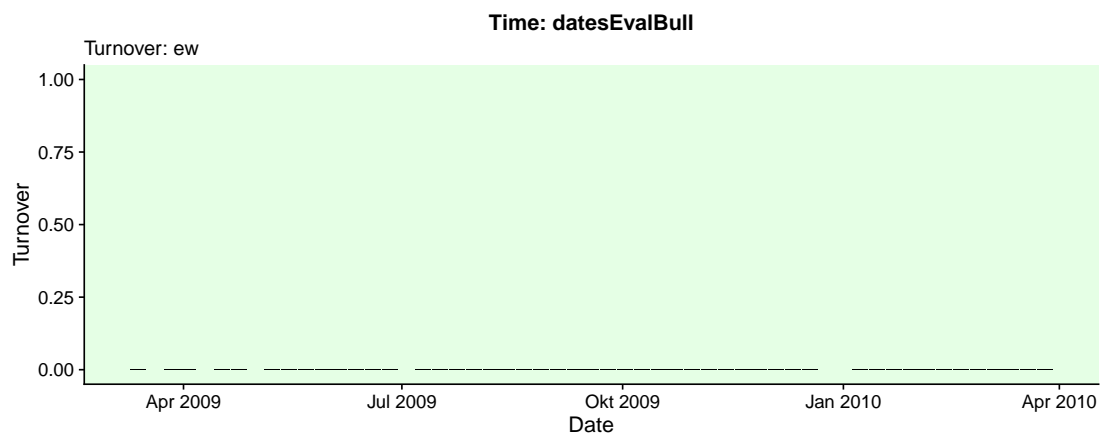
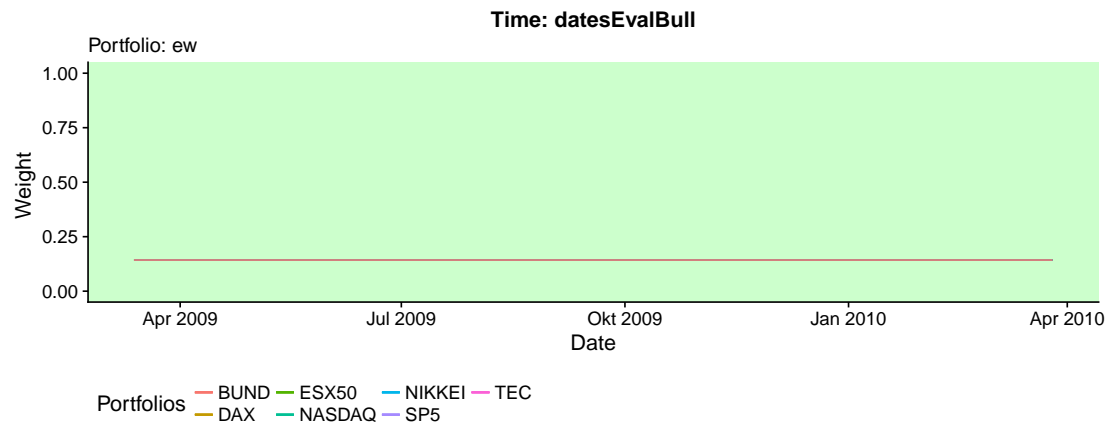




### 3 Results

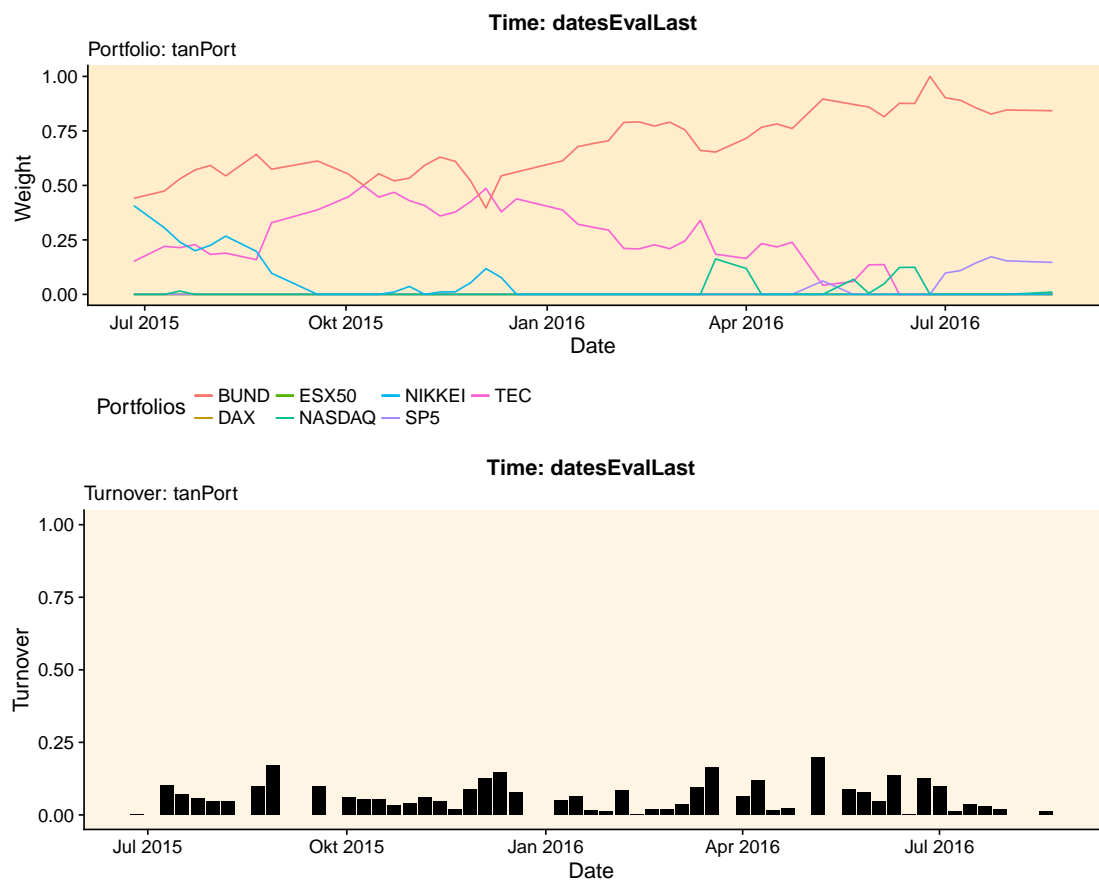


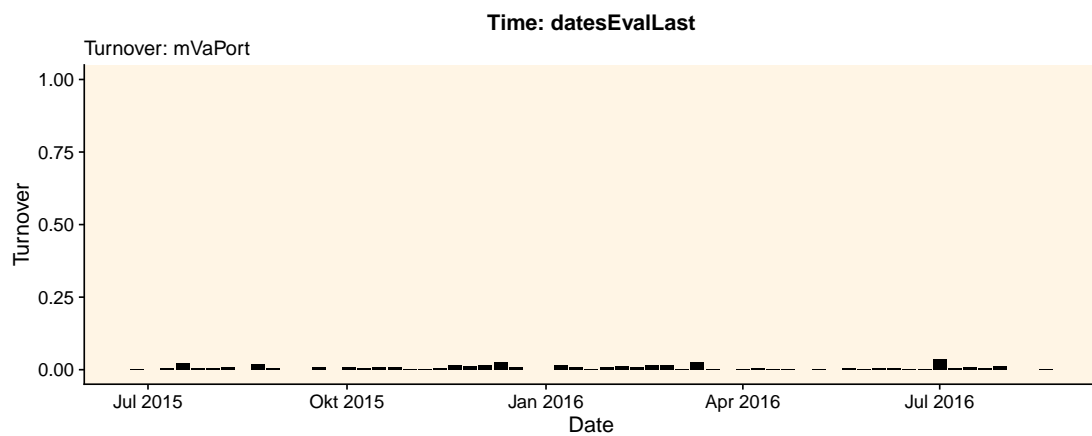
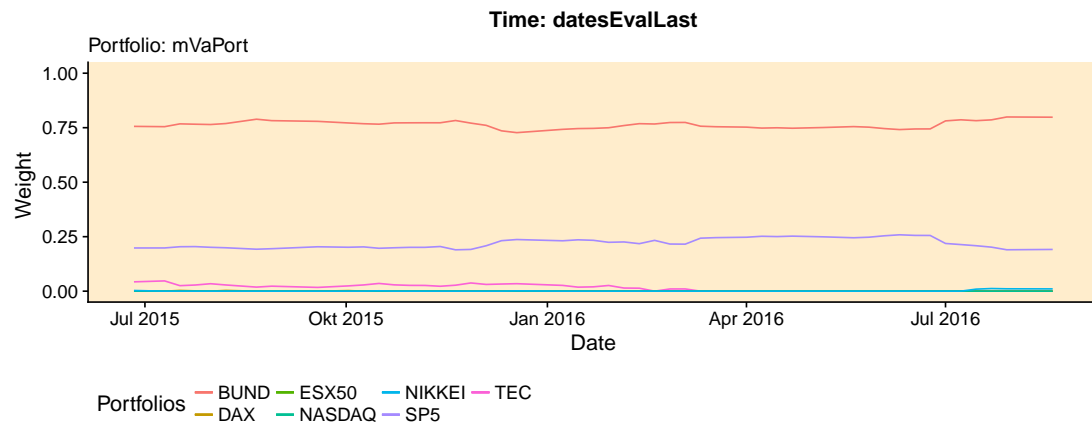
### 3.4 Weights



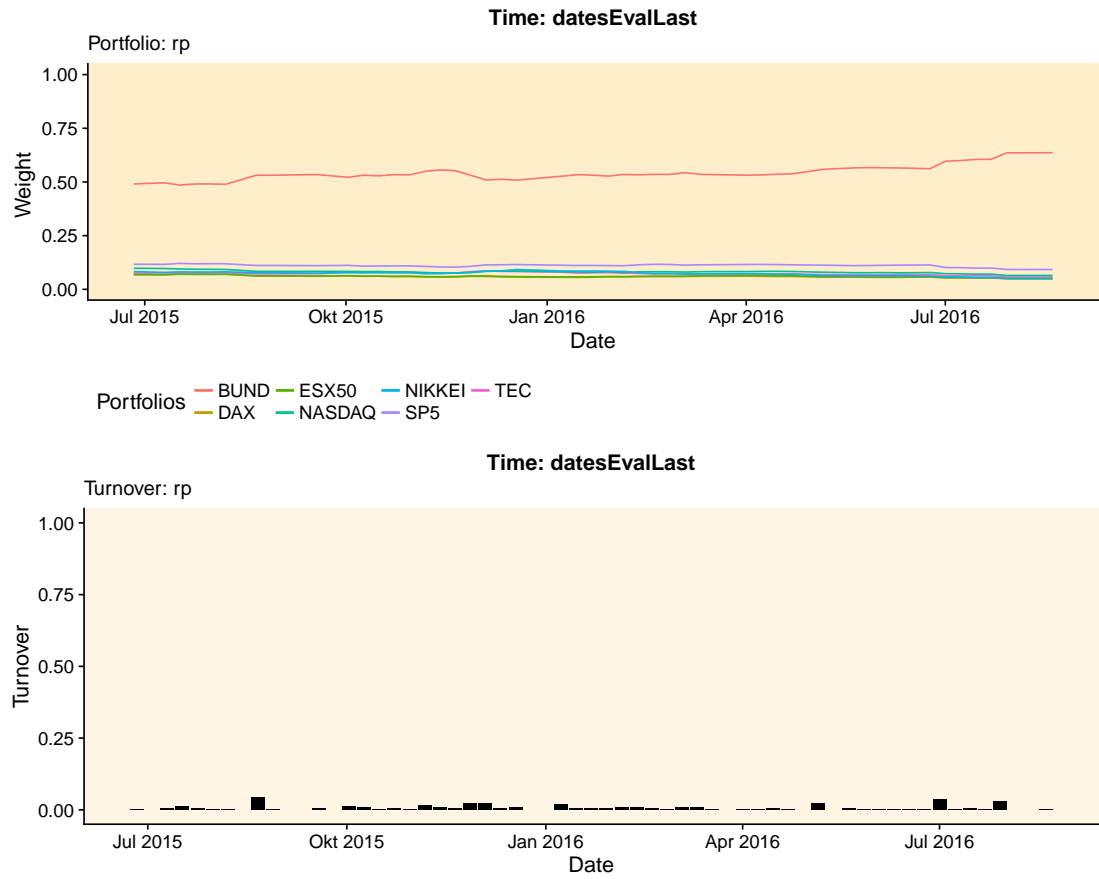
### 3 Results

#### Weights-Classic - datesEvalLast

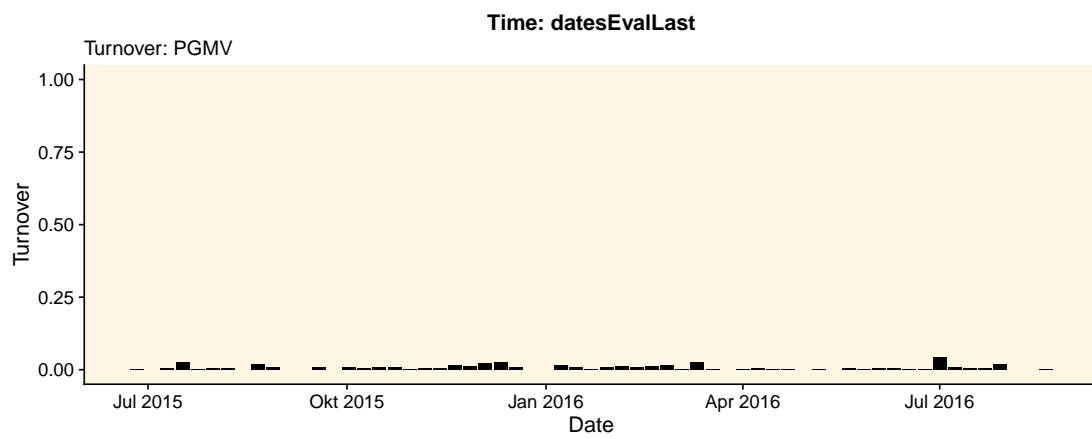
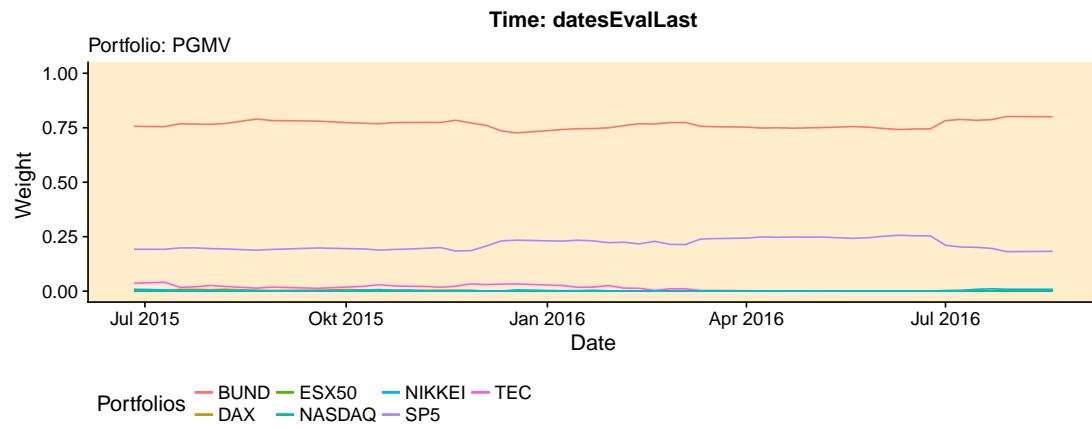




