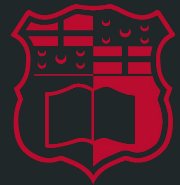




What influence has Brexit had on financial markets, in particular GBP/EUR exchange rates?

Michael Filletti

ICS5115



Assignment Overview

Data Collection

Data
Preprocessing

Correlation Test &
Date Identification

Exchange Rate
Significance Change

Topic Extraction

T

TIMES OF MALTA



REUTERS



Quandl

Correlation
Tests

Top 5% Test

Abnormal
Returns

LDA

Data Collection



BeautifulSoup



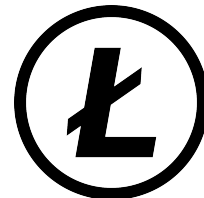
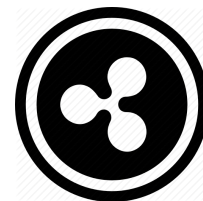
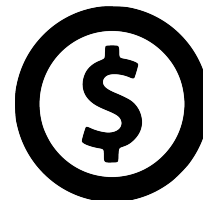
~~The Telegraph~~

~~the guardian~~

~~AP Associated Press~~



Quandl



Data Cleaning



Article Trimming

Text Preprocessing

Tokenization

Removal of Weekends



Ignore weekends

Consider daily average

Removal of irrelevant
columns

Data Merging & Storage



Date

Exchange Rate

Number of times Brexit
mentioned

Number of articles published

Descriptive Statistics

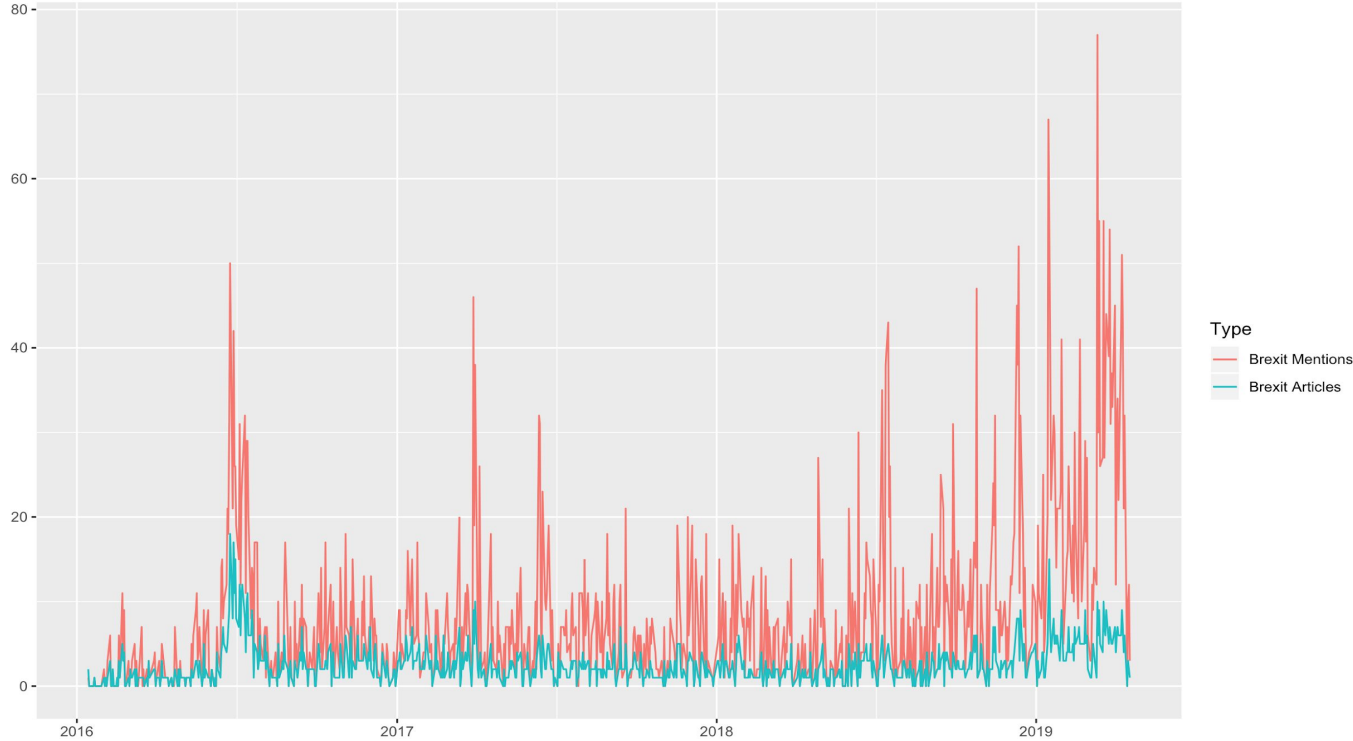


Fig 1: Number of Brexit Mentions vs Number of Brexit Articles

3,020
Articles

2.42 Articles
Daily

2.8 Brexit
Mentions
per Article

Correlation Test

Type of correlation	Brexit Mentions	Articles
Exchange Rate	-0.142	-0.080
% Change in Exchange Rate	-0.029	-0.059
Absolute % Change in Exchange Rate	0.078	0.160

Table 1: Overall Correlation

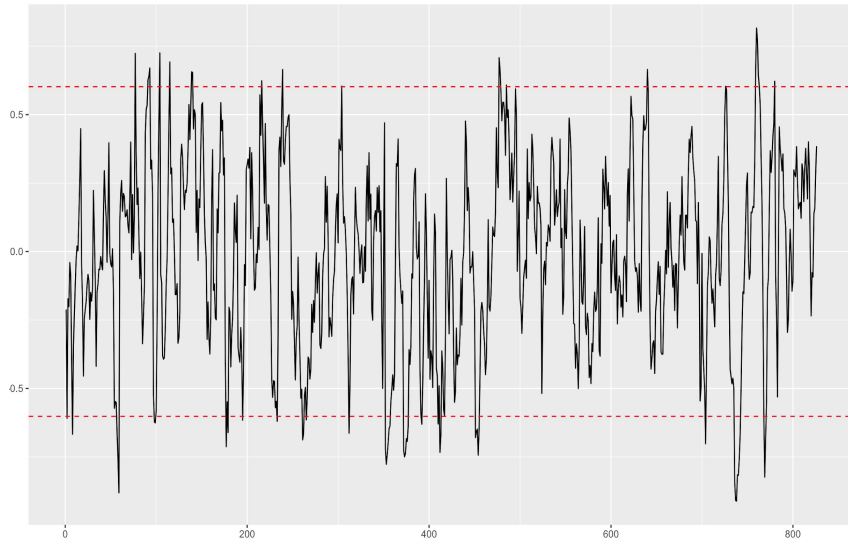


Fig 2: Window Correlation

