

# Untitled

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lietuviškos raidės: ą č ę è į š ū ū ž

```
library("quantmod")
```

```
## Loading required package: xts
```

```
## Loading required package: zoo
```

```
##
```

```
## Attaching package: 'zoo'
```

```
## The following objects are masked from 'package:base':
```

```
##
```

```
##      as.Date, as.Date.numeric
```

```
## Loading required package: TTR
```

```
## Version 0.4-0 included new data defaults. See ?getSymbols.
```

```
library("forecast")
```

```
## Loading required package: timeDate
```

```
## This is forecast 7.2
```

```
istraukimas <- function(salis,folderio_pav,failo_pav){  
  setwd(folderio_pav)  
  data=read.csv(failo_pav)  
  data = data[data$S_ADJ=="Seasonally and calendar adjusted data",]  
  data = data[data$UNIT=="Index, 2010=100",]  
  data = data[data$GEO == salis,]  
  setwd('..')  
  return(data[,c(1,7)])  
}
```

```
istraukimas2 <- function(salis,folderio_pav,failo_pav,indikatorius){  
  setwd(folderio_pav)  
  data=read.csv(failo_pav)  
  data = data[data$S_ADJ=="Seasonally adjusted data, not calendar adjusted data",]  
  data = data[data$GEO == salis,]  
  data = data[data$INDIC == indikatorius,]
```

```

    setwd('..')
    return(data[,c(1,5)])
}
getwd()

```

```
## [1] "/Users/manvydassokolovas/Documents/kursiniam/ATASKAITOS"
```

```

setwd("~/Documents/kursiniam_pauliaus/creative/clean data")

omx=read.csv("omx.csv")
data=omx[,c(2,5)]
data[,1]

```

```

##      [1] 100.00 100.00 100.00 100.94 101.02 101.13 101.65 101.65 101.65
##     [10] 102.50 102.94 103.60 103.60 104.53 104.53 104.53 104.58 104.53
##    [19] 104.69 104.49 104.11 104.11 104.11 103.22 103.18 103.37 103.12
##    [28] 102.48 102.48 102.48 102.10 102.09 102.21 102.51 102.53 102.53
##    [37] 102.53 102.36 101.46 101.41 101.17 101.33 101.33 101.33 101.54
##    [46] 101.73 101.73 102.18 102.30 102.30 102.30 102.42 102.55 100.66
##    [55] 101.12 100.53 100.53 100.53 100.51 100.17 100.38 100.88 101.48
##    [64] 101.48 101.48 101.66 102.14 102.10 102.61 103.20 103.20 103.20
##    [73] 103.25 103.59 105.04 106.72 105.39 105.39 105.39 105.01 103.99
##    [82] 103.15 103.25 103.57 103.57 103.57 103.22 102.99 102.39 102.22
##    [91] 102.34 102.34 102.34 102.54 103.19 102.67 102.29 102.02 102.02
##   [100] 102.02 101.10 101.21 101.52 101.03 100.82 100.82 100.82 99.72
##   [109] 99.56 99.86 100.16 100.20 100.20 100.20 100.20 100.53 100.67
##   [118] 100.26 100.76 100.76 100.76 100.70 100.99 100.85 101.45 101.19
##   [127] 101.19 101.19 101.25 100.31 100.52 100.68 100.66 100.66 100.66
##   [136] 100.51 100.80 101.05 100.78 102.29 102.29 102.29 101.85 101.42
##   [145] 101.68 101.61 101.52 101.52 101.52 101.46 100.60 100.31 99.59
##   [154] 99.35 99.35 99.35 99.34 98.99 99.18 99.49 99.51 99.51
##   [163] 99.51 99.13 98.68 96.74 97.06 96.75 96.75 96.75 95.90
##   [172] 94.78 93.13 92.26 91.32 91.32 91.32 89.96 92.29 92.68
##   [181] 92.76 92.66 92.33 92.33 92.34 91.78 91.85 91.85 91.85
##   [190] 91.85 91.85 91.71 91.55 91.64 91.79 91.82 91.82 91.82
##   [199] 91.74 91.31 91.64 90.89 90.52 90.52 90.52 90.41 90.38
##   [208] 90.70 91.33 91.44 91.44 91.44 90.46 90.50 89.43 89.58
##   [217] 89.21 89.21 89.21 88.08 86.62 86.61 86.42 86.86 87.69
##   [226] 87.69 87.69 87.69 86.60 86.13 86.05 86.05 86.05 85.62
##   [235] 84.84 83.75 84.23 86.60 86.60 86.60 87.27 91.36 91.90
##   [244] 91.99 91.59 91.59 91.59 92.71 93.20 94.25 95.81 94.77
##   [253] 94.77 94.77 93.55 92.58 93.25 93.47 93.56 93.56 93.56
##   [262] 93.50 93.40 92.73 92.28 91.59 91.59 91.59 92.09 92.50
##   [271] 92.64 92.59 92.26 92.26 92.26 92.56 91.90 91.73 92.21
##   [280] 91.87 91.87 91.87 91.33 91.43 90.70 90.73 89.20 89.20
##   [289] 89.20 91.02 91.27 91.26 91.12 91.90 91.90 91.90 90.06
##   [298] 87.59 87.74 87.32 89.37 89.37 89.37 89.88 89.54 89.54
##   [307] 90.32 91.44 91.44 91.44 92.70 92.61 92.17 91.72 92.17
##   [316] 92.17 92.17 92.01 92.27 93.45 94.83 95.34 95.34 95.34
##   [325] 95.97 95.38 95.34 95.32 95.07 95.07 95.07 95.23 95.53
##   [334] 94.89 94.93 94.73 94.73 94.73 85.53 86.40 87.29 87.99
##   [343] 88.32 88.32 88.32 89.04 89.54 90.39 89.98 89.54 89.54

