Below procedures for *SX7E and FGBL.*

1. *Summary statistics of return (use % change column ) and volume can be seen in table 1,and also need a distribution graph.*

*Table

Description automatically generated*

1. Both daily logarithmic volume (daily volume) and volatilities (sum of the squared one minute returns of each day) can be seen in figure 2.

Chart

Description automatically generated

1. New announcements table, before and after filter comparisons (can be done by myself)
2. News filter: after filtering the below news announces, we see them as my “announcements days”.

*For SX7E:*

*ECB Main refinancing rate (EC)*

*CPI (EC)*

*GDP(EC)*

*S&P global eurozone manufacturing PMI (EC)*

*US:*

*FOMC Rates decisions*

*Change in nonfarm payrolls*

*Initial jobless claims*

*CPI*

*GDP*

*ISM Manufacturing*

*Below German areas news exclusively for FGBL:*

*IFO Business climate (GE)*

*ZEW Survey expectations (GE)*

*CPI(GE)*

*S&P global/BME Germany manufacturing PMI*

1. By observing the intraday pattern, I plot the average volatility over each minute of the day. First, only select non announcement days. Then, (on each day, on this minute, the squartroot of the average of squared returns) (and the average trading volume across each minute) Figure: Intraday pattern of vola and volume:

Diagram

Description automatically generated with medium confidence

*Volume intensity: 15min mean volume*

*Volatility: squaredroot of( sum of the return square.)*

plots the average volume intensity and volatilities changes before and after the Eurozone area news announcements.

Then plot the changes for US news change.

For FGBL only use the GE news.

Chart

Description automatically generated

1. Plot a figure depicts each events volume and vola change across our data set.

A picture containing chart

Description automatically generated

1. normalized the one-minute return and plot the pre and post volume:

Graphical user interface, shape, arrow

Description automatically generated

1. plot the vola and volume elasticity (use log)

Vola :log(στ )≡log(στ )−log(στ−) and

Volume:log(mτ )≡log(mτ )−log(mτ−)

The log difference Before 15 min and after 15min

Chart, scatter chart

Description automatically generated

1. plot a table : which sort of news announcements have the biggest vola & volume jump.
2. Analysis during the war times. (tbc)