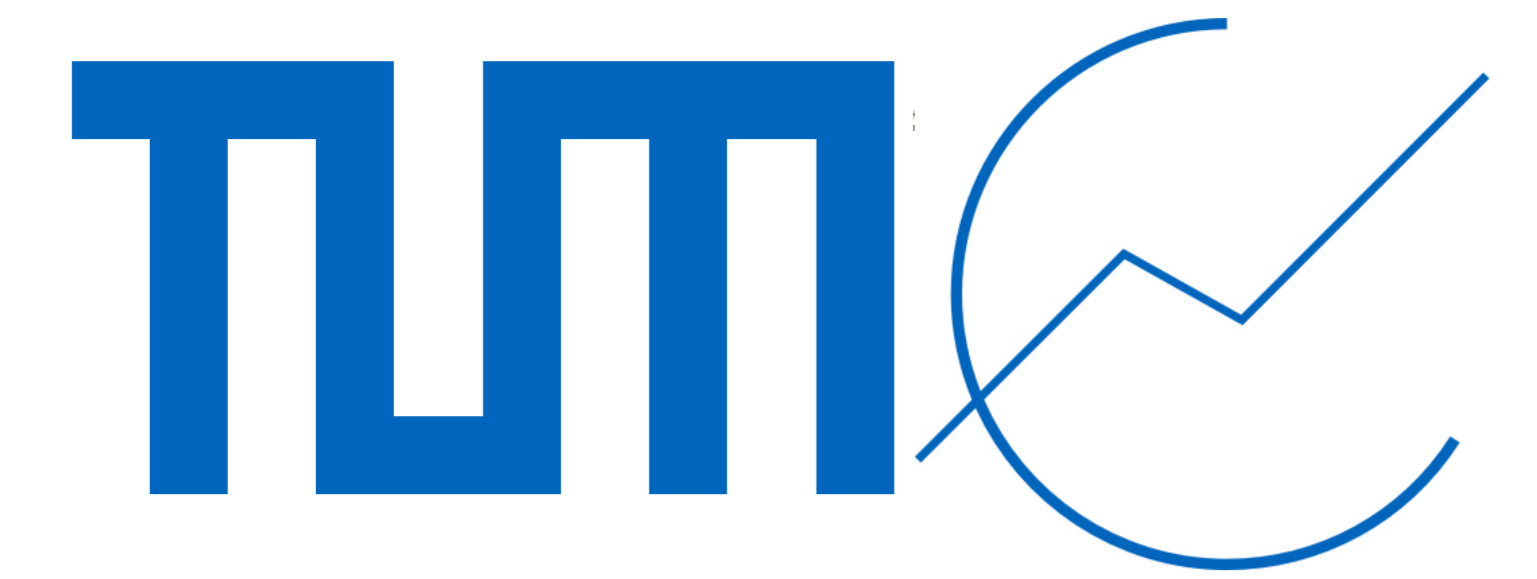


The impact of the regulatory debate on glyphosate in the EU on publicly traded pesticides producers



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Introduction

- Pesticides contribute to environmental pollution, loss of biodiversity and are harmful for human health (Larsen et al. 2017; Stehle & Schulz, 2015; Tang et al., 2021)
- Several pesticides have been banned in the past and discussions on a glyphosate ban have been and are intense in Europe (Butler, 2018; Finger 2018)

Motivation and objective

- Effect of a potential glyphosate ban on farmers and environment is analysed intensively
- But: There is no study investigating the influence on pesticides producers
- We analyse the impact of the regulatory debate on glyphosate in Europe (cf. Figure 1) on publicly traded pesticides producers

Methods and data

- Event study approach to estimate abnormal returns (AR) of the firms' stock prices due to the events during the debate
- $AR_{it} = R_{it} - \hat{\alpha} - \hat{\beta} * R_{Mt}$
 - i and t = subscripts for firm and year;
 - R = firm's stock return;
 - $\hat{\alpha}$ and $\hat{\beta}$ = estimated parameters;
 - R_M = return of market index
- Eight events between 2015 and 2017 (cf. Figure 1) for nine of the largest global pesticide producing companies
- Daily stock market data from Yahoo Finance