```

##	[352]	89.54	89.67	90.11	90.28	90.91	91.32	91.32	91.32	91.32
##	[361]	91.32	90.73	91.76	92.70	92.70	92.70	92.70	92.18	92.42
##	[370]	92.88	92.93	92.93	92.93	92.12	92.46	92.00	93.53	94.28
##	[379]	94.28	94.28	93.16	93.62	94.04	94.61	95.90	95.90	95.90
##	[388]	97.18	97.14	96.18	96.76	97.15	97.15	97.15	96.53	96.65
##	[397]	96.11	94.89	95.54	95.54	95.54	95.48	95.38	94.73	94.35
##	[406]	93.86	93.86	93.86	93.95	94.53	94.41	94.50	94.50	94.50
##	[415]	94.50	94.55	93.98	93.69	92.51	92.76	92.76	92.76	92.59
##	[424]	92.50	92.54	92.23	90.90	90.90	90.90	90.04	91.34	91.36
##	[433]	91.69	91.78	91.78	91.78	91.48	91.01	90.88	89.35	89.15
##	[442]	89.15	89.15	88.11	88.17	87.35	87.32	87.36	87.36	87.36
##	[451]	88.14	87.67	88.35	86.82	87.39	87.39	87.39	88.00	86.26
##	[460]	86.56	86.11	86.62	86.62	86.62	86.54	86.26	86.69	87.10
##	[469]	87.68	87.68	87.68	87.68	87.02	86.80	87.16	87.48	87.48
##	[478]	87.48	87.65	86.83	86.82	86.77	86.70	86.70	86.70	86.25
##	[487]	85.95	86.42	86.34	86.01	86.01	86.01	85.88	85.69	85.86
##	[496]	85.21	85.57	85.57	85.57	85.26	84.82	83.88	84.89	84.70
##	[505]	84.70	84.70	84.43	84.57	84.84	84.71	84.66	84.66	84.66
##	[514]	84.53	84.40	84.34	84.35	83.74	83.74	83.74	83.47	82.86
##	[523]	82.83	82.91	82.85	82.85	82.85	82.60	82.89	83.10	83.02
##	[532]	82.18	82.18	82.18	83.60	83.05	82.71	82.37	81.96	81.96
##	[541]	81.96	81.80	80.56	80.04	79.93	82.13	82.13	82.13	80.89
##	[550]	80.91	80.58	79.68	79.68	79.68	79.68	79.51	79.44	78.55
##	[559]	78.38	77.32	77.32	77.32	76.37	75.10	75.14	75.30	75.38
##	[568]	75.38	75.38	75.00	75.00	74.73	74.50	74.55	74.55	74.55
##	[577]	74.30	74.74	73.96	73.96	74.25	74.25	74.25	74.25	73.47
##	[586]	73.77	73.47	73.49	73.49	73.49	73.60	72.57	72.57	71.48
##	[595]	70.76	70.76	70.76	70.37	69.99	69.39	69.81	69.72	69.72
##	[604]	69.72	70.19	70.48	70.90	71.23	68.55	68.55	68.55	68.27
##	[613]	69.28	69.11	68.62	67.69	67.69	67.69	66.92	65.92	64.53
##	[622]	64.41	64.01	64.01	64.01	63.37	63.18	64.55	65.96	65.58
##	[631]	65.58	65.58	66.65	68.04	67.79	69.66	68.81	68.81	68.81
##	[640]	69.80	68.51	69.21	68.67	70.10	70.10	70.10	70.31	70.64
##	[649]	71.29	71.47	71.82	71.82	71.82	71.15	71.46	71.51	71.04
##	[658]	70.54	70.54	70.54	71.16	71.18	70.72	71.69	72.14	72.14
##	[667]	72.14	72.36	72.75	73.01	73.01	73.01	73.01	73.01	72.74
##	[676]	72.61	72.04	71.85	72.02	72.13	72.13	72.87	72.49	72.67
##	[685]	73.00	73.37	73.37	73.37	73.02	73.04	73.47	73.71	73.77
##	[694]	73.77	73.77	73.83	73.98	74.27	74.52	75.93	75.93	75.93
##	[703]	76.67	76.29	76.27	76.56	76.29	76.29	76.29	76.30	75.88
##	[712]	76.23	75.97	76.03	76.03	76.03	75.98	75.51	74.90	74.77
##	[721]	75.52	76.44	76.44	76.44	76.44	76.44	75.59	75.56	75.56
##	[730]	75.56	75.56	75.56	75.38	75.08	74.63	74.63	74.63	75.13
##	[739]	76.05	77.07	76.72	76.81	76.81	76.81	76.85	76.91	77.45
##	[748]	77.58	77.22	77.22	77.22	77.22	77.53	77.50	77.41	77.67
##	[757]	77.67	77.67	77.71	77.67	77.75	77.64	77.69	77.69	77.69
##	[766]	77.41	77.23	77.59	77.35	76.87	76.87	76.87	76.85	77.43
##	[775]	77.76	78.77	81.05	81.05	81.05	81.31	81.53	81.70	81.86
##	[784]	81.31	81.31	81.31	81.56	82.15	83.08	84.26	83.91	83.91
##	[793]	83.91	84.90	85.04	85.36	86.07	86.19	86.19	86.19	86.19
##	[802]	86.68	85.84	85.80	85.73	85.73	85.73	86.05	86.01	85.96
##	[811]	86.26	86.77	86.77	86.77	87.43	88.15	88.52	88.96	89.78
##	[820]	89.78	89.78	89.78	89.47	91.22	90.60	90.23	90.23	90.23
##	[829]	89.41	87.59	87.88	88.37	87.76	87.76	87.76	88.05	88.06