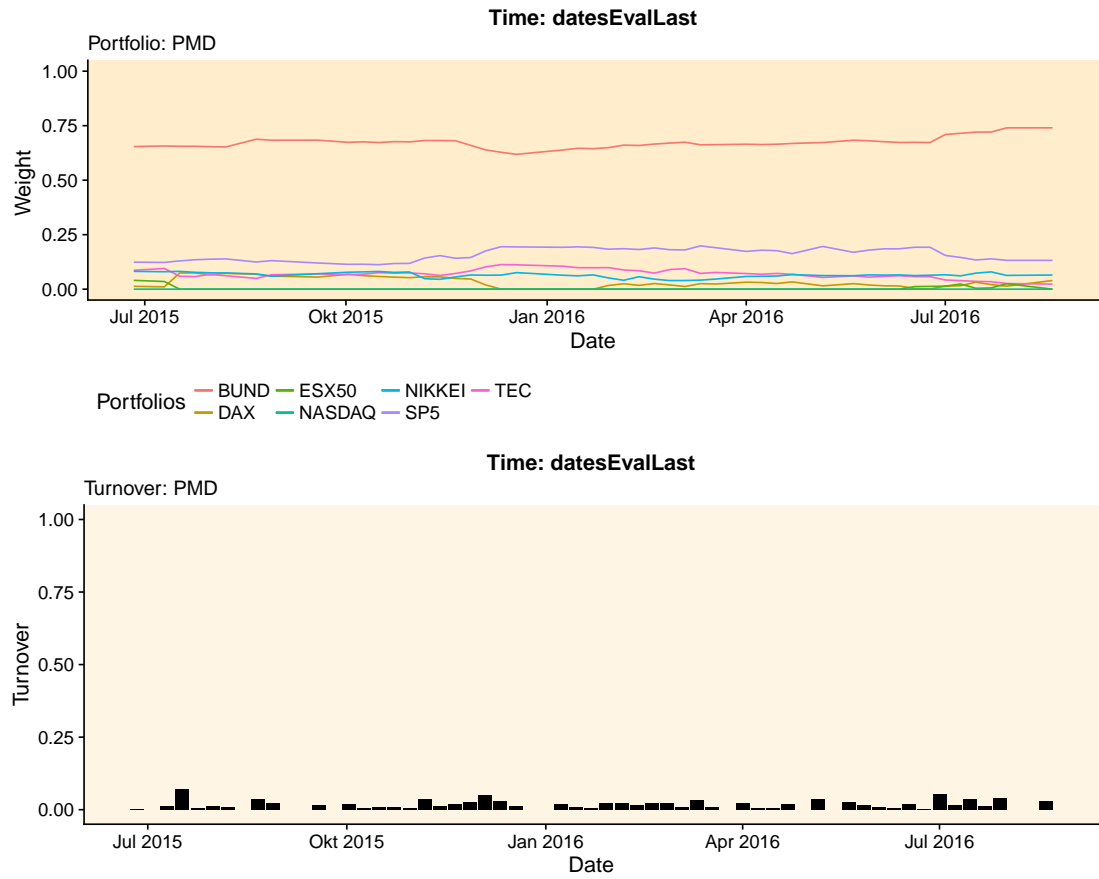
### 3 Results



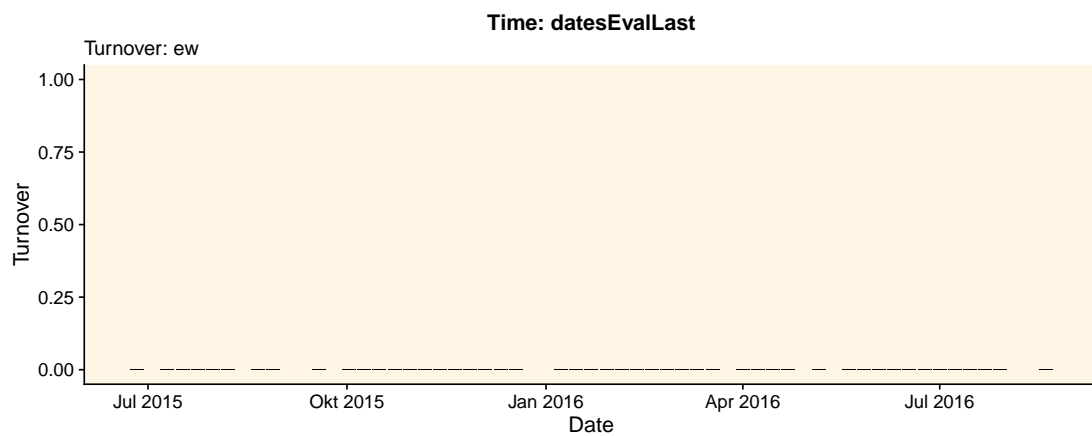
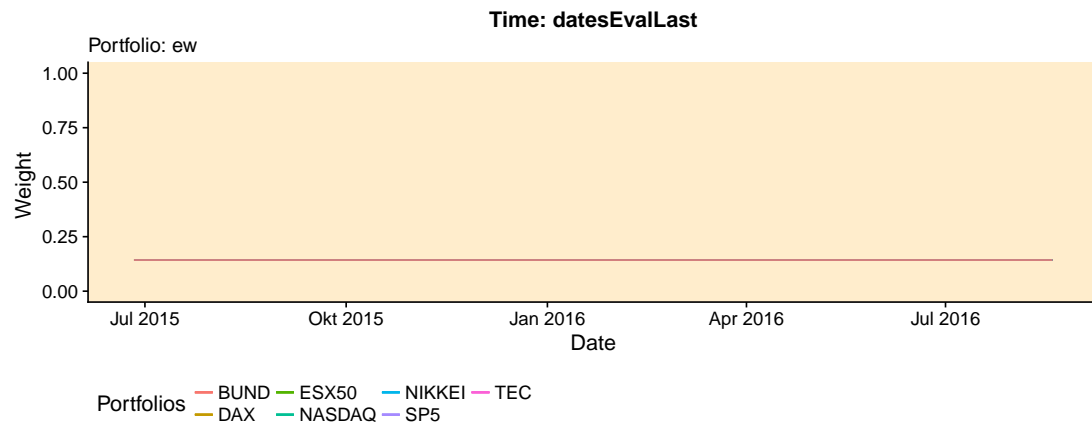




### 3 Results

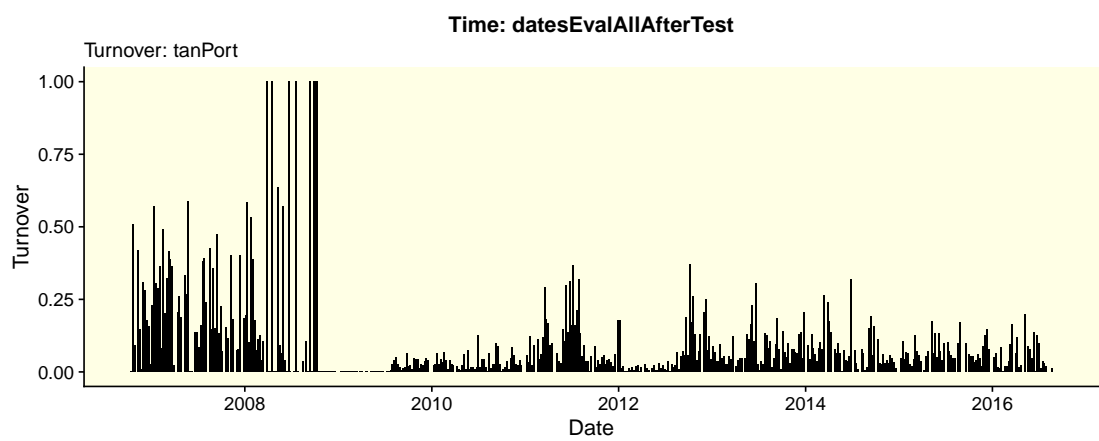
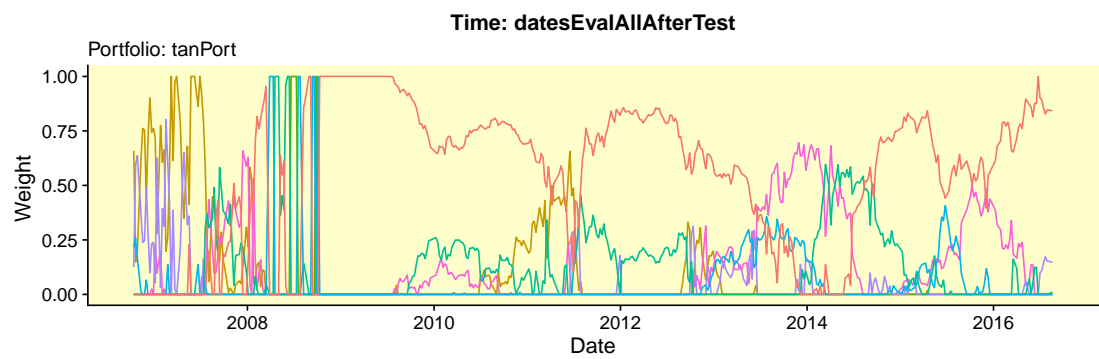


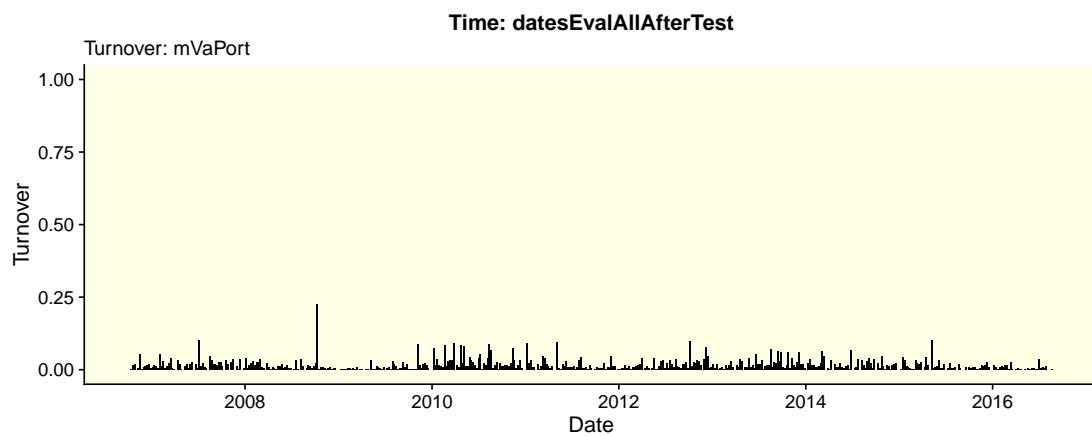
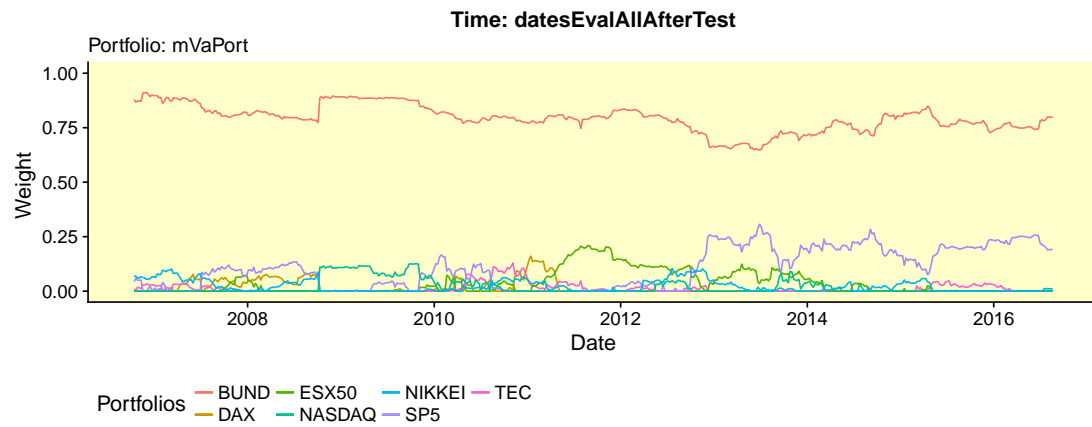
### 3.4 Weights