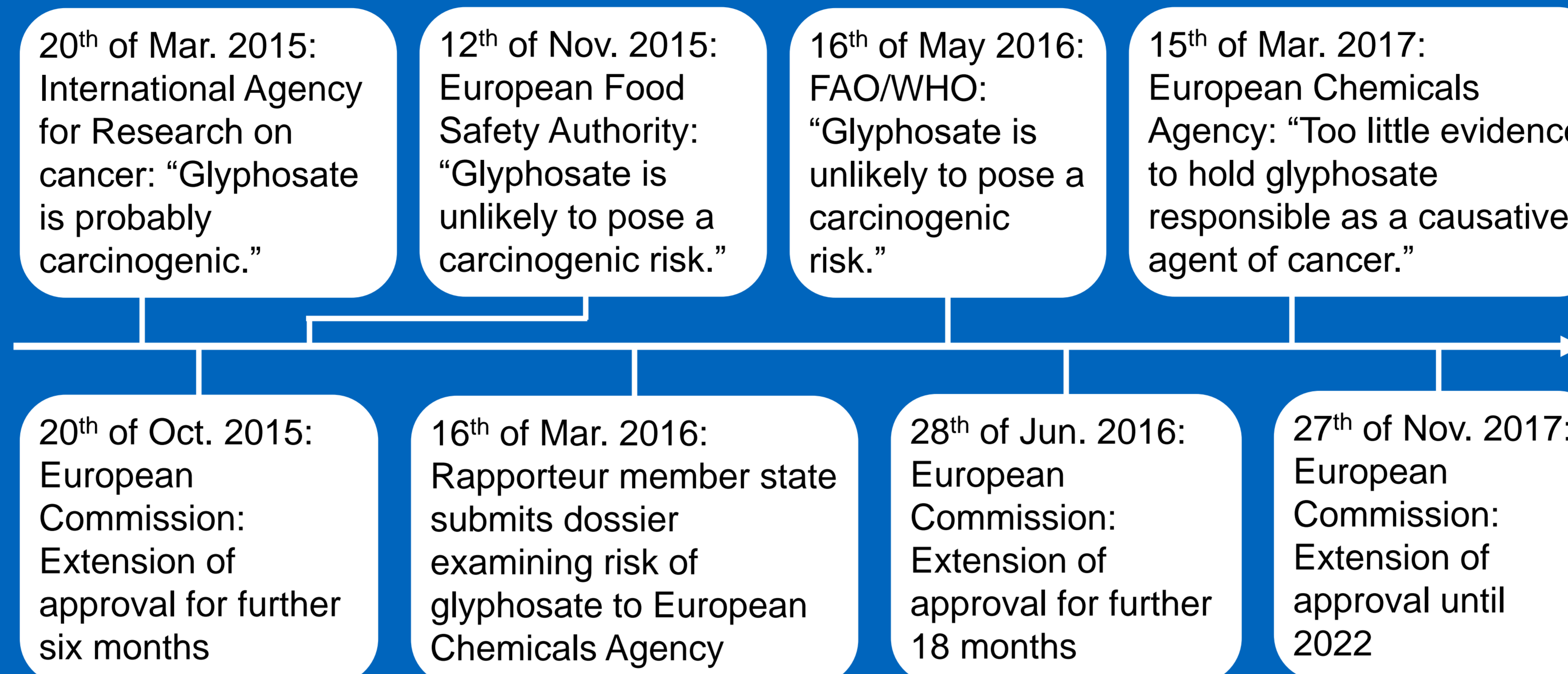


Figure 1: The glyphosate debate in Europe (2015-2017) based on Kudsk and Mathiassen (2020)

