RED AND GREEN FLAGS OF RISK DISCLOSURES
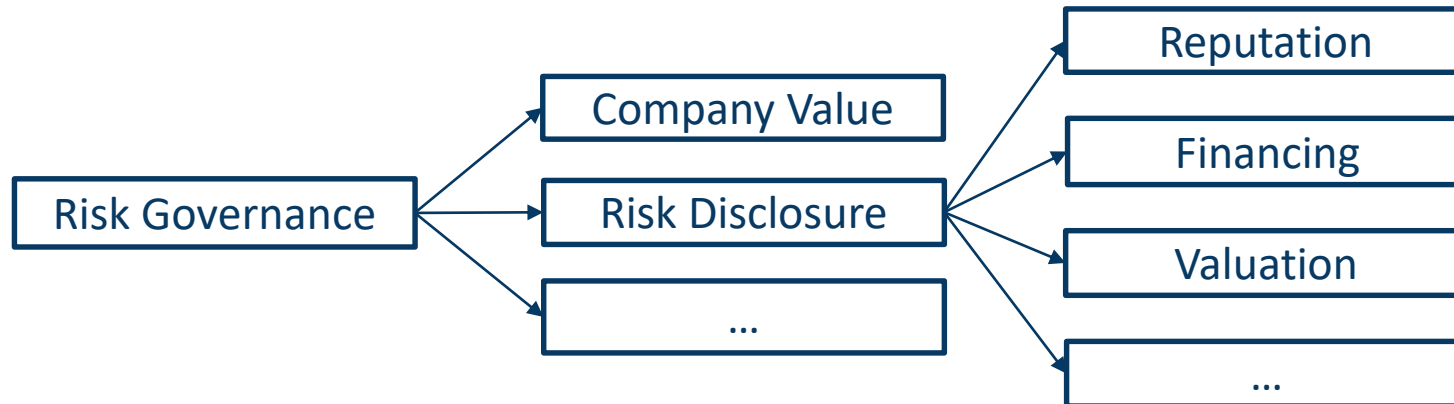
– AN AUTOMATED TEXTUAL ANALYSIS OF INVESTOR-RELEVANT KEY PHRASES

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Introduction


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Risk Governance → Company Value
                → Risk Disclosure → Reputation
                                  → Financing
                                  → Valuation
                                  → ...
                → ...
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Reason Why

risks related to operating

this competition may adversely affect

significantly affect the purchasing decisions

common stock may be adversely

financial flexibility may

could adversely affect customer demand

Definitions

N-Grams: N words in a row

Red Flag: N-gram that conveys a negative signal for investors (negative short-term abnormal returns)

Green Flag: N-gram that conveys a positive signal for investors (positive short-term abnormal returns)

Reason Why

Prior research aggregates risk disclosures strongly   (Kureck & Homölle, 2018)

Which specific risk information do investors
incorporate?   (Hope et al., 2016)

Do investors value positive risk information?   (Elshandidy et al., 2018)

Prior Literature I

Kureck & Homölle (2018):

Aim: How do private investors perceive and process risk information?

Sample: 30 private investors of a German savings bank

Methodology: Think-aloud protocols

Findings: private investors search for signal words to identify relevant information cues similar to 5 experts instead of reading the entire risk disclosure

→ Aggregation of risk disclosures in a few variables by prior research is questionable

→ **We focus on small phrases**

Individuals' Perception and Processing of Risk Information: Exploratory Evidence from Germany

Kathrin Kureck[1] · Susanne Homölle[1]

Prior Literature II

BARRON'S

FEATURE

Watch Their Language

By Vito J. Racanelli   Updated Aug. 31, 2009 12:01 a.m. ET

Barron's: Racanelli (2009):

- Publication of 17 "red flags" "that should set off [investors'] alarm bells"
- Based on the knowledge of two experts
- Claim that the phrases uncover the obfuscation of negative situations

Prior Literature III

Barron's Red Flags: Do They Actually Work?

Tim Loughran and Bill McDonald
University of Notre Dame

Loughran & McDonald (2011):

Aim: Do Barron's red flags actually work?