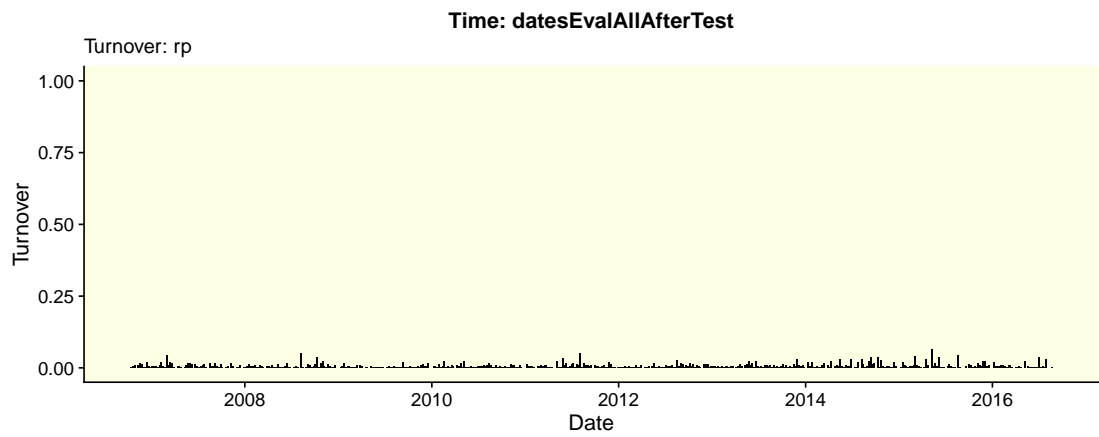
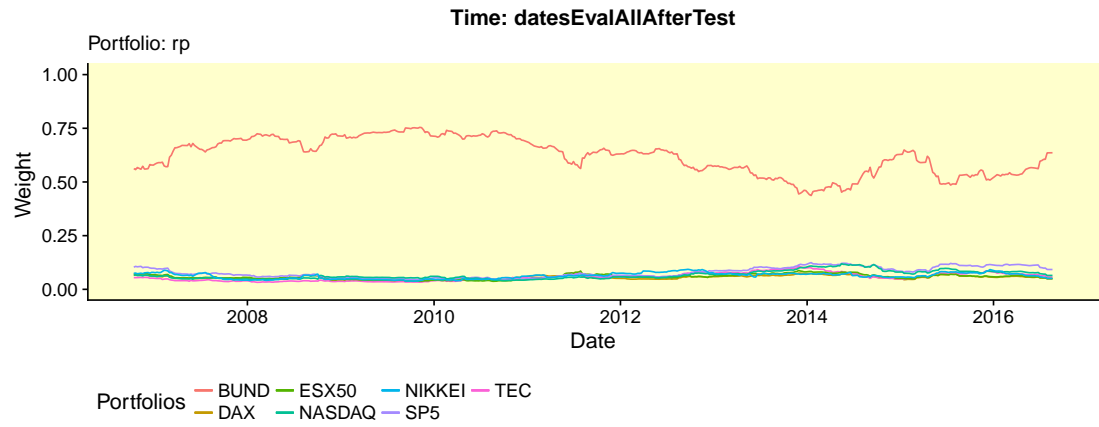
### 3 Results

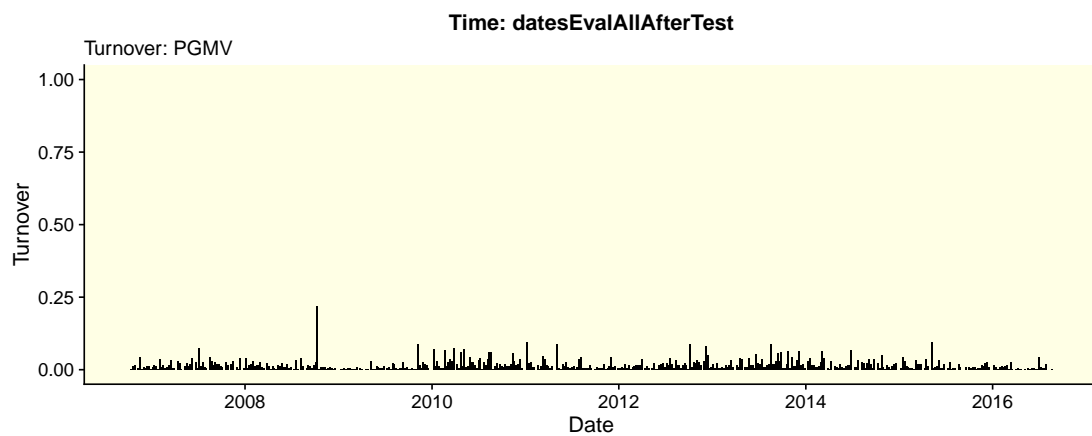
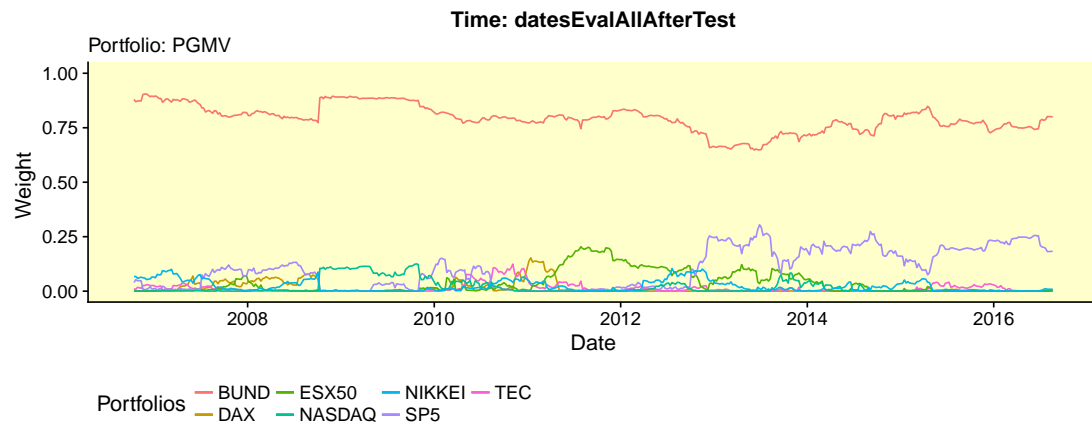
#### Weights-Classic - datesEvalAllAfterTest



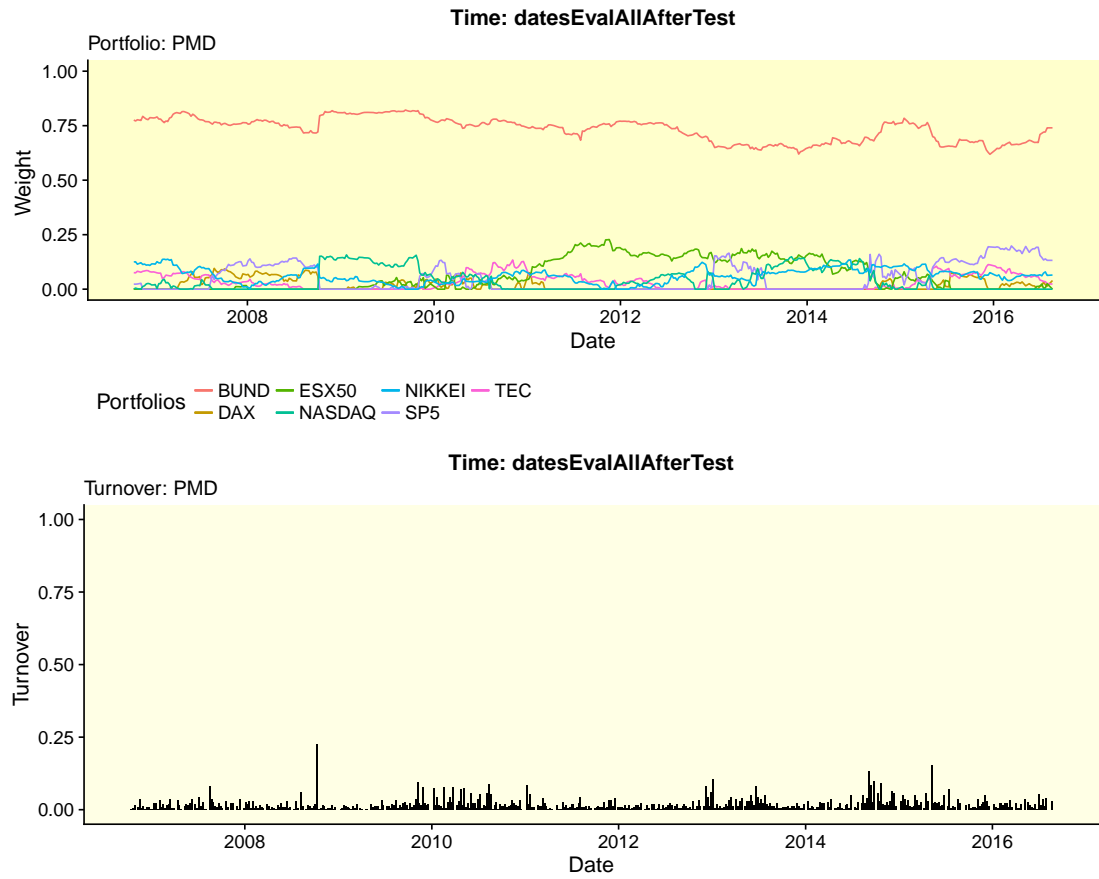


### 3 Results

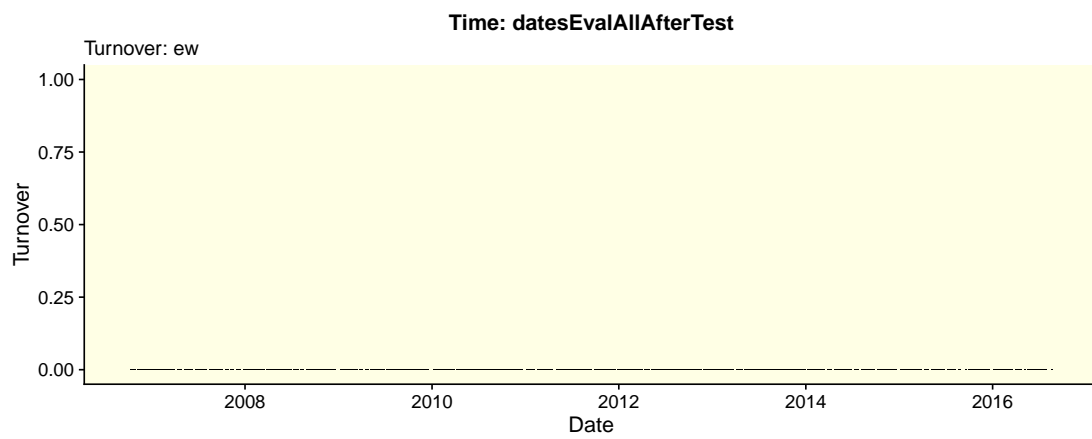
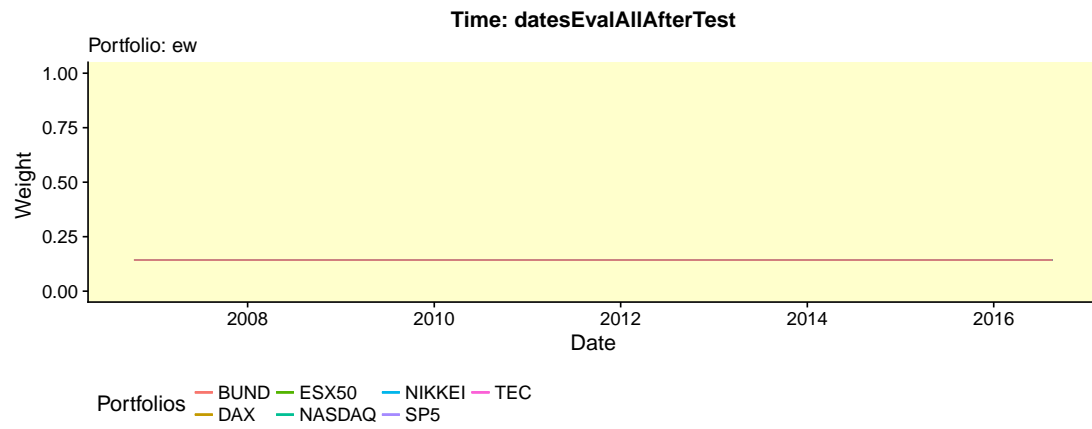