Abnormal Returns

Date	Time	GBP/EUR	Abnormal Return	t_{AR}
17/06/2016	-5	1.270	0.004	0.630
20/06/2016	-4	1.292	0.019	2.914
21/06/2016	-3	1.303	0.009	1.367
22/06/2016	-2	1.302	0.000	0.034
23/06/2016	-1	1.306	0.003	0.513
24/06/2016	0	1.238	-0.050	-7.888
27/06/2016	1	1.199	-0.031	-4.829
28/06/2016	2	1.209	0.009	1.389
29/06/2016	3	1.211	0.003	0.431
30/06/2016	4	1.210	0.000	-0.077
01/07/2016	5	1.193	-0.013	-2.077

Table 2: Abnormal Returns carried out on 24/06/2016, with event window of (-5,5) and estimation period of 150 days

Date Identification

Table 3: Abnormal Returns carried out on days identified by Window Correlation Approach

Brexit Referendum

EUR/USD and GBP/USD rates indicate the change is not occurring due to the GBP value changing

Meaningful Vote Delay

Date	GBP/EUR	GBP/USD	EUR/USD
24/05/2016	0.013	0.01	-0.004
01/06/2016	-0.015	-0.004	0.002
06/06/2016	-0.018	-0.004	0.017
20/06/2016	0.018	0.024	0.007
24/06/2016	-0.051	-0.078	-0.029
27/06/2016	-0.032	-0.035	-0.007
07/10/2016	-0.022	-0.013	-0.004
01/12/2016	0.014	0.007	0
09/12/2016	0.013	-0.001	-0.018
25/01/2017	0.012	0.011	0
18/07/2017	-0.011	-0.001	0.007
21/07/2017	-0.01	0.002	0.013
13/10/2017	0.015	0.001	-0.005
29/11/2017	0.014	0.004	-0.006
29/11/2018	-0.01	-0.004	0.009
10/12/2018	-0.013	-0.015	0.005
31/12/2018	0.009	0.004	0
02/01/2019	-0.008	-0.01	-0.004
14/01/2019	0.008	0.001	-0.006
23/01/2019	0.009	0.008	0.001