##	[838]	88.08	89.20	89.92	89.92	89.92	90.18	92.17	92.45	92.99
##	[847]	94.12	94.12	94.12	95.64	94.41	94.41	94.10	93.40	93.40
##	[856]	93.40	92.81	91.50	92.10	92.28	91.33	91.33	91.33	91.25
##	[865]	88.84	88.98	87.86	88.49	88.49	88.49	87.25	87.66	86.22
##	[874]	86.99	87.50	87.50	87.50	86.73	87.16	85.98	85.61	85.87
##	[883]	85.87	85.87	84.36	85.19	85.43	85.66	85.36	85.36	85.36
##	[892]	84.16	84.19	84.12	84.22	83.90	83.90	83.90	84.29	84.58
##	[901]	84.52	84.66	83.88	83.88	83.88	83.81	83.88	83.07	82.87
##	[910]	83.52	83.52	83.52	83.49	83.37	83.31	83.38	83.73	83.73
##	[919]	83.73	84.11	85.00	86.32	85.54	85.69	85.69	85.69	85.74
##	[928]	85.44	85.24	85.54	85.29	85.29	85.29	85.26	85.25	85.06
##	[937]	85.08	84.69	84.69	84.69	84.52	84.64	85.91	86.49	85.64
##	[946]	85.64	85.64	85.76	86.52	86.68	87.08	88.19	87.76	87.76
##	[955]	88.48	88.01	87.85	87.85	87.85	87.85	87.85	87.70	87.36
##	[964]	88.32	88.51	88.73	88.73	88.73	89.03	88.90	88.60	88.54
##	[973]	88.73	88.73	88.73	88.72	87.95	87.60	88.49	87.49	87.49
##	[982]	87.49	87.39	87.53	86.80	86.76	86.26	86.26	86.26	85.97
##	[991]	85.91	85.87	86.45	86.30	86.30	86.30	86.83	86.12	85.42
##	[1000]	85.99	86.61	86.61	86.61	87.21	88.17	87.67	88.36	87.65
##	[1009]	87.65	87.65	87.34	86.99	86.99	85.95	85.48	85.48	85.48
##	[1018]	85.06	85.59	85.95	85.68	86.20	86.20	86.20	85.83	86.02
##	[1027]	85.79	85.69	85.22	85.22	85.22	85.07	85.08	84.70	85.57
##	[1036]	85.57	85.57	85.57	85.10	84.38	84.62	85.25	85.99	85.99
##	[1045]	85.99	85.66	85.69	86.36	85.85	86.96	86.96	86.96	87.45
##	[1054]	88.74	88.00	88.47	88.29	88.29	88.29	87.14	87.39	87.83
##	[1063]	87.64	88.05	88.05	88.05	87.36	87.49	87.10	86.31	86.35
##	[1072]	86.35	86.35	86.33	85.97	86.39	86.22	85.87	85.87	85.87
##	[1081]	84.99	84.61	84.34	84.00	84.39	84.38	84.38	84.56	84.40
##	[1090]	84.40	84.40	84.40	84.40	84.40	84.26	84.78	84.78	86.34
##	[1099]	87.10	87.10	87.10	86.54	87.92	88.45	88.13	87.58	87.58
##	[1108]	87.58	87.89	88.55	88.81	89.36	89.87	89.87	89.87	89.59
##	[1117]	89.48	89.16	89.12	89.08	89.08	89.08	88.40	88.50	88.31
##	[1126]	87.99	87.79	87.79	87.79	87.69	87.86	88.14	89.23	90.66
##	[1135]	90.66	90.66	90.89	91.20	90.86	91.24	91.03	91.03	91.03
##	[1144]	91.60	91.41	91.79	92.11	92.40	92.40	92.40	91.80	92.21
##	[1153]	92.56	92.32	92.32	92.32	92.32	92.39	92.86	93.31	94.53
##	[1162]	94.13	94.13	94.13	93.77	93.77	94.15	94.12	94.64	94.64
##	[1171]	94.64	94.22	95.05	95.08	95.60	95.34	95.34	95.34	94.49
##	[1180]	94.55	94.67	95.63	95.82	95.82	95.82	96.70	96.77	97.09
##	[1189]	98.11	98.48	98.48	98.48	99.30	100.36	102.18	104.01	103.07
##	[1198]	103.07	103.07	103.34	103.74	103.78	103.74	102.47	102.47	102.47
##	[1207]	102.47	103.36	103.72	105.61	106.22	106.22	106.22	104.08	105.28
##	[1216]	107.91	107.91	109.02	109.02	109.02	108.91	109.15	110.66	111.34
##	[1225]	112.63	112.63	112.63	113.82	114.41	115.16	115.65	116.79	116.79
##	[1234]	116.79	116.80	116.44	117.28	117.85	116.68	116.68	116.68	117.75
##	[1243]	118.61	119.45	119.85	121.73	121.73	121.73	120.61	121.33	123.01
##	[1252]	123.71	123.85	123.85	123.85	124.08	126.28	128.45	129.47	129.54
##	[1261]	129.54	129.54	131.13	132.18	132.25	131.89	133.44	133.44	133.44
##	[1270]	133.26	133.01	133.98	134.20	134.75	134.75	134.75	134.97	134.95
##	[1279]	133.76	134.49	135.01	135.01	135.01	134.71	135.39	135.39	136.03
##	[1288]	136.54	136.54	136.54	136.58	138.65	139.79	140.71	141.47	141.47
##	[1297]	141.47	140.77	141.04	141.54	142.59	142.74	142.74	142.74	143.75
##	[1306]	146.52	150.55	154.33	156.64	156.64	156.64	156.90	155.87	154.55
##	[1315]	151.73	152.24	152.24	152.24	155.37	157.40	159.50	160.40	160.40

```