### 3 Results



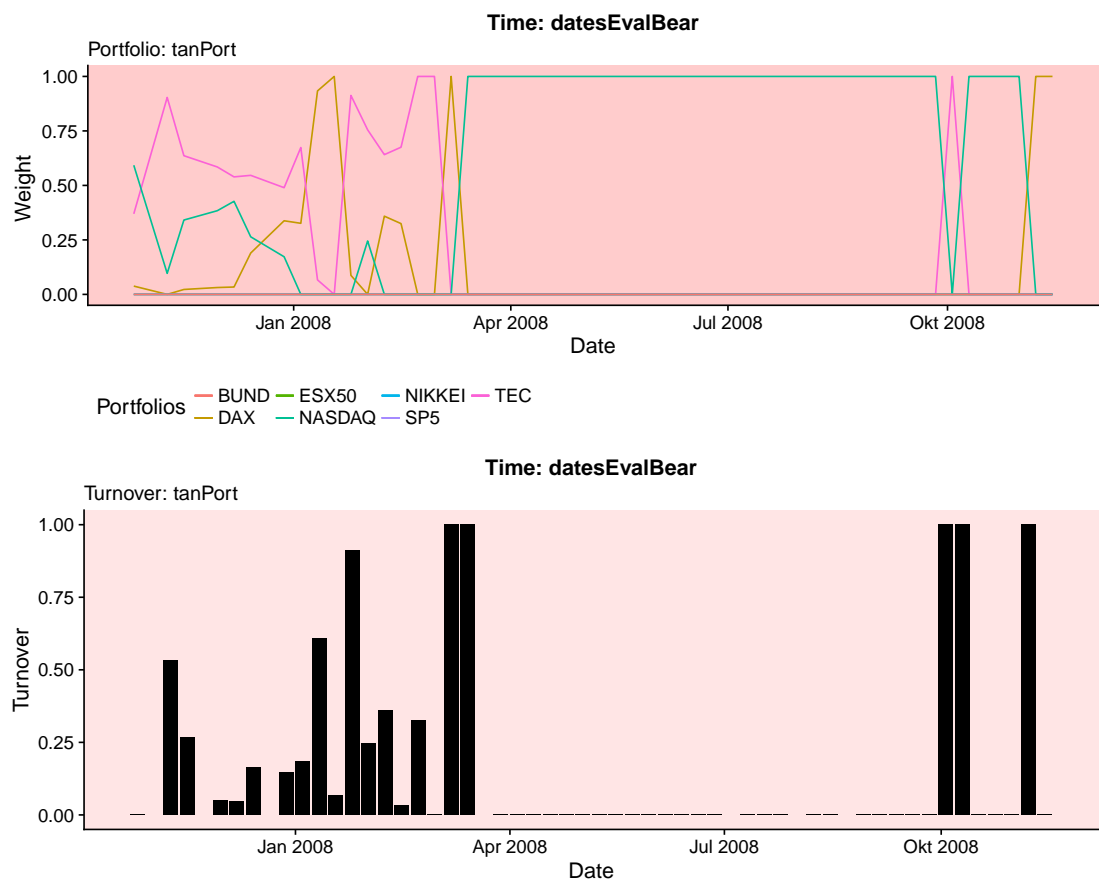


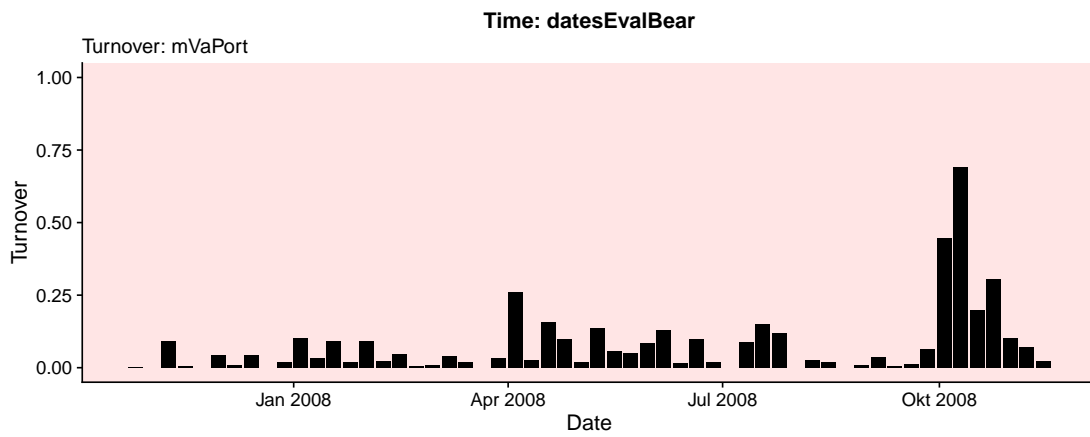
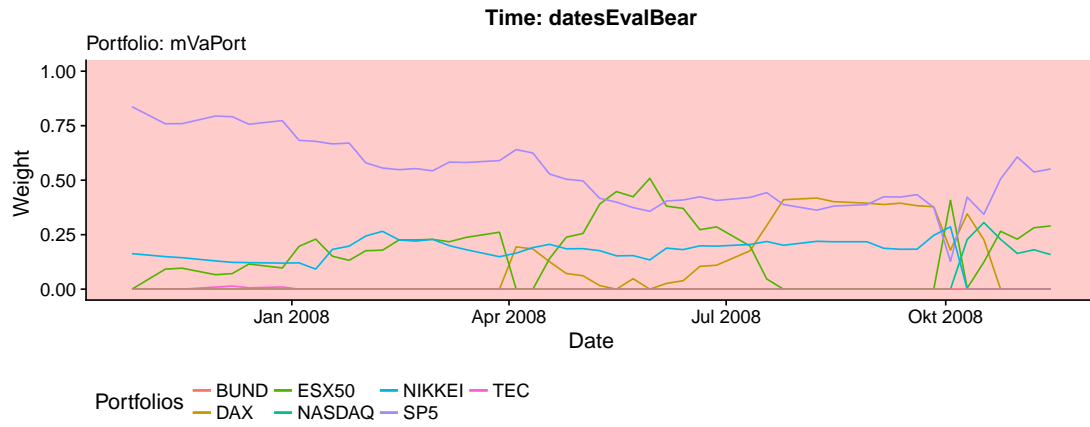


### 3 Results

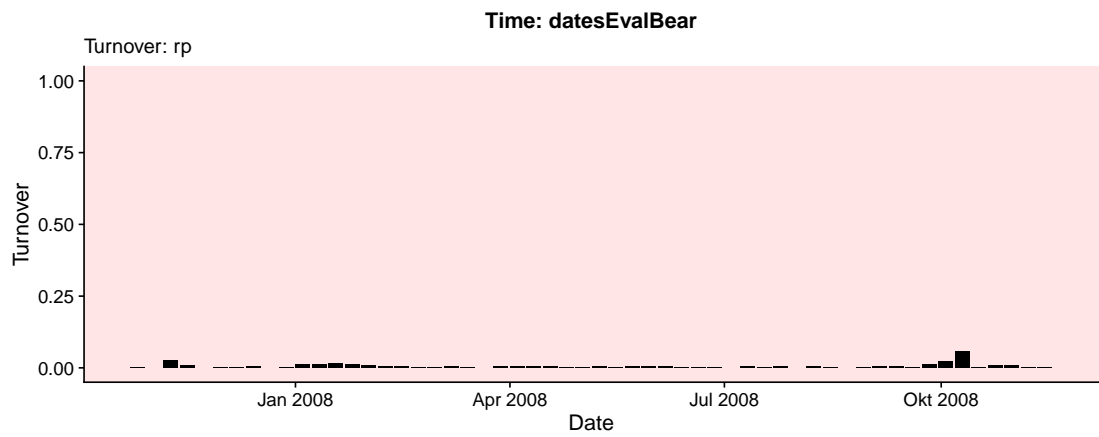
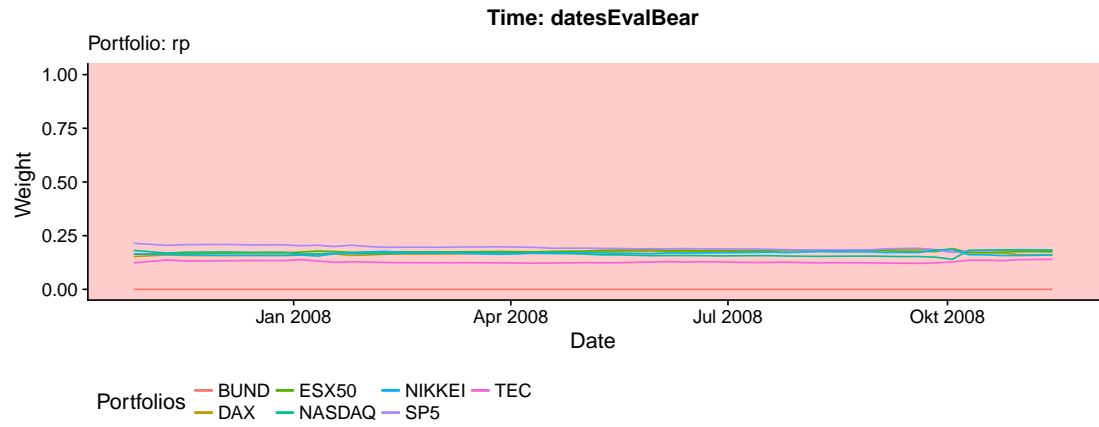
#### 3.4.3 Weights-Classic-No-Risk-Free

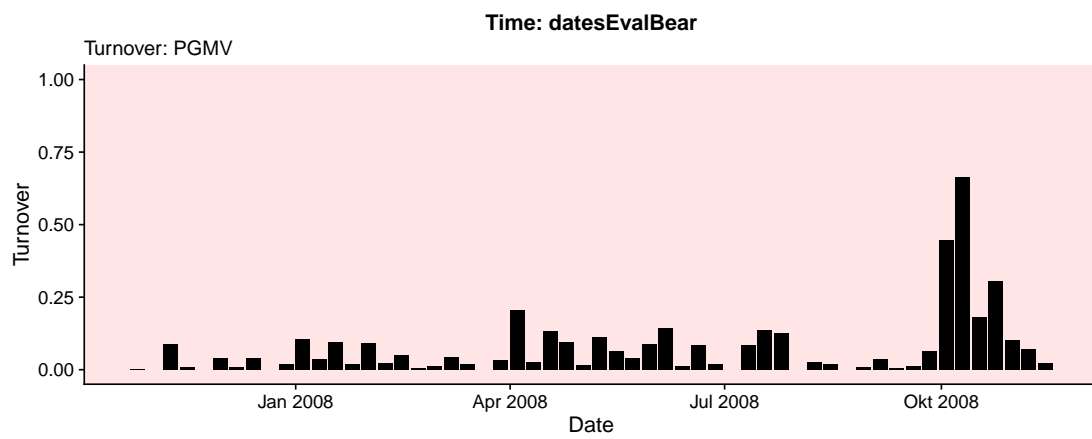
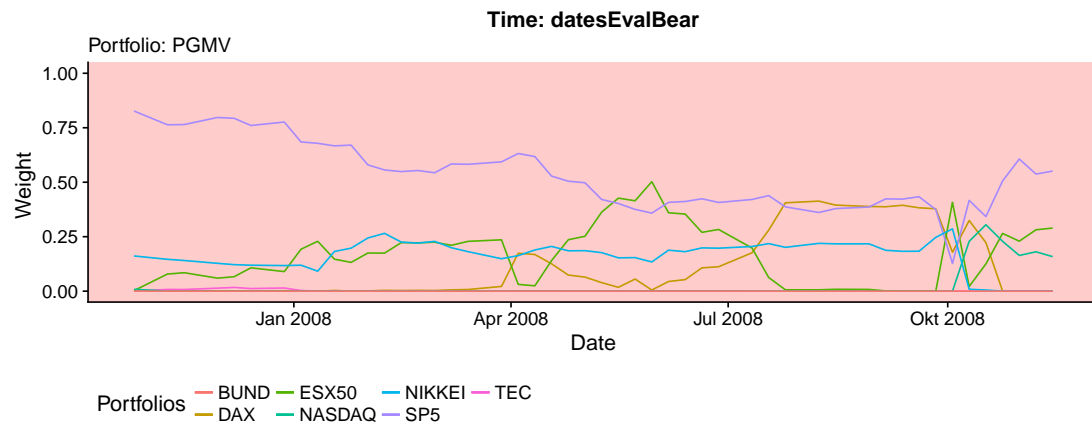
##### Weights-Classic-No-Risk-Free - datesEvalBear



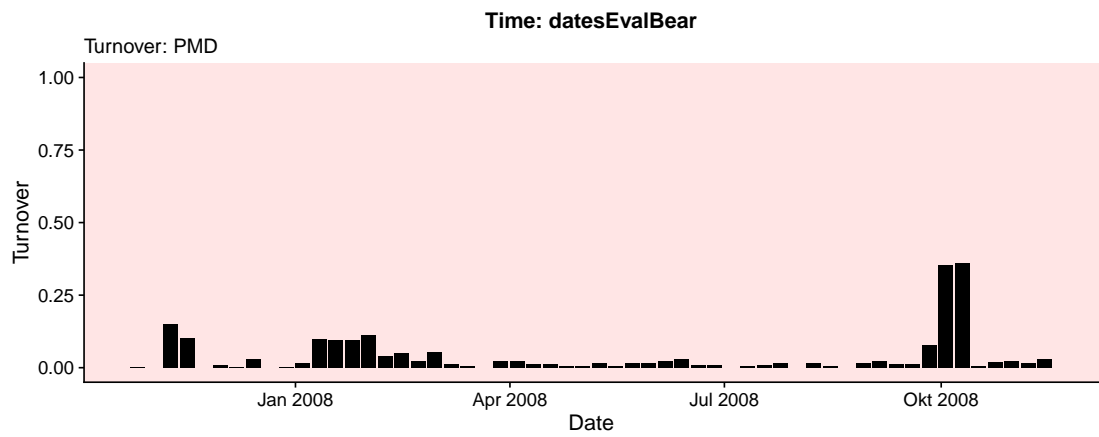
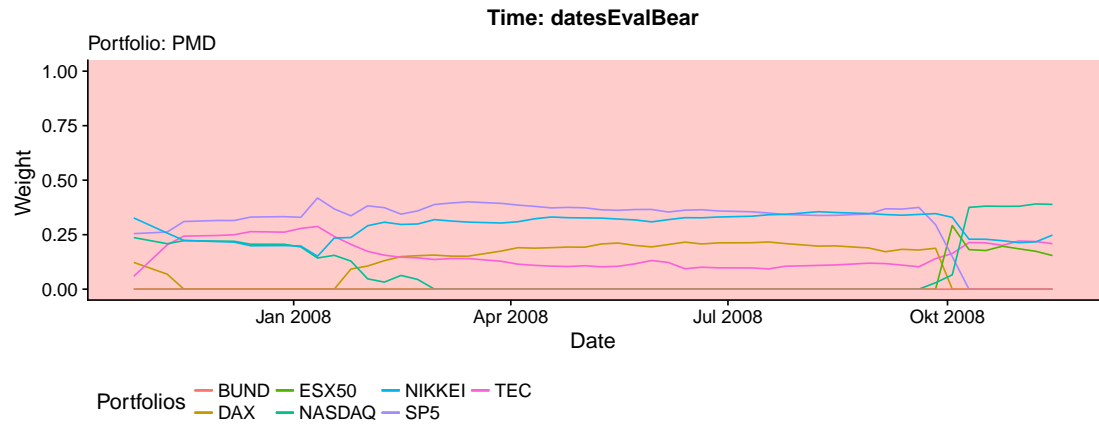


