

# Disclosure “Scriptability”

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# Research Question

1. information intermediaries, such as the Dow Jones (DJ) newswire service, are more likely to locate and process information in more script- able disclosures, leading to a higher likelihood and speed of newswire dissemination.
2. dis-closure scriptability positively relates to the speed of the market's response to the disclosure

# Motivation

- ▶ market traders now utilize computing power to assist or replace human effort in the acquisition and analysis of financial information and the execution of trading strategies
- ▶ So market prefer more machine-readable files.

# the Construction of “Scriptability”

*CompScript*: main measure of scriptability,

1. *IdentifyData*: for scripters' ease in identifying data of interest
  - ▶ separate tables from text,
  - ▶ decompose text into logical sections
  - ▶ identify the content of logical sections based on the quality of headings
  - ▶ find the relevant content in the filing itself rather than following links to external documents.
2. *DataToInformation*: for scripters' ease in processing data into information.

# the Construction of “Scriptability”

*CompScript*: main measure of scriptability,

1. *IdentifyData*: for scripters' ease in identifying data of interest
2. *DataToInformation*: for scripters' ease in processing data into information.
  - ▶ the proportion of the filing that is machine-readable as text
  - ▶ the proportion of numeric information in the filing that is tabulated,
  - ▶ the ease of processing textual information,
  - ▶ the ease of processing tabular information

# FACTORS ASSOCIATED WITH SCRIPTABILITY

investment in the financial reporting function,(size,age,financial distress,complexity, sales growth ,institutional holdings)  
technological sophistication(FileLag)  
and the use of a filing provider(use of a filing provider will result in higher scriptability)

# FACTORS ASSOCIATED WITH SCRIPTABILITY

We model the association between scriptability and the constructs described above using the following multiple regression:  $\text{Script} = \alpha_0 + \sum \alpha_i(\text{Investment in Financial Reporting}) + \sum \gamma_i(\text{Technological Sophistication}) + \sum \delta_i(\text{Use of a Filing Provider}) + \beta_0\text{HTML} + \sum \text{Year-MonthFEs} + \sum \text{IndustryFEs} + e.$

# Hypothesis Development and Research Design

- ▶ H1: Disclosure scriptability is positively associated with the speed of price formation.
- ▶ H2: Scriptability is positively associated with the likelihood and speed of newswire dissemination.



# H1 design

- ▶ IPT: price or volume 
$$\text{IPT} = \sum_{m=1}^{w-1} \left( \frac{ER_m}{ER_w} \right) + 0.5.$$
- ▶ 
$$\text{IPT} = \alpha + \beta \text{Script} + \sum \gamma_i (\text{Controls}) + e.$$

control variables are partly mentioned before and the firm (News), performance (ROA and Loss), growth prospects (Book-to-market [BTM]), investments (CapEx), and capital structure (Lev). We also control for the number of filings received by the SEC in the 60 seconds prior to the filing of interest (FileCluster)

## H2 design

- ▶ News

$$DV = \alpha + \beta \textit{Script} + (\sum \gamma_k \textit{Controls}_k) + e.$$

- ▶ control variables stated in the section 2

# Result

- ▶ H1 could be proved
  - ▶ Our results are most pronounced with 8-K
  - ▶ strong results both from volume and return.
- ▶ we generally fail to find support

# Additional Analysis

- ▶ whether associations between the scriptability of filings and IPTP, IPTV, Dissem, and NewsDelay vary depending on whether the firm includes XBRL
  - ▶ Result don't support XBRL substitutes for scriptability in 10-K filings.
- ▶ whether the extent and quality of XBRL metadata increases DV value.

## Additional Analysis

- ▶ whether scriptability increases or decreases information asymmetry over both short and long trading windows
- ▶  $\%AbSpread = \alpha + \beta Script + \sum \gamma_i(Controls) + e.$
- ▶ it is significant

# Conclusion

scriptability relates positively to measures of the speed of the market response to SEC filings  
XBRL could substitute for scriptability, at least with respect to our task-based measures