## [1324] 160.40 160.40 161.33 162.09 162.53 163.45 164.07 164.07 164.07
## [1333] 164.56 166.34 167.48 168.15 166.98 166.98 166.98 169.04 170.88
## [1342] 175.08 181.30 184.13 184.13 184.13 189.35 185.51 187.22 185.54
## [1351] 181.17 181.17 181.17 182.85 185.56 184.77 188.14 188.53 188.53
## [1360] 188.53 188.44 185.92 181.23 173.35 181.39 181.39 181.39 177.08
## [1369] 176.21 173.94 174.70 174.93 174.93 174.93 172.57 175.53 177.60
## [1378] 178.94 179.68 179.68 179.68 177.76 177.19 176.28 178.71 179.28
## [1387] 179.28 179.28 178.69 178.28 178.52 177.12 176.58 176.58 176.58
## [1396] 173.46 171.49 170.03 167.69 163.07 163.07 163.07 167.46 167.84
## [1405] 167.81 166.71 167.15 167.15 167.15 167.33 166.23 163.42 164.46
## [1414] 164.62 164.62 164.62 160.97 163.84 165.13 167.85 166.11 166.11
## [1423] 166.11 166.59 167.42 167.14 166.57 166.43 166.43 166.43 165.60
## [1432] 165.64 165.68 165.94 166.09 166.09 166.09 167.65 168.50 168.60
## [1441] 170.77 171.61 171.61 171.61 171.60 171.24 171.24 172.41 172.63
## [1450] 172.63 172.63 172.21 172.87 171.44 171.44 171.44 171.44 171.44
## [1459] 171.88 171.91 174.48 174.48 174.82 174.82 174.82 177.35 181.14
## [1468] 185.17 184.81 184.02 184.02 184.02 184.61 185.18 185.03 187.24
## [1477] 188.10 188.10 188.10 189.26 188.78 189.49 189.03 189.39 189.39
## [1486] 189.39 189.12 190.02 190.70 191.93 191.65 191.65 191.65 192.38
## [1495] 192.54 192.22 192.62 192.48 192.48 192.48 192.93 194.21 195.24
## [1504] 197.64 198.08 198.08 198.08 198.08 198.74 198.80 202.14 205.31
## [1513] 205.31 205.31 205.68 204.90 204.93 204.60 204.01 204.01 204.01
## [1522] 204.69 204.88 206.72 206.93 207.77 207.77 207.77 209.37 210.03
## [1531] 210.47 210.47 210.64 210.64 210.64 210.82 211.63 212.95 213.72
## [1540] 215.30 215.30 215.30 216.54 217.80 218.89 219.81 220.57 220.57
## [1549] 220.57 219.23 218.29 217.80 222.91 227.73 227.73 227.73 227.35
## [1558] 227.50 227.34 226.18 225.69 225.69 225.69 225.69 224.21 224.52
## [1567] 222.60 226.28 226.28 226.28 227.57 226.35 224.92 225.43 225.05
## [1576] 225.05 225.05 224.25 222.22 224.05 222.77 221.26 221.26 221.26
## [1585] 222.05 220.20 219.87 219.54 219.07 219.07 219.07 217.94 215.96
## [1594] 219.32 220.07 220.13 220.13 220.13 217.96 217.71 218.59 217.37
## [1603] 217.71 217.71 217.71 217.03 215.69 213.80 210.95 206.67 206.67
## [1612] 206.67 208.55 207.16 207.29 205.83 204.36 204.36 204.36 205.98
## [1621] 208.20 209.46 208.62 209.22 209.22 209.22 208.89 208.39 209.13
## [1630] 208.17 211.68 211.68 211.68 210.16 209.69 209.00 209.00 209.01
## [1639] 209.01 209.01 207.55 207.53 206.31 206.25 204.21 204.21 204.21
## [1648] 203.15 203.15 204.77 205.41 205.99 205.99 205.99 205.84 206.74
## [1657] 207.34 207.52 206.16 206.16 206.16 207.12 205.74 206.85 206.08
## [1666] 205.95 205.95 205.95 206.08 204.99 206.18 206.93 206.80 206.80
## [1675] 206.80 205.67 206.49 206.42 206.00 206.27 206.27 206.27 205.78
## [1684] 208.54 208.21 209.76 209.77 209.77 209.77 212.65 211.05 210.37
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## [3835] 394.22 394.09 393.13 393.68 394.20 393.44 393.61 391.94 390.03