Results

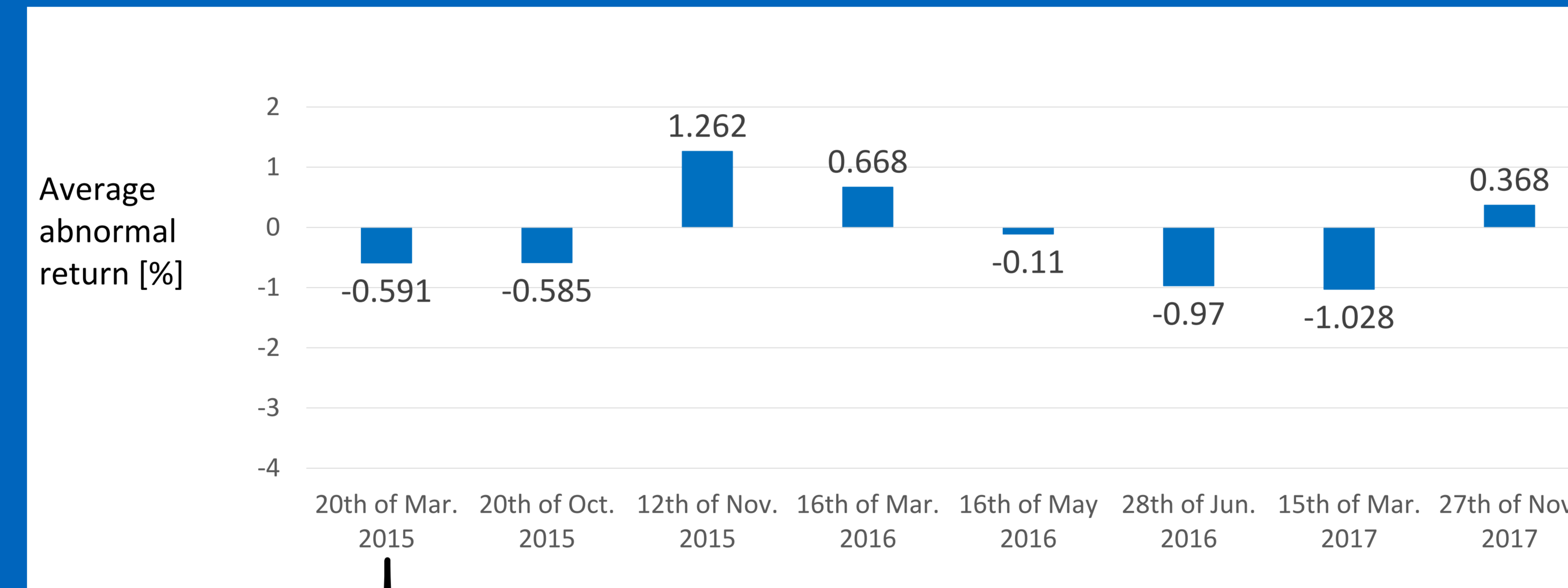


Figure 2: Average abnormal return across companies caused by the event

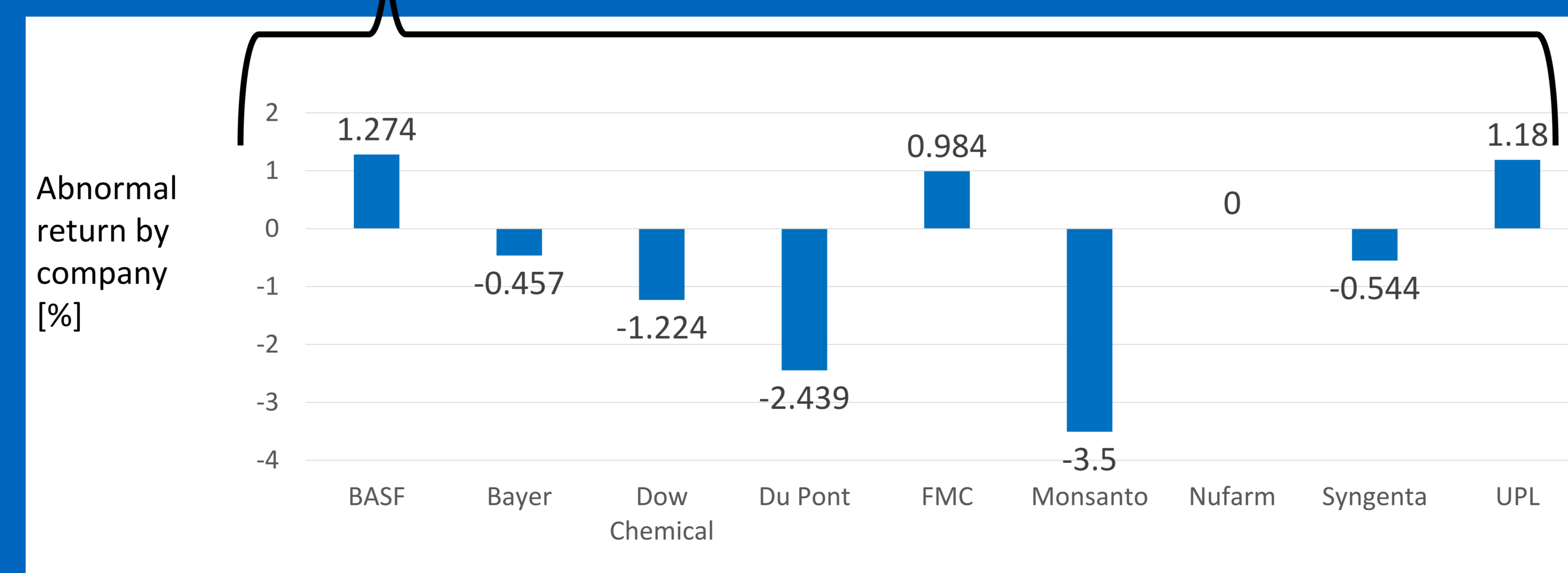


Figure 3: Abnormal return by company due to report of the International Agency for Research on Cancer (20th of Mar, 2015)

Discussion

- Estimated average abnormal returns across companies due to the events are comparatively small (cf. Figure 2)
- Considerable heterogeneity in abnormal returns across companies (cf. Figure 3)
- European companies are less affected than the others
- European companies have a more diversified portfolio than the other companies, i.e. generate less of their revenue in agri-business sector
- Possible signaling effects of European pesticides policy on US policy

Policy implications

- Overall, pesticides producers have not been affected severely by glyphosate debate
- Policy makers do not necessarily need to show consideration for competitiveness of pesticides producers in decisions on pesticide bans
- Considerable negative effects for some companies debate may disincentivize firms to invest further in agro-chemicals business
- Continuous increase of concentration in agro-chemicals market which is already high

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