### 3 Results

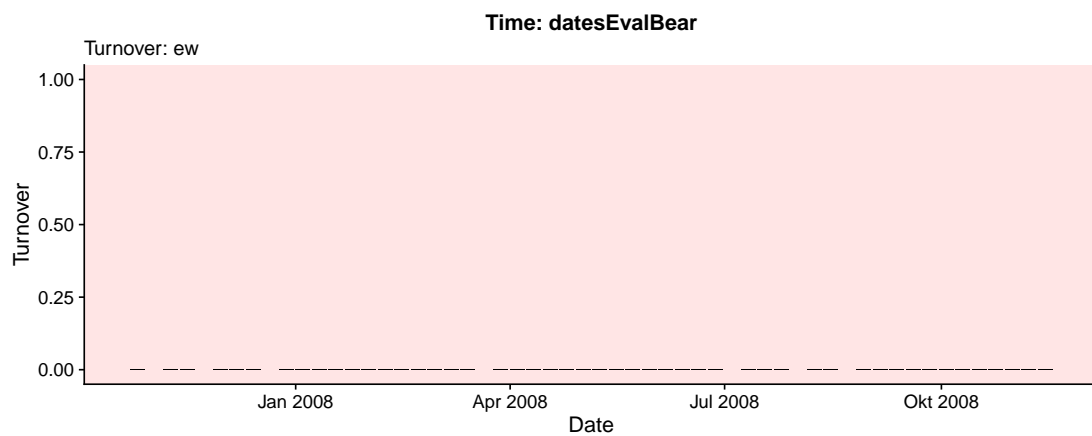
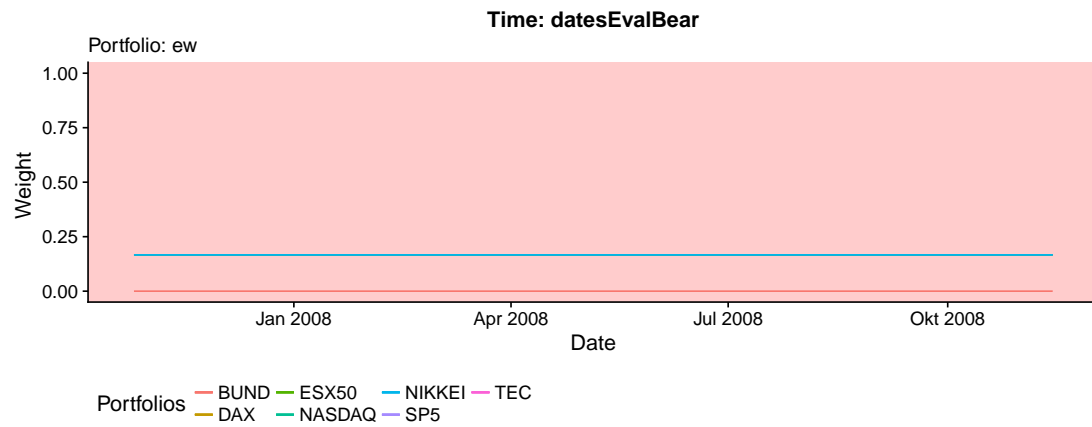




### 3 Results

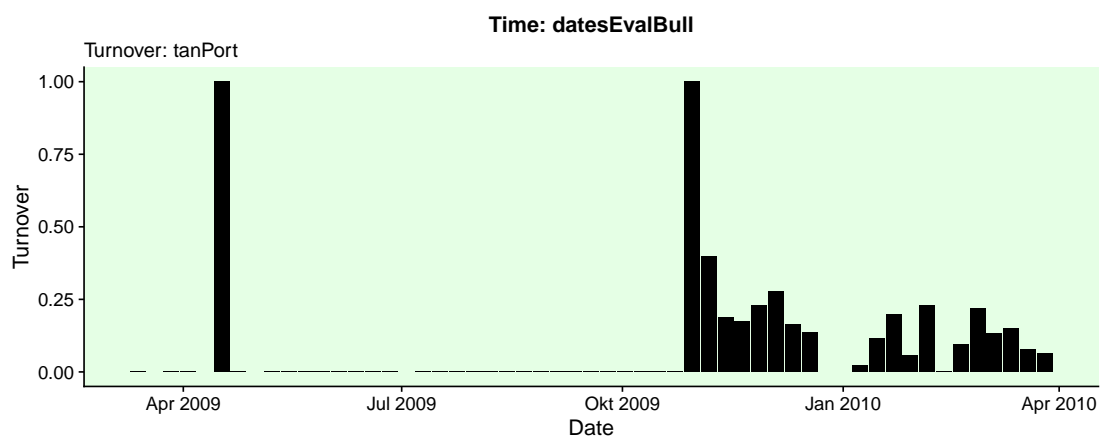
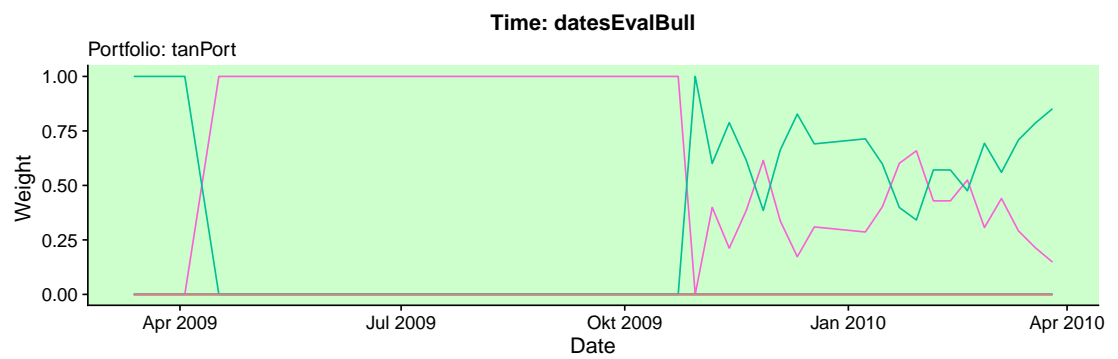


### 3.4 Weights

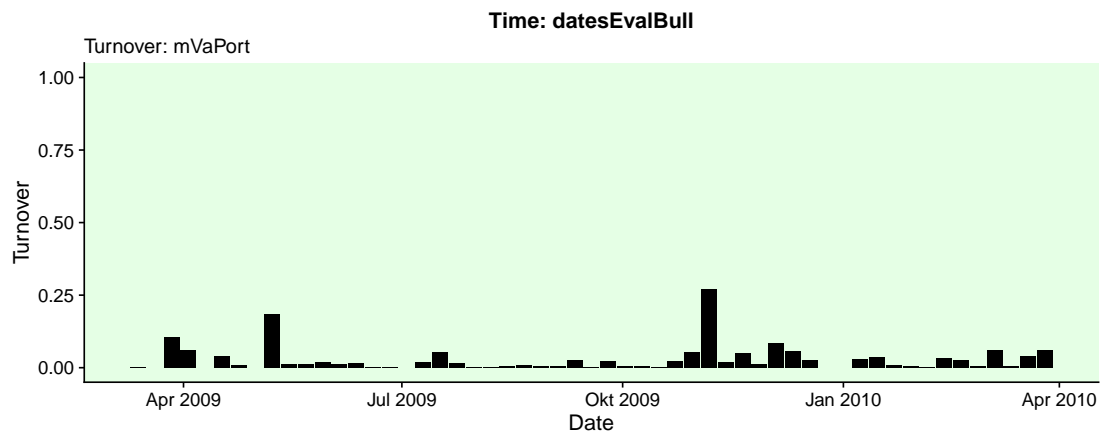
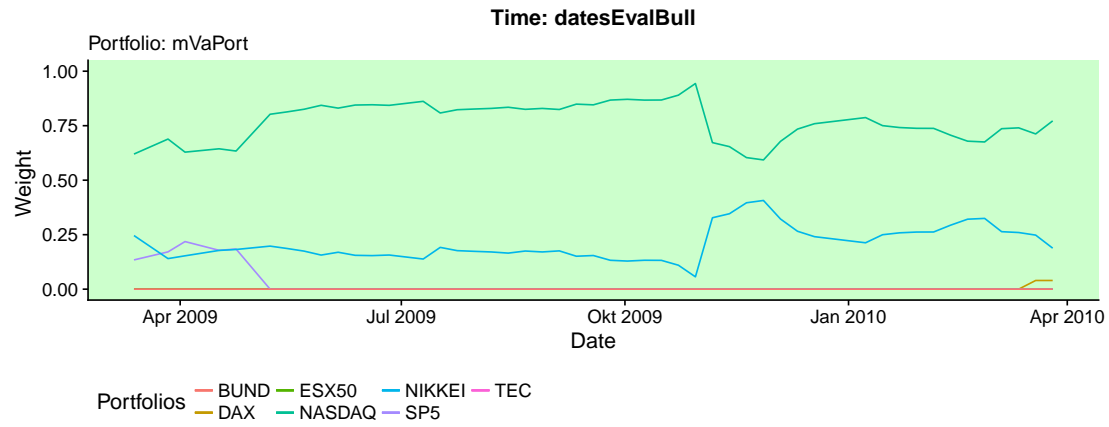


### 3 Results

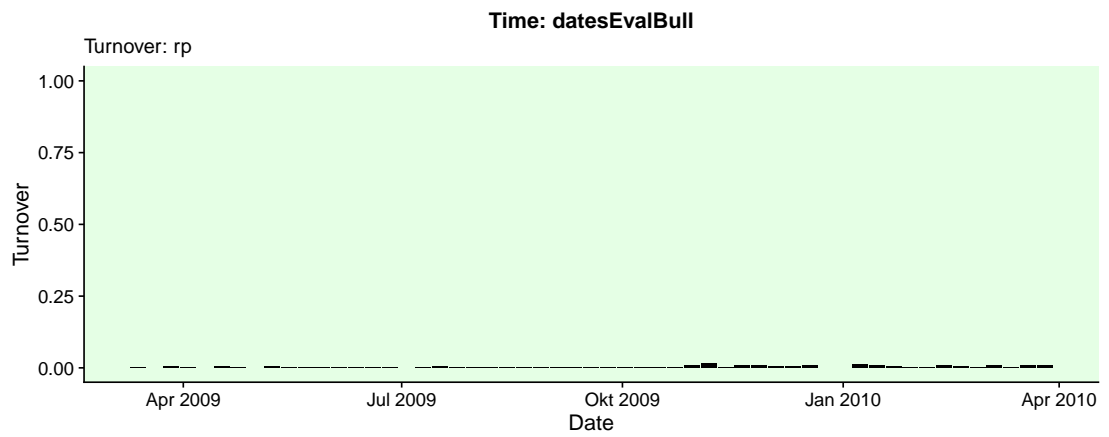
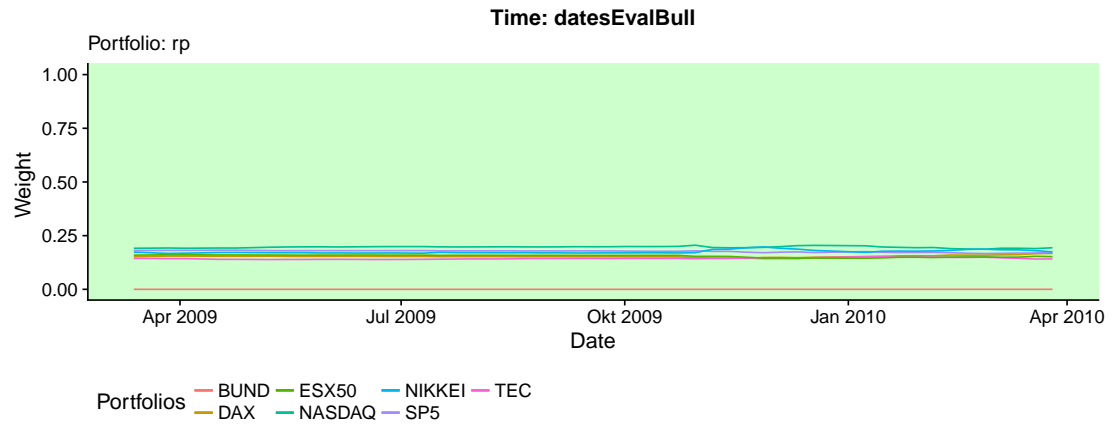
#### Weights-Classic-No-Risk-Free - datesEvalBull

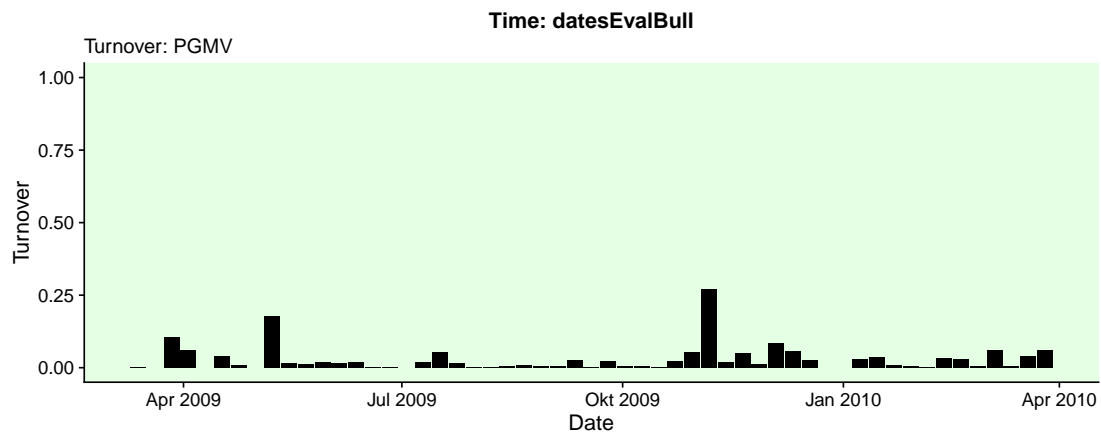
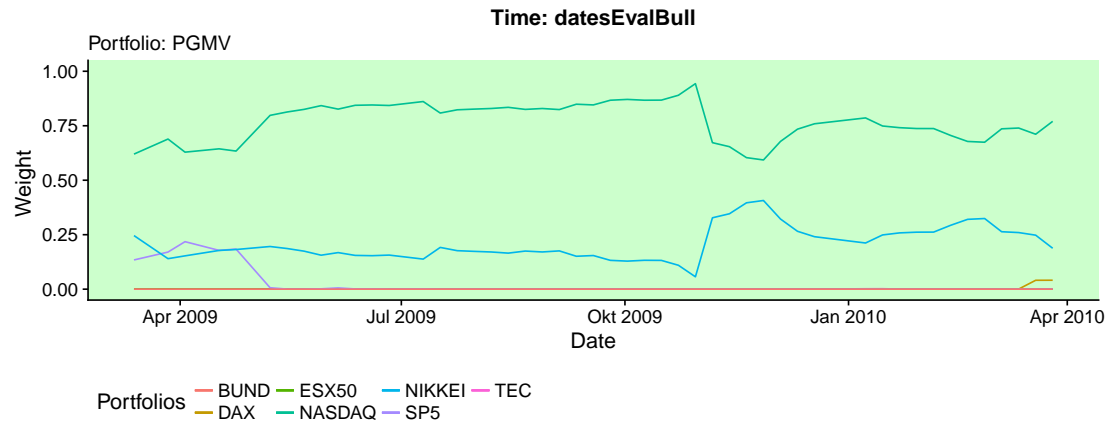