Topic Extraction

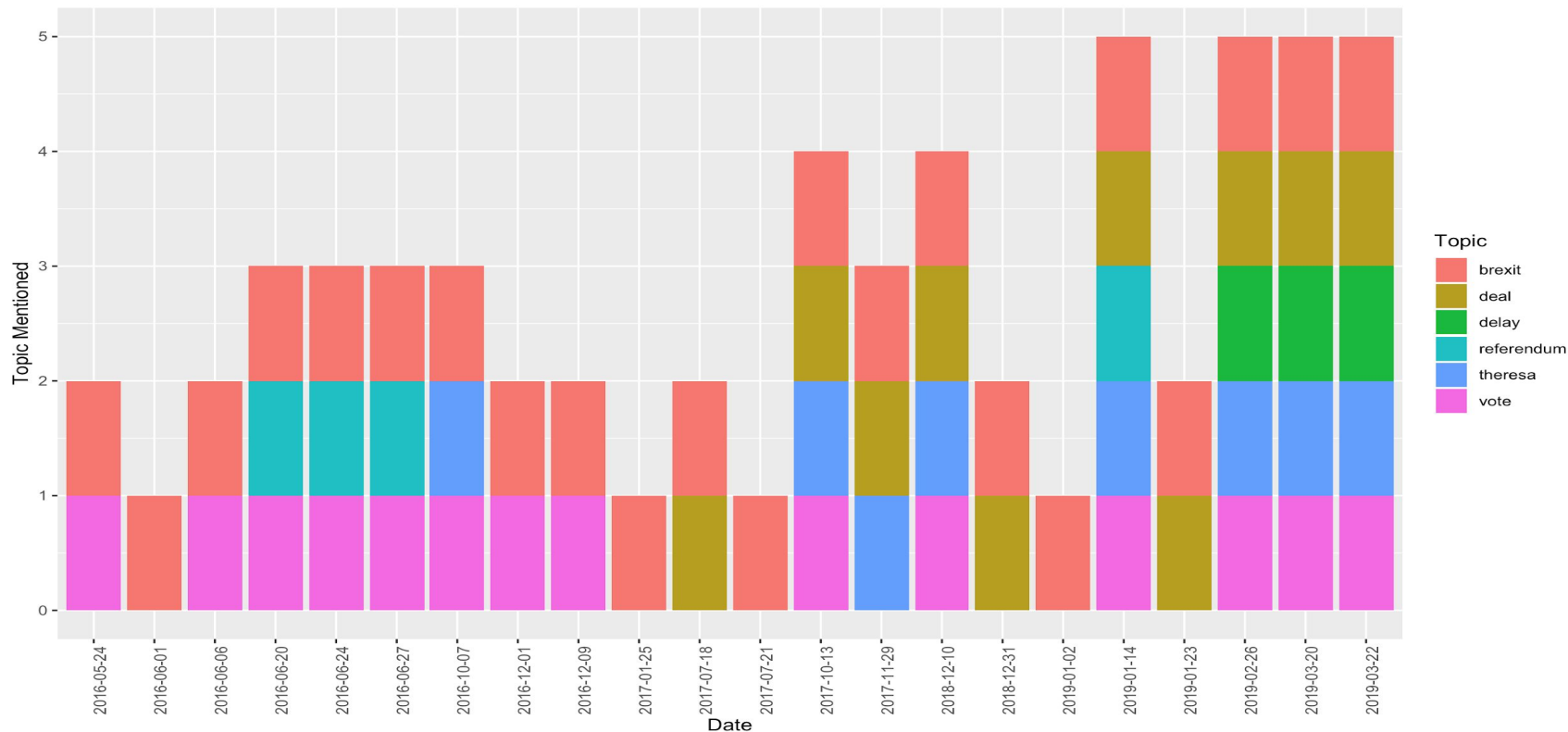


Fig 3: LDA carried out on Reuters and Times of Malta articles

Conclusions & Drawbacks

Results indicate an effect for some dates

Important to use a numeraire to be sure that effects are related to the GBP

Required more news sources

Test number of times other terms are mentioned (for example *theresa*, *delay*)

ARCH/GARCH Modelling