SFB/Transregio 266

ACCOUNTING FOR TRANSPARENCY

CENTRALIZED REPORTING INFRASTRUCTURE AND DISCLOSURE INFORMATIVENESS: EVIDENCE FROM GERMANY

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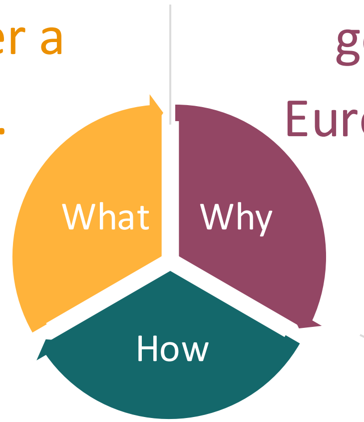
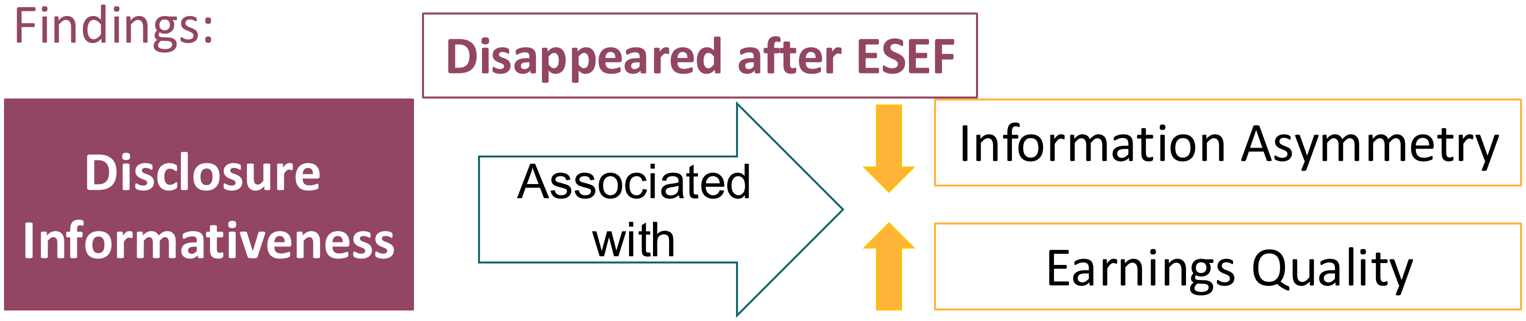
IN A NUTSHELL

We study the **disclosure informativeness** of German annual reports under a **centralized reporting platform**.

To offer **crucial insights** for the on-going reform toward an integrated European Single Access Point (ESAP).



- Applying BERT: a language embedding model
- Using a novel measure of disclosure informativeness that captures the semantic changes in annual reports.
- Findings:



BACKGROUND

MOTIVATION

Why do we study disclosure informativeness in Germany?

The on-going integration "**Capital Markets Union**" toward the ESAP (European Single Access Point) has seen a major set back.

- Initial target: fully operational by Dec 31, 2024
  - Now delayed to July 1, 2027.
- Reasons for delay:
  - Technical complexity, testing time needed, etc.
  - Push back by companies

Our setting: ESMA's ***ESEF*** (European Single Electronic Format) requires corporate financial reports in XHTML format with XBRL tags after **2020**.

Motivating questions: How does EU's new disclosure requirement affect disclosure informativeness? What are the impacts on the information environment in the capital market?

Existing studies suggest these reforms increase proprietary cost (Breuer et al., 2022; Breuer and Breuer, 2023)

MEASURE OF INFORMATIVENESS
WITH A LANGUAGE EMBEDDING MODEL: BERT

- BERT encodes **sentences** into an **embedding vector** of float numbers that capture the **semantic meaning**