## [3844] 388.99 388.60 391.18 391.43 391.42 391.68 392.15 392.29 392.68
## [3853] 396.11 395.68 393.47 394.34 392.07 395.03 393.17 393.00 393.77
## [3862] 396.39 396.22 395.97 394.31 395.20 393.62 389.76 393.83 391.77
## [3871] 392.28 394.01 395.20 399.71 399.73 400.16 400.39 400.20 400.24
## [3880] 399.62 400.24 398.72 398.58 399.26 402.38 402.52 403.95 402.86
## [3889] 403.74 403.22 402.80 403.83 403.99 406.10 407.40 405.33 408.72
## [3898] 411.87 410.18 411.12 411.93 413.64 413.18 413.03 413.65 412.08
## [3907] 412.03 414.22 411.85 413.10 413.10 409.90 410.20 409.65 409.70
## [3916] 411.45 411.43 412.54 413.17 413.39 414.92 414.04 416.60 416.71
## [3925] 416.97 416.82 415.96 416.85 415.14 416.27 415.13 415.33 416.58
## [3934] 413.74 409.90 411.46 412.87 412.99 411.09 413.22 413.66 414.24
## [3943] 414.97 415.93 414.80 414.55 412.91 413.66 412.20 412.43 413.98
## [3952] 415.23 415.65 421.88 421.52 422.73 421.01 421.98 420.96 419.85
## [3961] 419.49 419.16 418.23 417.50 417.61 418.75 420.77 419.22 419.66
## [3970] 417.96 419.31 418.46 417.08 417.45 417.91 417.85 417.88 417.47
## [3979] 417.62 416.49 416.65 416.83 415.00 414.83 416.12 414.61 414.45
## [3988] 415.51 415.40 414.75 414.45 412.80 412.37 412.23 410.93 411.57
## [3997] 413.24 412.57 412.23 412.62 413.20 411.30 409.75 407.07 407.03
## [4006] 407.08 407.54 407.80 407.48 408.15 409.52 409.03 405.75 407.83
## [4015] 408.11 408.94 410.59 415.20 421.60 434.05 436.68 436.72 436.18
## [4024] 437.90 437.06 438.85 440.64 440.39 444.69 445.89 446.31 447.79
## [4033] 449.07 451.20 454.86 451.37 444.89 450.19 452.56 451.34 453.61
## [4042] 452.37 451.29 451.28 452.29 454.45 455.17 456.97 457.49 457.01
## [4051] 455.92 456.16 457.55 456.71 455.48 455.49 457.75 456.55 454.16
## [4060] 455.91 457.99 440.72 445.97 449.25 445.95 445.85 444.19 443.45
## [4069] 439.75 429.67 435.74 441.27 442.09 443.09 446.94 452.59 451.92
## [4078] 451.57 453.12 450.60 451.48 452.73 453.10 454.10 453.61 451.25
## [4087] 453.32 454.63 453.71 453.48 449.13 453.60 449.89 450.98 451.11
## [4096] 453.89 451.47 450.59 450.96 451.46 450.22 451.21 449.71 449.02
## [4105] 455.07 453.52 454.37 461.01 462.21 461.92 458.41 460.25 461.76
## [4114] 463.32 460.48 452.80 453.56 454.67 451.74 452.87 461.20 464.75
## [4123] 470.30 471.79 471.32 471.67 470.43 474.20 472.97 474.11 473.34
## [4132] 471.47 467.35 467.37 466.91 467.79 470.64 469.27 470.55 471.72
## [4141] 471.95 471.87 472.41 475.01 476.56 477.63 476.22 475.83 475.11
## [4150] 475.00 474.68 475.80 475.32 476.87 476.27 475.17 474.44 474.53
## [4159] 472.81 471.75 472.65 472.85 473.00 471.33 471.42 469.58 469.12
## [4168] 467.98 457.15 449.96 457.74 459.62 460.09 456.60 457.20 457.01
## [4177] 457.55 459.43 458.71 455.11 455.86 456.76 456.78 455.93 455.43
## [4186] 455.98 457.20 455.84 457.05 456.93 456.83 456.01 455.26 456.88
## [4195] 456.45 458.03 458.65 459.28 458.29 458.40 458.44 457.59 456.82
## [4204] 455.86 455.52 458.10 458.01 457.29 458.09 459.20 459.73 457.87
## [4213] 458.36 456.63 455.63 456.43 455.66 452.77 452.00 451.63 451.86
## [4222] 453.21 450.99 448.86 449.42 450.05 450.44 449.92 451.35 450.50
## [4231] 449.82 449.40 449.30 450.25 450.51 450.16 450.13 449.67 452.22