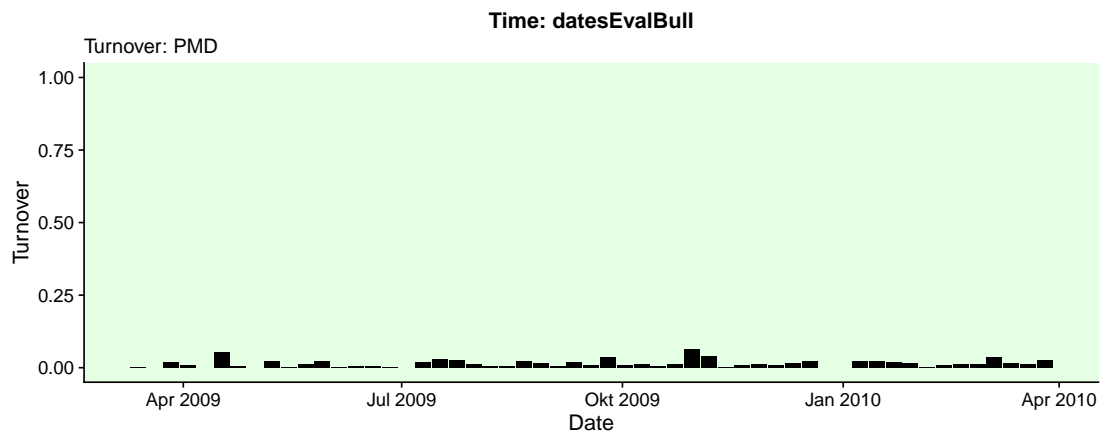
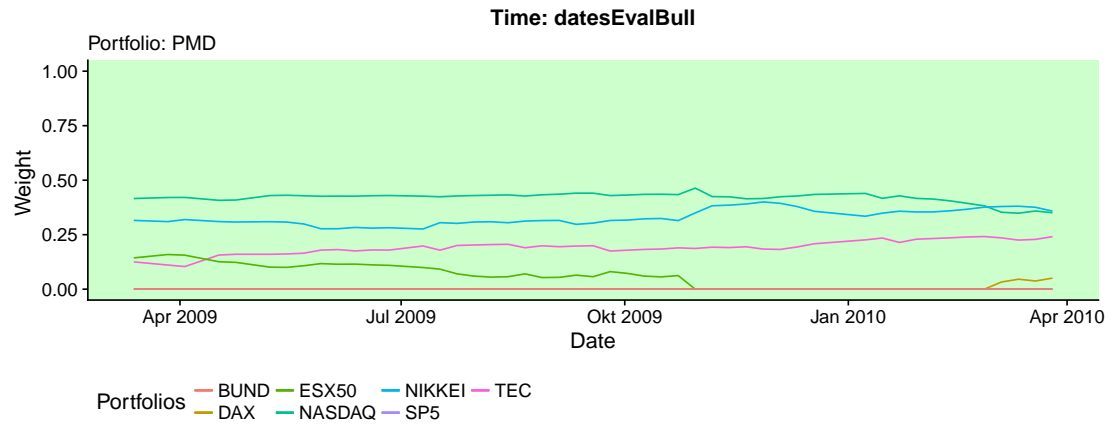


### 3 Results

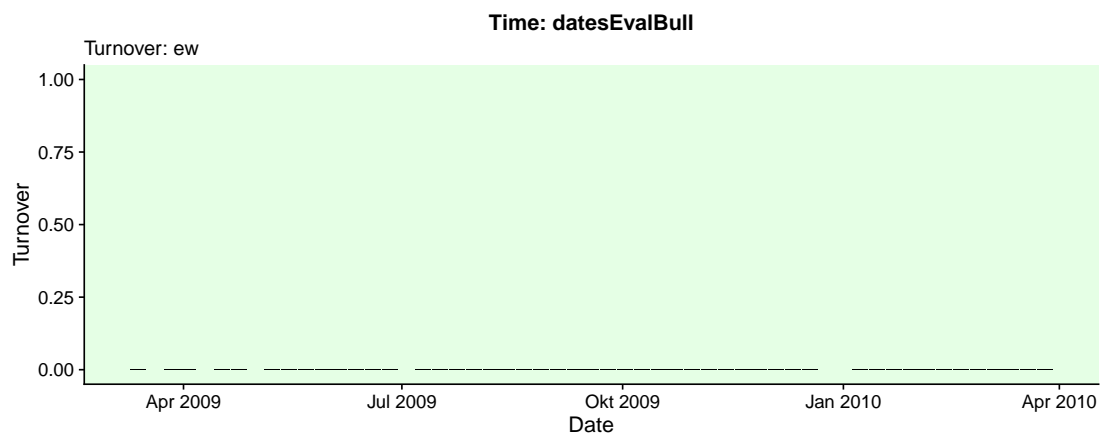
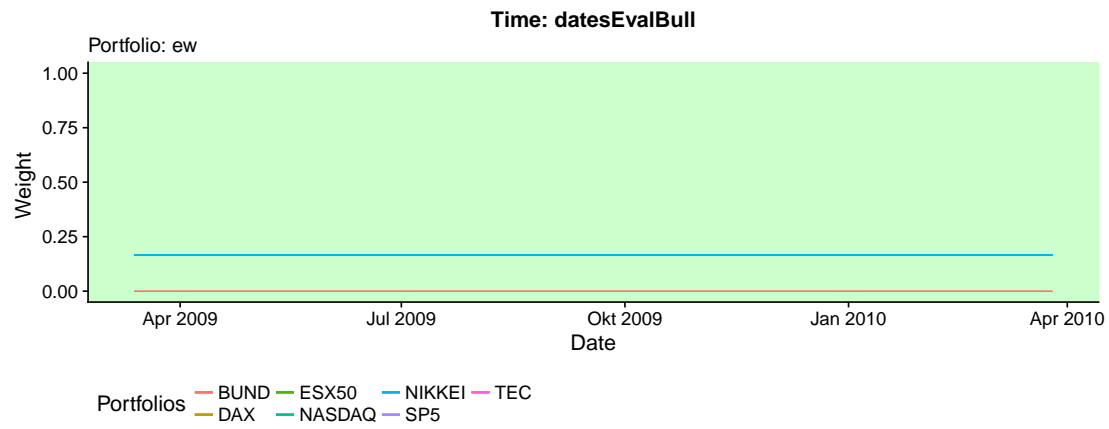




### 3 Results

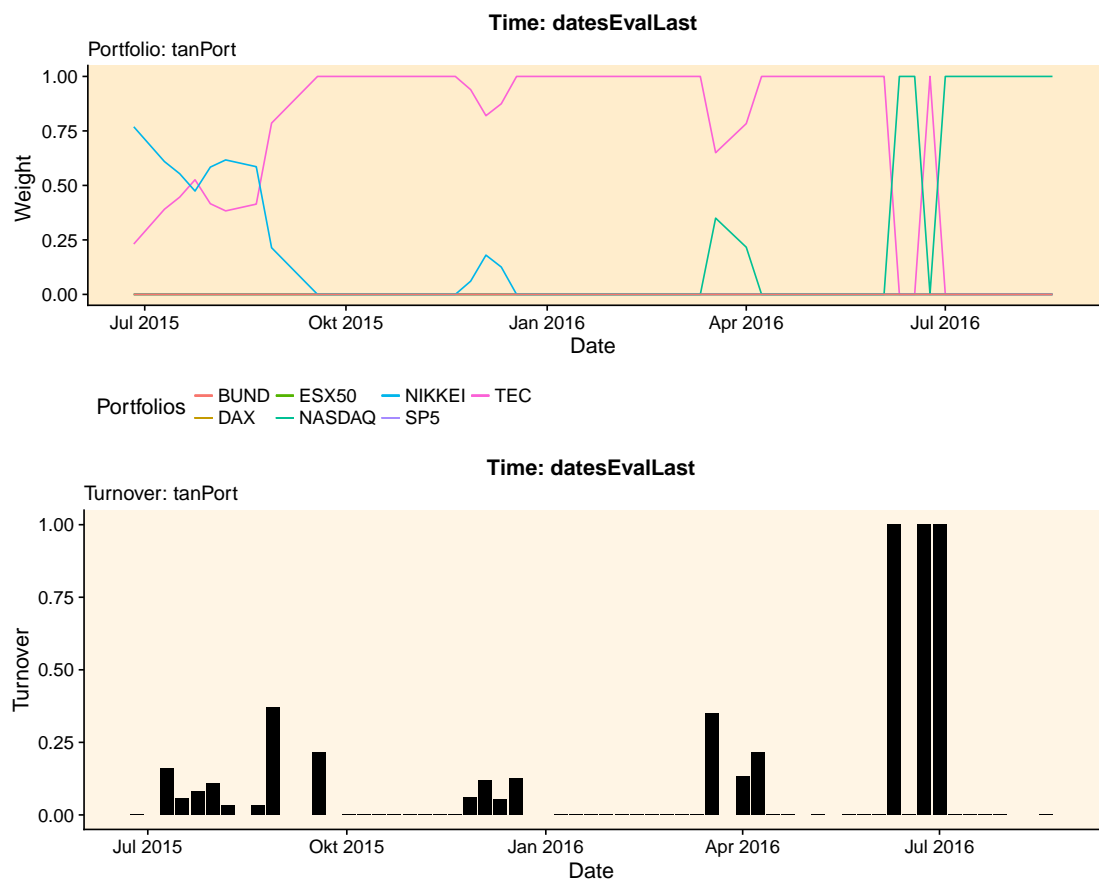


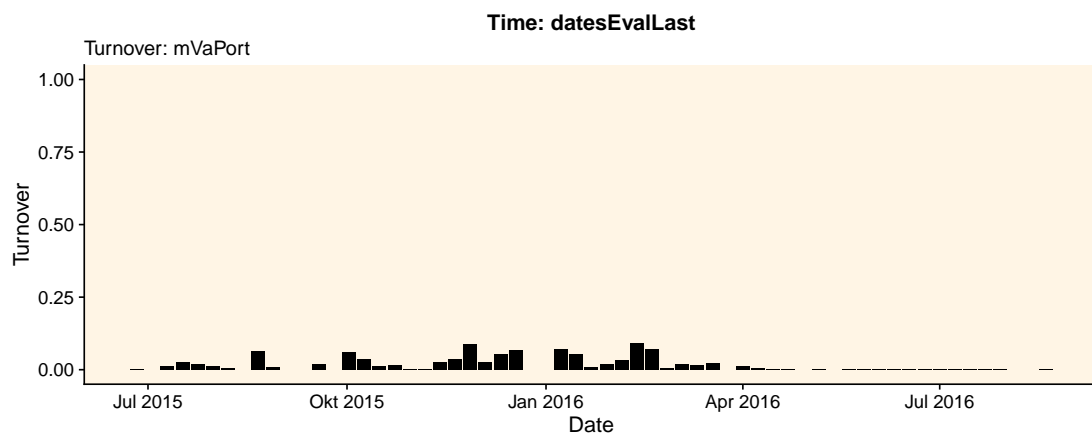
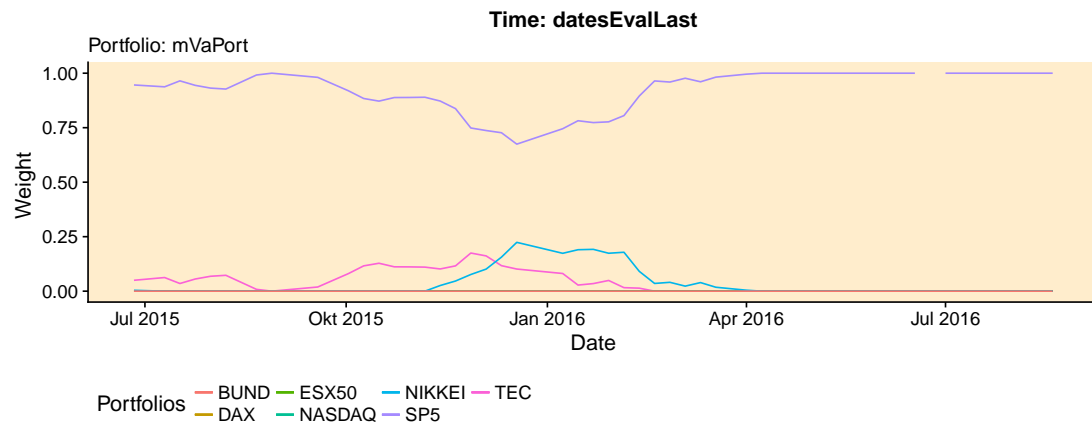
### 3.4 Weights



