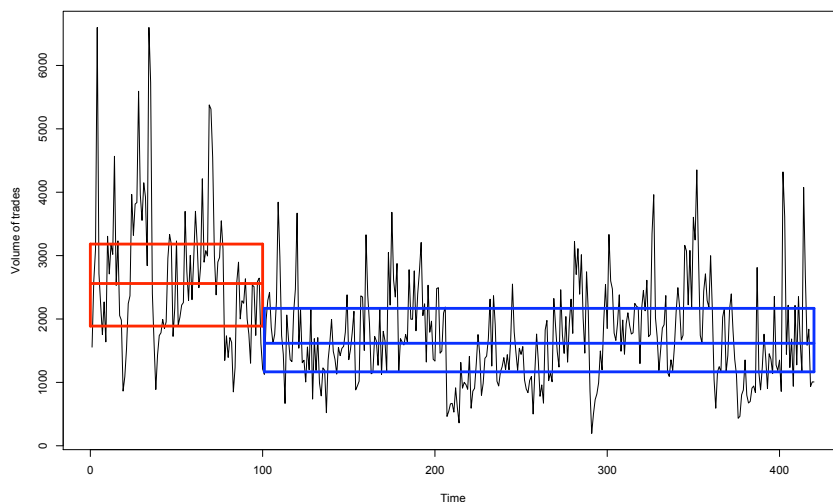**PROBLEM I.**
The file **volume.txt** (see the course webpage) contains daily volume of trades. a) Compute
the following 7 summary statistics for the volume data: mean, median, standard deviation,
skewness, excess kurtosis and 1st and 3rd quartiles. b) Repeat a) for two subsets of the
data: the first 100 observations and the last 320 observations. Do the means change? How
about the other summary statistics computed in a)? Comment your findings.

Summary	Obs. 1-420	Obs. 1-100	Obs. 101-420
Mean	1948.207143	2710.710000	1709.9250000
Median	1760.500000	2560.000000	1617.0000000
Standard deviation	964.031151	1161.469535	750.2098143
Skewness	1.350248	1.171235	0.8162449
Excess kurtosis	3.183508	1.838764	0.7690179
1st quartile	1255.500000	1888.500000	1166.5000000
3rd quartile	2392.750000	3182.000000	2167.7500000

c) Draw two boxplots: one for the first 100 observations and the other for the last 320
observations. Comment your findings.
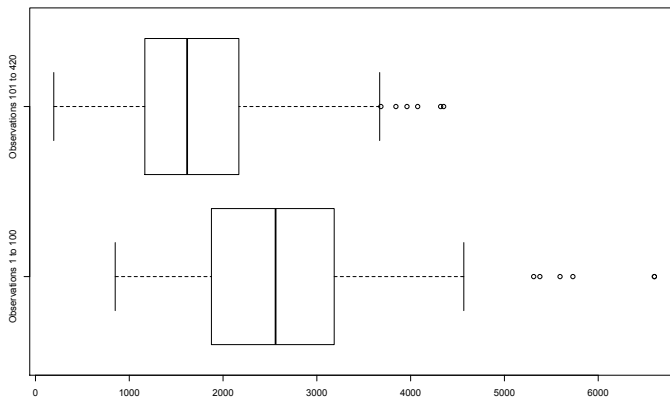
**There is a major decrease in the mean between the first 100 observations and the
remainder 320 observations. The same happens to the median. In addition, the first part
of the data exhibits larger variation than the second part. That is also observed by
comparing the ranges (3rd quartile minus 1st quartile) for both subsets. The time series
plot below illustrates these findings.**

PROBLEM II.
The file **nasdaq-djia.txt** (see the course webpage) contains daily returns for the NASDAQ
and DJIA indices for the years of 2000 to 2008 (9 whole years). Similarly to Question I,
compare the behavior of the returns per year for both indices. Comment your findings.

Summary	NASDAQ	DJIA
Mean	-0.02369156	-0.003066649
Median	0.04585755	0.035910155
St.Dev.	1.94564473	1.291561711
Skewness	0.30947313	0.205926863
Ex. Kurtosis	4.68758785	9.068463516
1st quartile	-0.95377162	-0.595139562
3rd quartile	0.87184340	0.582838523

**The following graph presents both time series along with respective boxplots. Notice
that the second set of boxplots exclude the outliers only for exposition.**
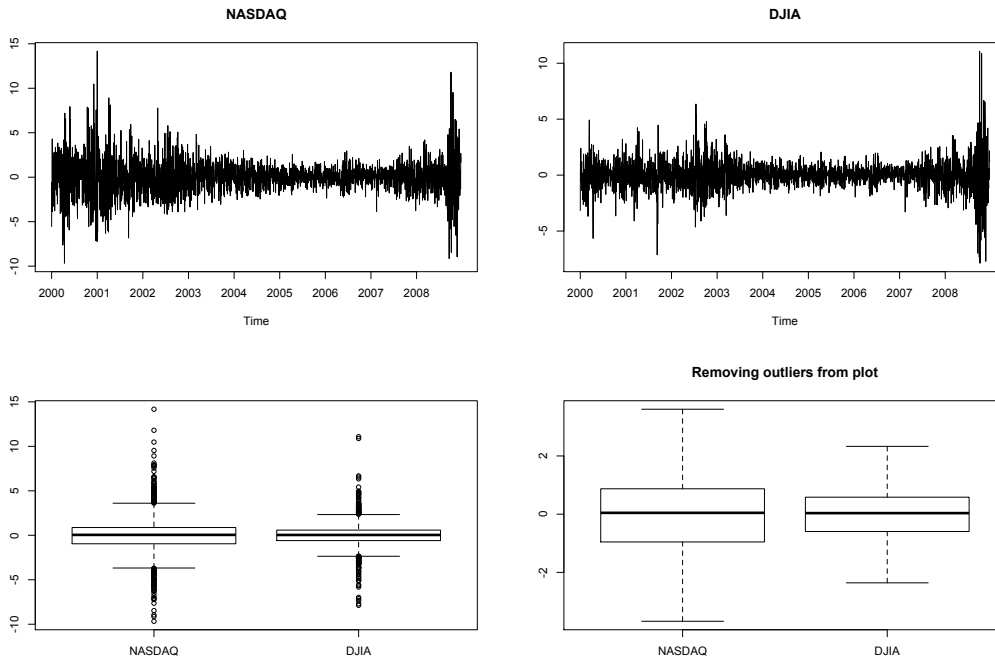
**The following graph presents the boxplots por year for both indices. It becomes clear
that the variability of the NASDAQ index is high in the years 2000-2002, then decreases
during the years between 2003-2007, and, finally, increases again during the 2008 crisis.
The same can be said, to a lesser extent, with regards to the DJIA index.**