```

```

## [4240] 450.95 452.28 451.93 452.61 451.56 451.05 453.93 461.91 456.57
## [4249] 458.92 457.99 456.89 454.37 458.36 456.69 456.40 455.09 455.07
## [4258] 457.89 453.74 458.34 455.21 452.00 451.80 454.73 453.65 452.47
## [4267] 452.42 454.17 455.69 456.67 459.10 459.77 460.64 460.57 457.75
## [4276] 457.77 457.77 459.79 460.90 460.70 461.19 464.41 463.62 463.75
## [4285] 458.94 458.45 465.07 464.11 464.51 465.26 465.97 471.22 470.24
## [4294] 470.04 470.42 470.66 472.92 473.49 473.30 474.53 474.45 477.42
## [4303] 480.02 481.67 480.39 480.25 481.52 484.52 482.35 482.95 483.22
## [4312] 484.04 481.62 484.94 484.36 485.76 486.95 489.61 490.65 489.67
## [4321] 491.05 490.35 492.01 492.44 492.96 493.06 491.72 493.21 493.40
## [4330] 495.68 498.66 499.29 496.62 497.50 497.53 497.65 494.71 495.29
## [4339] 494.07 492.94 491.99 493.99 498.82 498.92 496.77 494.63 493.67
## [4348] 494.49 494.08 492.26 493.46 490.25 489.53 490.17 490.04 495.72
## [4357] 495.69 497.26 498.93 499.63 497.22 497.22 497.13 497.48 498.82
## [4366] 501.83 501.62 501.22 503.77 502.26 501.95 500.38 499.27 498.08
## [4375] 498.58 500.31 501.10 499.39 500.06 501.57 496.89 497.53 498.75
## [4384] 495.43 497.96 501.20 497.54 497.46 496.13 498.60 498.40 497.48
## [4393] 494.30 494.67 495.40 500.85 500.66 502.62 504.29 502.53 503.40
## [4402] 500.83 502.16 500.03 498.96 497.43 499.34 499.13 499.57 500.58
## [4411] 500.24 499.54 501.05 501.71 497.47 498.30 497.27 497.63 495.73
## [4420] 497.19 498.28 497.56 498.40 496.34 495.11 478.47 483.14 484.52
## [4429] 488.49 490.61 490.92 485.30 486.44 487.21 485.91 486.96 484.29
## [4438] 486.74 487.31 487.41 485.91 486.07 487.59 486.72 487.44 486.42
## [4447] 485.58 485.16 483.69 483.09 481.61 478.14 479.82 481.71 483.48
## [4456] 481.69 485.40 482.50 482.28 482.62 481.96 480.18 480.70 482.38
## [4465] 482.06 481.43 481.95 483.27 484.40 482.68 483.13 479.46 479.13
## [4474] 479.42 478.59 480.00 481.42 478.55 478.39 481.02 482.24 479.92
## [4483] 480.74 480.14 483.52 481.82 481.41 483.46 484.30 485.54 484.61
## [4492] 484.51 483.82 484.12 485.39 482.78 486.94 487.10 485.49 487.77
## [4501] 486.27 485.61 483.46 485.21 483.67 481.65 481.43 483.26 482.36
## [4510] 483.21 482.86 482.39 483.02 482.74 483.07 485.99 485.46 487.36
## [4519] 488.99 483.37 486.99 486.97 486.51 488.88 485.81 488.00 483.67
## [4528] 484.04 482.04 479.98 480.62 481.09 482.22 483.18 483.13 487.87
## [4537] 485.23 484.59 486.62 487.37 486.91 486.65 484.38 485.13 484.42
## [4546] 482.52 483.20 482.71 484.28 482.86 481.72 482.12 484.53 484.58
## [4555] 488.64 488.12 488.26 491.32 490.98 494.29 497.14 503.01 499.61
## [4564] 501.01 502.70 499.46 501.65 502.10 502.41 503.29 504.30 503.66
## [4573] 507.08 505.61 505.45 508.34 501.01 497.31 492.80 493.50 494.69
## [4582] 495.24 493.53 493.97 497.45 496.55 499.46 498.84 503.68 502.32
## [4591] 501.71 501.12 499.98 502.29 503.52 503.85 503.17 505.83 507.82
## [4600] 507.27 507.67 511.34 509.50 511.47 511.79 512.57 509.17 507.27
## [4609] 508.74 508.83 513.50 513.71 515.39 515.46 515.74 517.15 517.95
## [4618] 515.27 513.97 515.13 515.62 514.43 513.66 510.76 511.20 511.62
## [4627] 510.83 511.49 511.43 507.19 508.44 509.53 509.71 509.58 509.81
## [4636] 500.61 503.35 508.30 510.69 508.70 511.20 515.04 519.57 523.40
## [4645] 520.54 521.98 526.95 527.09 523.19 525.28 528.35 532.97 537.47
## [4654] 545.26 544.57 547.00 547.92 546.13 540.37 543.14 544.40 538.73
## [4663] 541.58 537.71 536.23 538.04 538.72 538.60 535.14 532.74 533.97
## [4672] 533.70 540.35 536.87 536.84 537.88 537.35 537.88 536.75 536.39
## [4681] 534.13 535.06 534.73 534.93 536.02 537.55 538.27 537.87 540.10
## [4690] 539.71 539.04 539.79 539.79 542.19 541.91 543.41 544.78 541.86
## [4699] 542.13 541.77 543.34 544.02 543.58 542.38