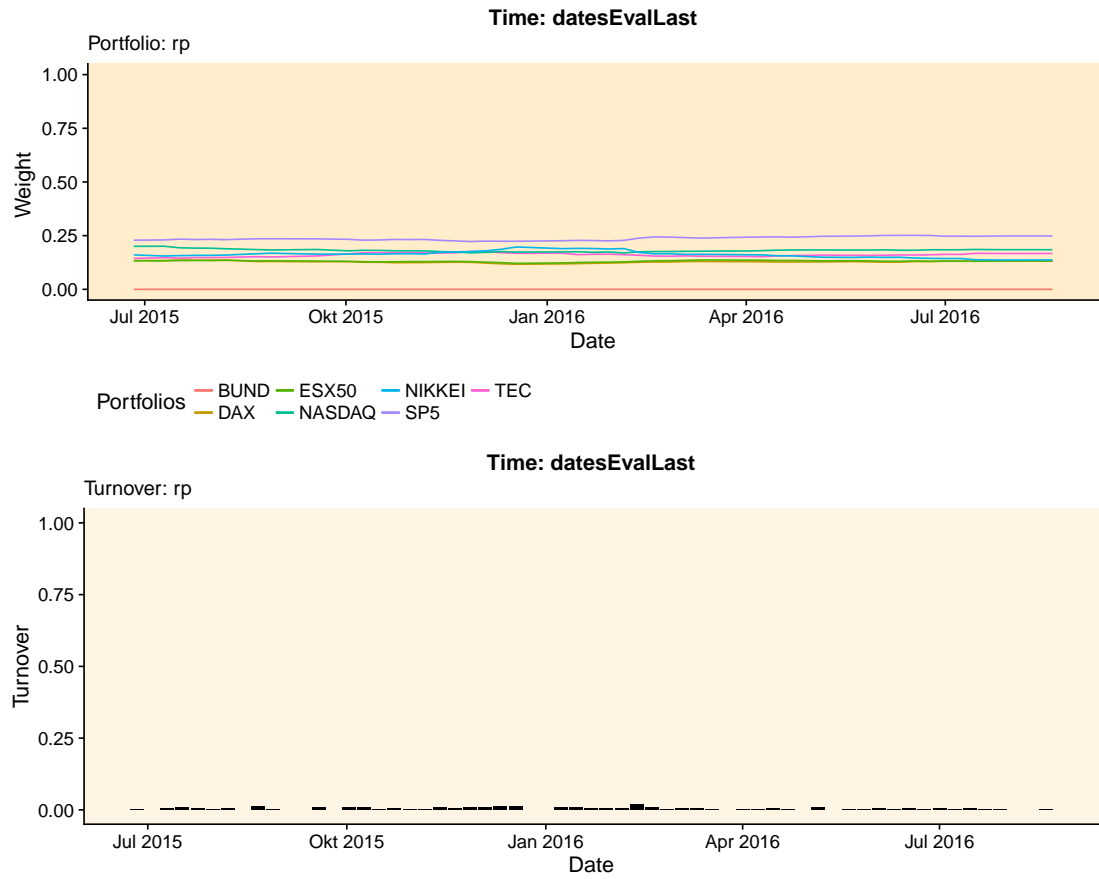
### 3 Results

#### Weights-Classic-No-Risk-Free - datesEvalLast



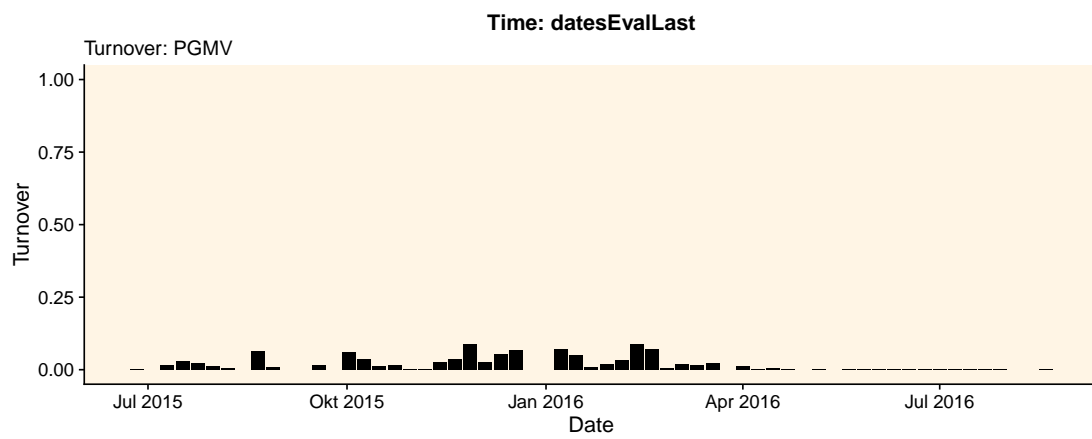
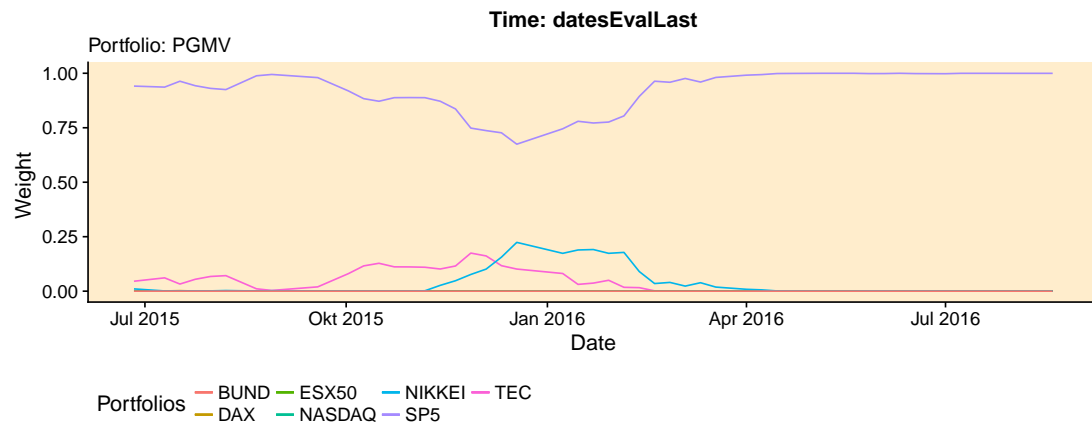


### 3 Results

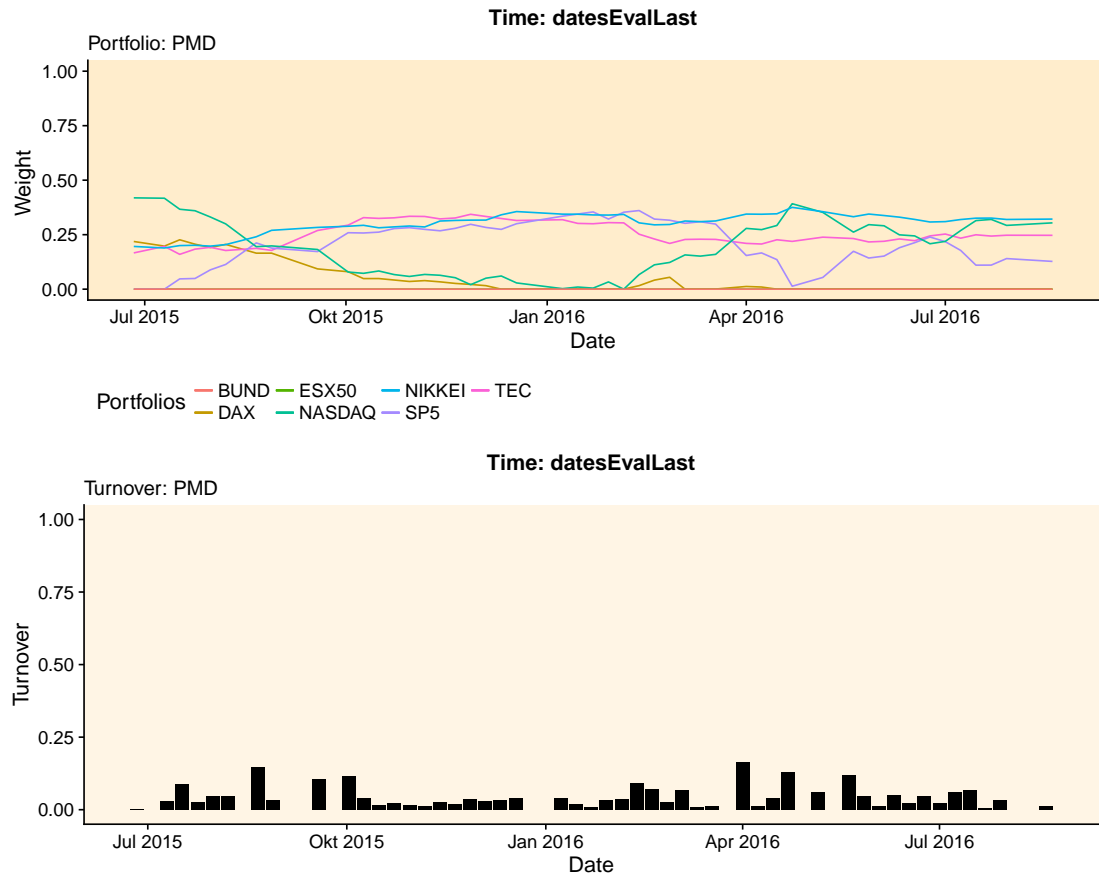




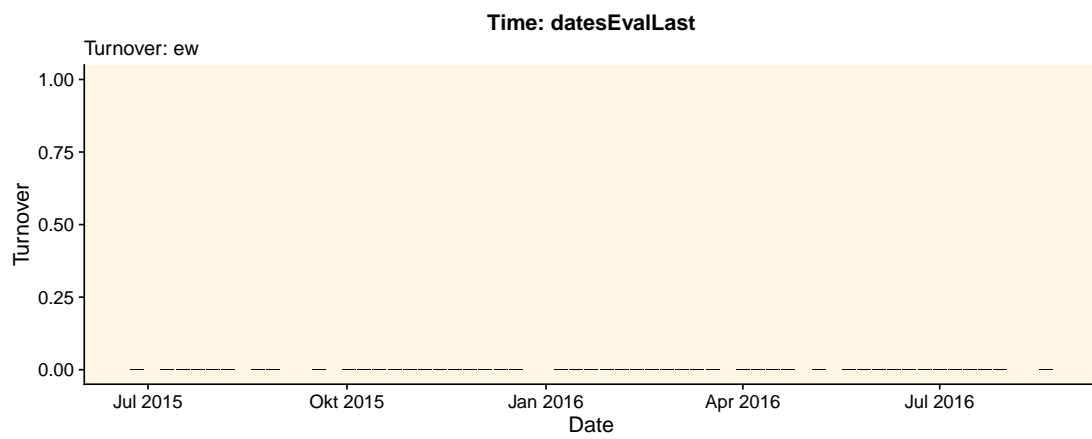
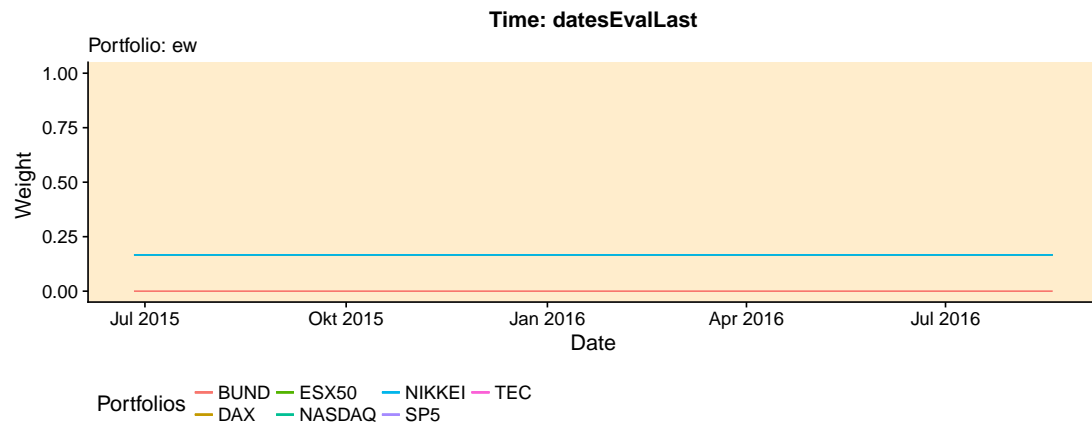
### 3.4 Weights