Sample: 50,115 10-Ks filed between 1994 and 2008

Methodology: Regression analyzes of capital market measures on the
                  occurrence of 13 of Barron's phrases

Findings: Confirmation of the relevance of some phrases for investors

Research Gap

1. Are there other red flags?

2. Are there green flags?

3. What characterizes these flags?

Stepwise Regression Analysis

- 2,558 US risk disclosures of S&P 500 companies
- 10-K reports filed between 2011 and 2017
- Stepwise regression analyses of short-term abnormal returns on 35,685 n-grams
- Regression equation:

$$
\begin{aligned}
AB = \ & \beta_0 \\
& + \beta_1 * SIZE + \beta_2 * BTM + \beta_3 * NI + \beta_4 * LOSSES + \beta_5 * STWON + \beta_6 * ACC \\
& + \beta_7 * AF + \beta_8 * AE \\
& + \sum_{i=1}^{6} \left(\beta_{9_i} * YEAR_i \right) \\
& + \sum_{j=1}^{m} \left(\beta_{10_j} * n - grams\ of\ the\ regression\ step_j \right) \\
& + \sum_{k=1}^{n} \left(\beta_{11_k} * incorporated\ n - grams\ of\ prior\ regression\ step_k \right) \\
& + \varepsilon
\end{aligned}
$$

Results I – Distribution of N-grams

	2-gram	3-gram	4-gram	5-gram	Sum
Positive	17 (15)	39 (39)	12 (12)	1 (1)	69 (67) (47.6 %)
Negative	20 (18)	32 (32)	18 (18)	6 (6)	76 (74) (52.4 %)
Sum	37 (33) (25.5 %)	71 (71) (49.0 %)	30 (30) (20.7 %)	7 (7) (4.8 %)	145 (141) (100 %)