```

```
class(data)
```

```
## [1] "data.frame"
```

```
data=xts(data[, -2], order.by=as.Date(data[,2]))
```

```
monthly.omx <- data[ endpoints(data, on="months", k=1), ]
```

```
salis="Lithuania"
```

```
folderio_pav="Turnover in industry - consumer durables"
```

```
failo_pav="sts_intv_m_1_Data.csv"
```

```
ilgalaikio_vartojimo_prekes=istraukimas(salis, folderio_pav, failo_pav)
```

```
folderio_pav="Turnover and volume of sales in wholesale and retail trade - monthly data"
```

```
failo_pav="sts_trtu_m_1_Data.csv"
```

```
apyvarta=istraukimas(salis, folderio_pav, failo_pav)
```

*#didmeninės ir mažmeninės*

```
indikatorius="Construction confidence indicator"
```

```
folderio_pav="Sentiment indicators - monthly data"
```

```
failo_pav="ei_bssi_m_r2_1_Data.csv"
```

```
statybu_pasitikejimas=istraukimas2(salis, folderio_pav, failo_pav, indikatorius)
```

```
indikatorius="Services Confidence Indicator"
```

```
folderio_pav="Sentiment indicators - monthly data"
```

```
failo_pav="ei_bssi_m_r2_1_Data.csv"
```

```
paslaugu_pasitikejimas=istraukimas2(salis, folderio_pav, failo_pav, indikatorius)
```

```
indikatorius="Consumer confidence indicator"
```

```
folderio_pav="Sentiment indicators - monthly data"
```

```
failo_pav="ei_bssi_m_r2_1_Data.csv"
```

```
vartotoju_pasitikejimas=istraukimas2(salis, folderio_pav, failo_pav, indikatorius)
```

```
indikatorius="Retail confidence indicator"
```

```
folderio_pav="Sentiment indicators - monthly data"
```

```
failo_pav="ei_bssi_m_r2_1_Data.csv"
```

```
mazmeninis_pasitikejimas=istraukimas2(salis, folderio_pav, failo_pav, indikatorius) #mažmeninės prekybos p
```

```
indikatorius="Industrial confidence indicator"
```

```
folderio_pav="Sentiment indicators - monthly data"
```

```
failo_pav="ei_bssi_m_r2_1_Data.csv"
```

```
pramones_pasitikejimas=istraukimas2(salis, folderio_pav, failo_pav, indikatorius)
```

```
indikatorius="Business activity (sales) development over the past 3 months"
```

```
folderio_pav="Mazmenine prekyba"
```

```
failo_pav="ei_bsrt_m_r2_1_Data.csv"
```

```
verslo_aktyvumas=istraukimas2(salis, folderio_pav, failo_pav, indikatorius)
```

```
indikatorius="Volume of stocks currently hold"
```

```
folderio_pav="Mazmenine prekyba"
```

```
failo_pav="ei_bsrt_m_r2_1_Data.csv"
```

```
turimos_akcijos=istraukimas2(salis, folderio_pav, failo_pav, indikatorius)
```

```

indikatorius="Expectations of the number of orders placed with suppliers over the next 3 months"
folderio_pav="Mazmenine prekyba"
failo_pav="ei_bsrt_m_r2_1_Data.csv"
uzsakymu_lukesciai=istraukimas2(salis,folderio_pav,failo_pav,indikatorius)

indikatorius="Employment expectations over the next 3 months"
folderio_pav="Mazmenine prekyba"
failo_pav="ei_bsrt_m_r2_1_Data.csv"
darbolygio_lukesciai=istraukimas2(salis,folderio_pav,failo_pav,indikatorius)

setwd("Infliacija")
data = read.csv("prc_hicp_mv12r_1_Data.csv")
data = data[data$GEO == salis,]
infliacija = data[,c(1,5)]
setwd('..')

```

## prasibandymai ir problemos

```

class(monthly.omx)
monthly.omx[["2011/"]]

```

## (blogas)

```

mod=lm(monthly.omx~ilgalaikio_vartojimo_prekes+apyvarta+statybu_pasitikejimas+paslaugu_pasitikejimas+vartotoju_
+pramones_pasitikejimas+verslo_aktyvumas+turimos_akcijos+uzsakymu_lukesciai+darbolygio_lukesciai+infliacija)

```

## auto arima?

```

fit <- auto.arima(monthly.omx, xreg=cbind(apyvarta[-c(length(apyvarta),length(apyvarta)-1),2])) #tslm?
fit <- tslm(y ~ x)

```