### 3 Results

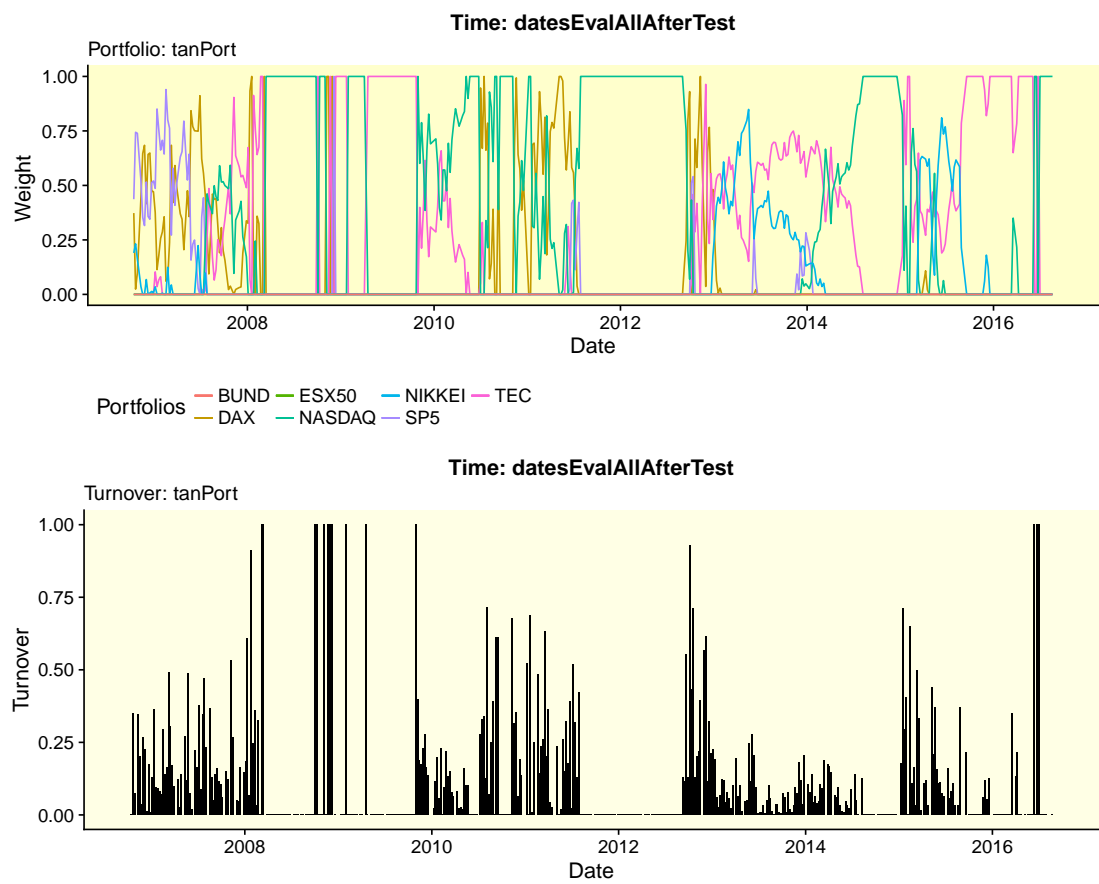


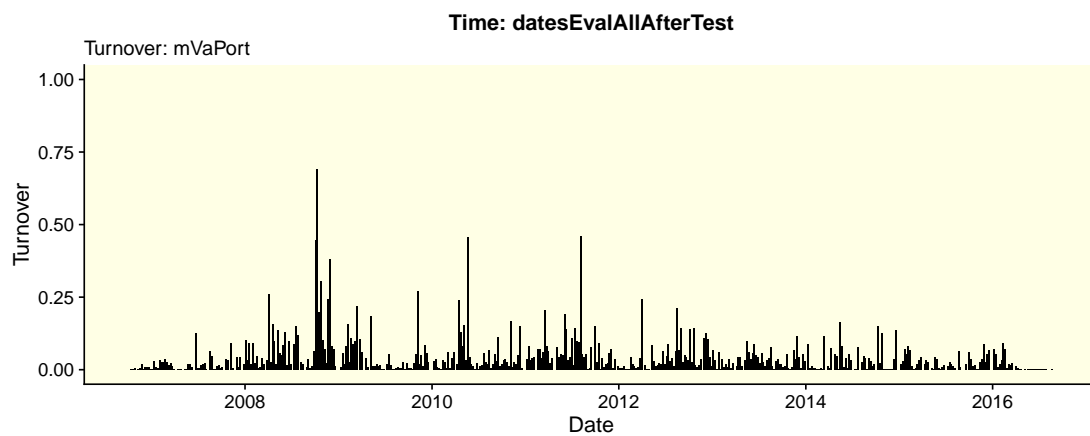
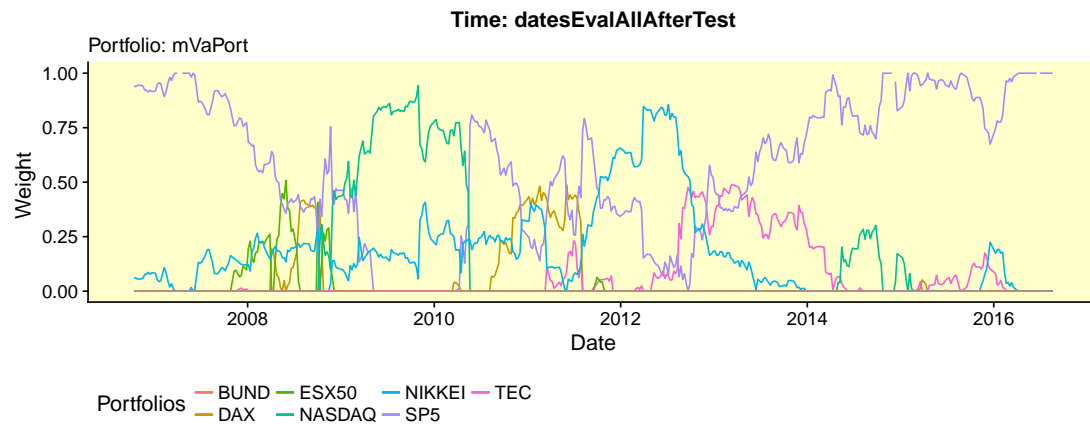
### 3.4 Weights



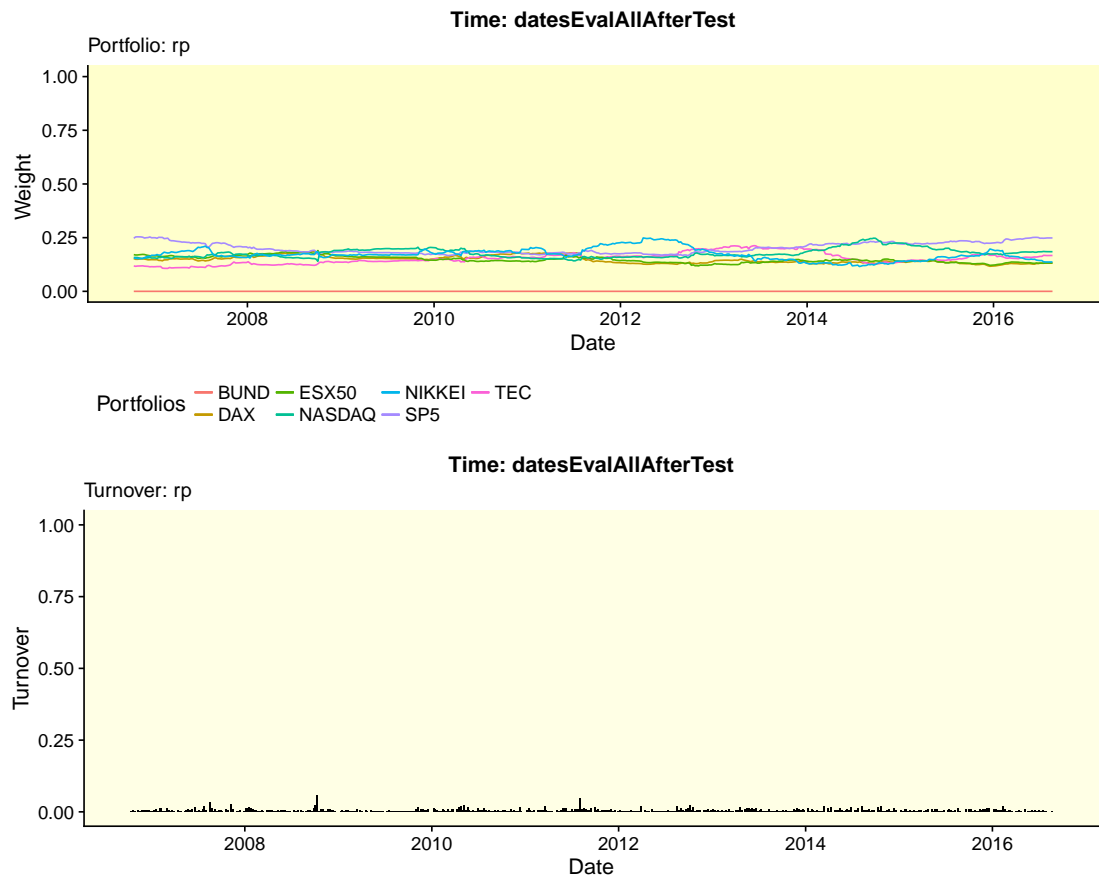
### 3 Results

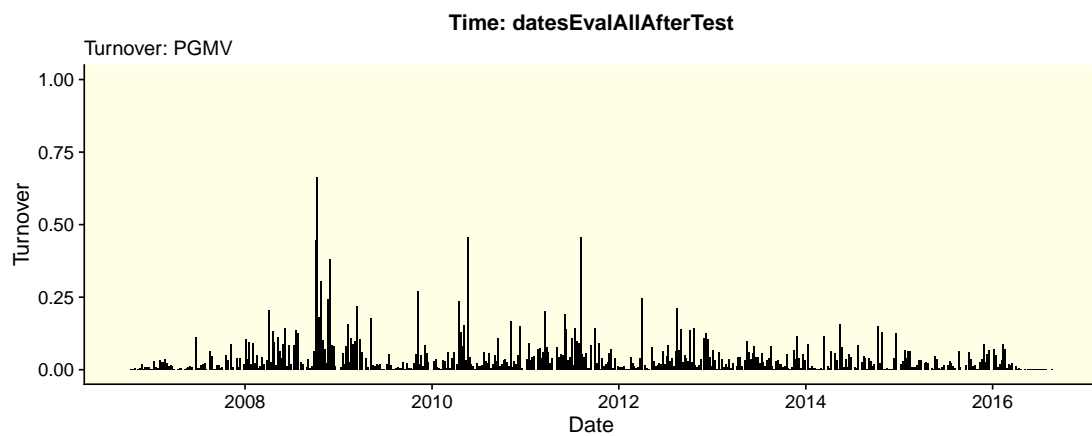
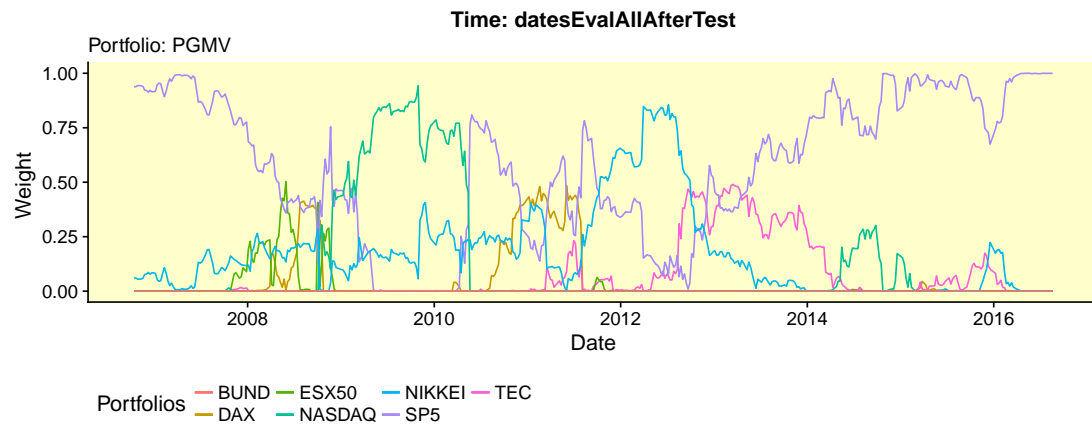
#### Weights-Classic-No-Risk-Free - datesEvalAllAfterTest



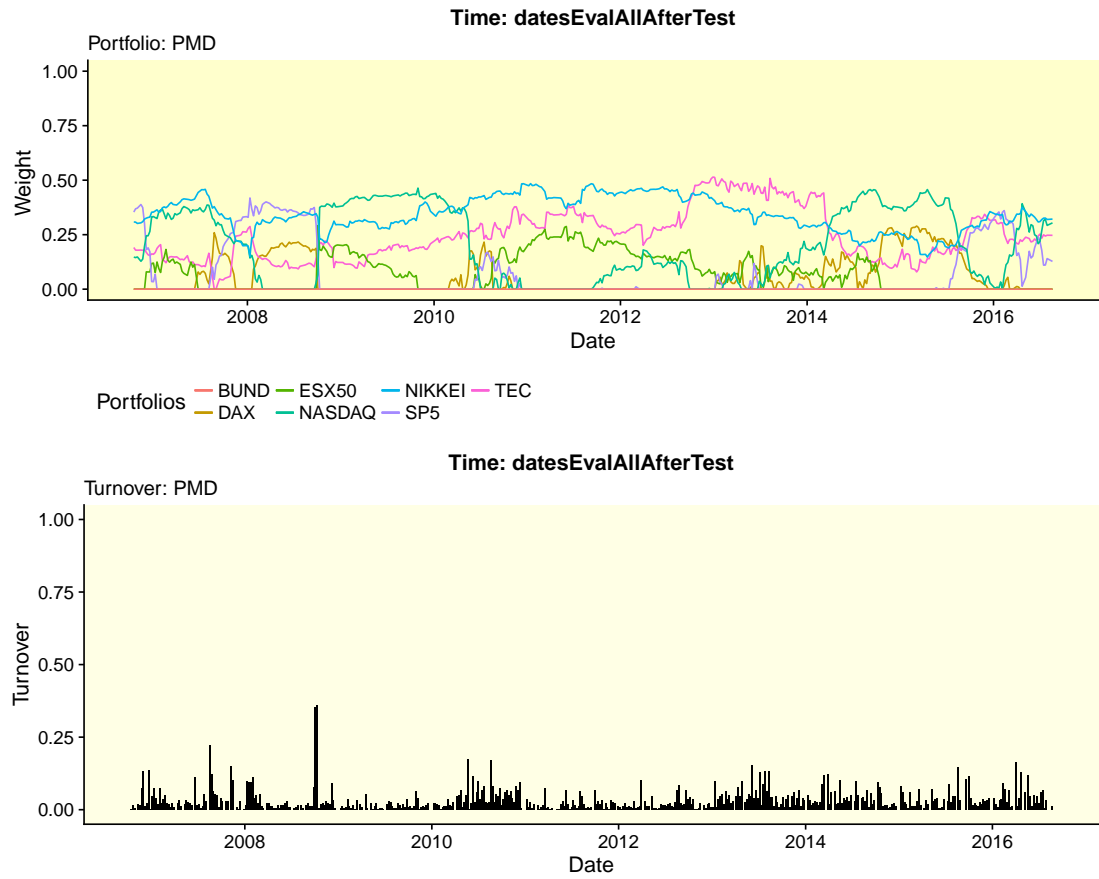


### 3 Results





### 3 Results





### 3.4 Weights