Notes:
The number of n-grams per category show the qualitative associations. Thereof, the number in brackets shows the significantly associated number of n-grams per category.
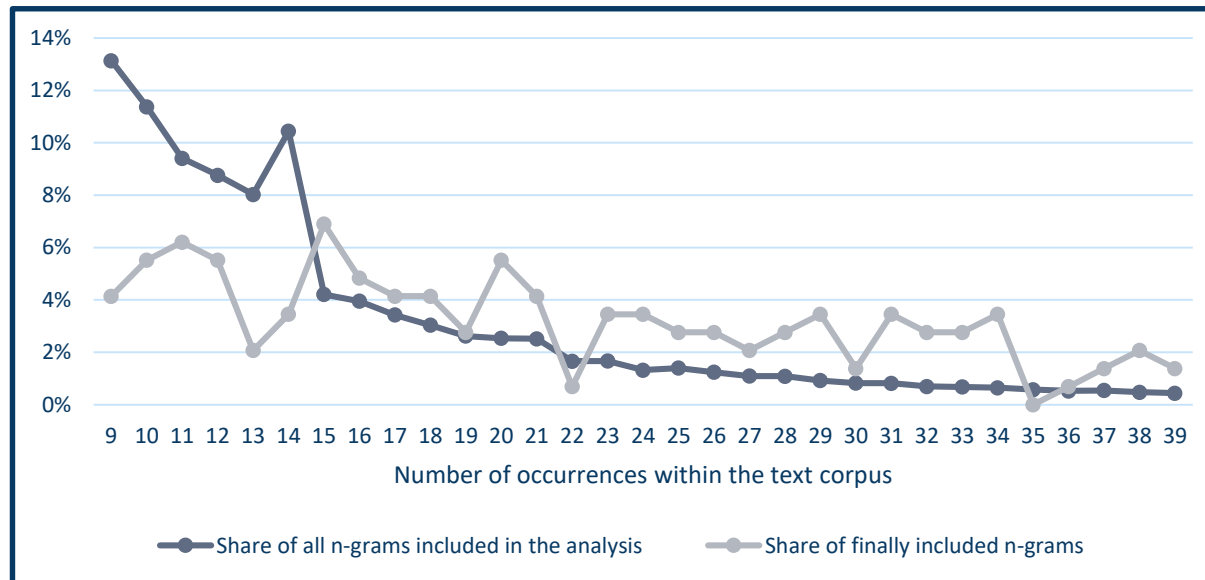
Results II – Uncertainty
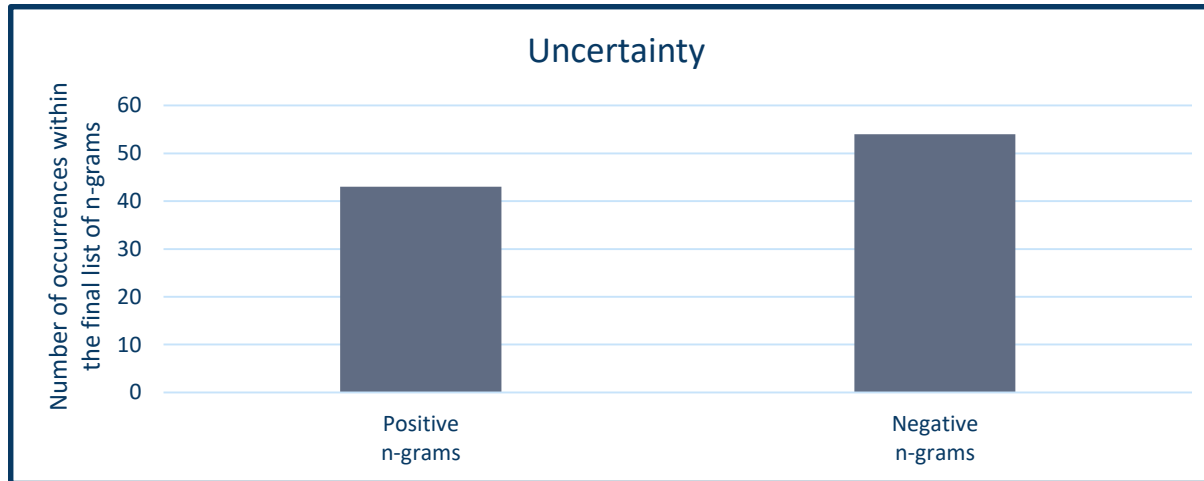
Results III – Topics I
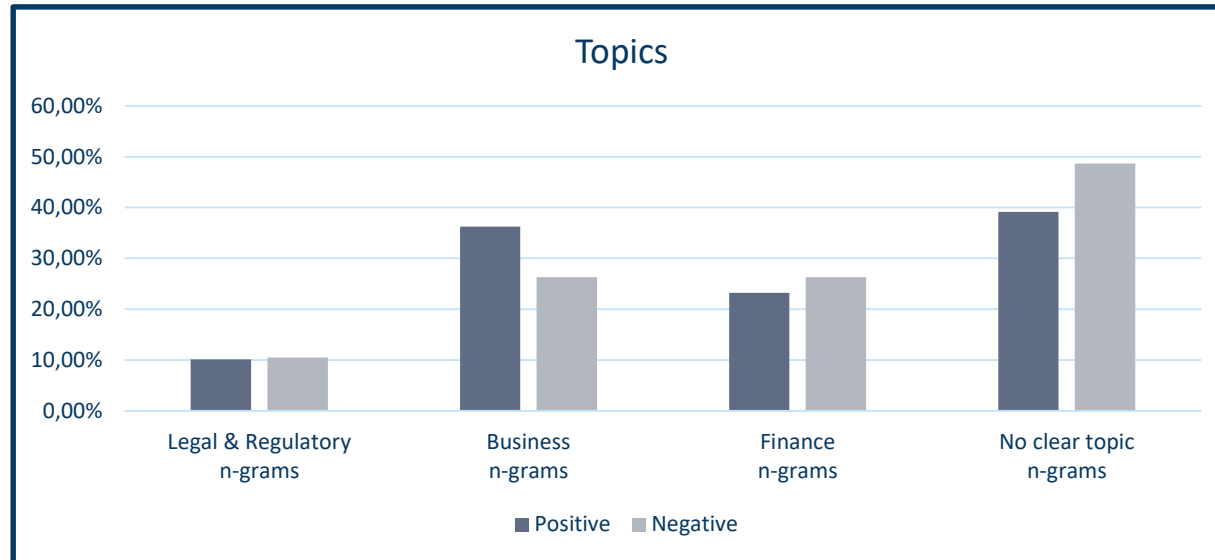
Results VI – Comparable Risk Disclosures

Red and Green Flags of Risk Disclosures – An Analysis of N-grams

Contribution

1. Are there other red flags? YES

2. Are there green flags? YES

3. What characterizes these flags?
    → the content
    → the uncertainty
    → the comparability

Implications

1. Support of the approach of the **SEC**: mandate of individualization BUT comparability
2. Guide attention of **investors** to deeper analyze signaling phrases

Limitations & future research:

- Companies may adapt but need to satisfy regulations
    - → Synonyms and adaptation might be necessary
- Less restrictive criteria of included n-grams
- We identify first indications of the characteristics of the key phrases
    - → Do the key phrases mirror the real risks?

Thank you!

Questions and comments are very welcome!

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