2013 wird ein anspruchsvolles Jahr: Wir rechnen weiterhin mit einem unbeständigen Umfeld. （BASF 2013）

```
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✓ 0.0s

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         ...,
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         [ 0.0348,  0.0094,  0.1492,  ..., -0.1632, -1.6453, -0.4618],
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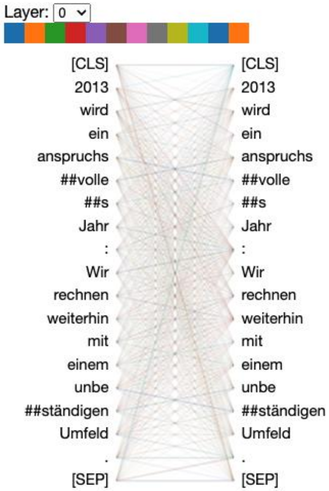
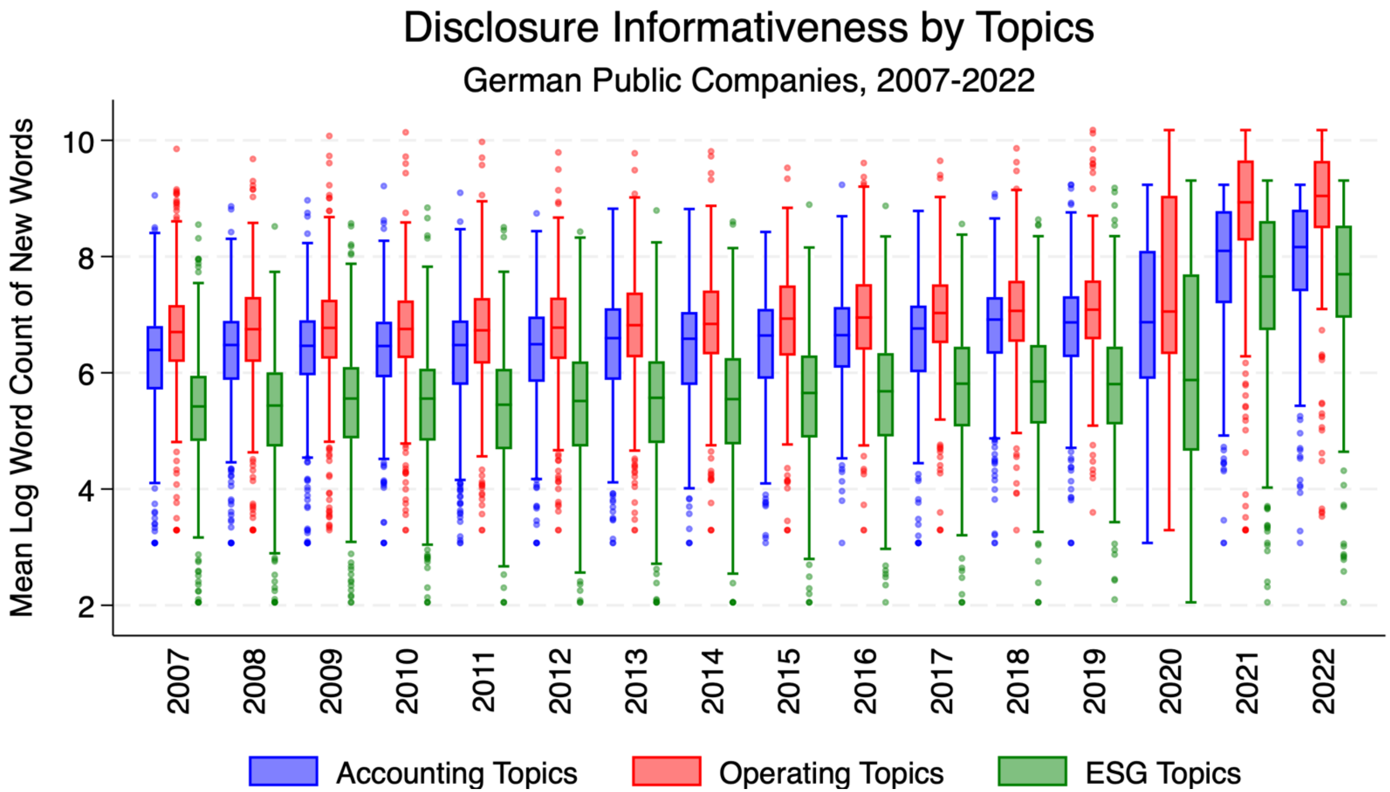


- We measure informativeness as the # words that are ***new:***

$$\text{Informativeness} = \#Words \cdot sin(emb_t, emb_{t-1})$$

- We also use BERT to decompose reports into topics.
- **Data:** German annual reports downloaded from German Company Registry between 2007 – 2024 (N=5,105); Compustat Global.

DECOMPOSING REPORTS WITH BERTOPIC



Accounting

Operating

ESG

HYPOTHESES

Disclosure Informativeness

↑ Earnings Quality

- H1: A higher disclosure Informativeness is associated with a smaller magnitude of absolute abnormal accruals.

↓ Information Asymmetry

- H2: A higher disclosure Informativeness is associated with a smaller magnitude of Amihud Illiquidity.

- H3: The association between disclosure Informativeness and earnings quality/information asymmetry *disappear* after firms adopting ESEF.

Testing H1: A higher disclosure Informativeness is associated with a smaller magnitude of absolute abnormal accruals.

Table: Disclosure Informativeness and Abnormal Accrual

	(1) abs (DA Jones)	(2) abs (DA M. Jones)	(3) abs(DA P.M.)
Info: Overall	-0.001***	-0.001***	-0.001***
	(-4.57)	(-3.37)	(-2.71)

Decomposing informativeness by topics:

Accounting

Operating

ESG

Table: Disclosure Informativeness by Topics and Abnormal Accrual

	(1) abs (DA Jones)	(2) abs (DA M. Jones)	(3) abs(DA P.M.)
Info: Accounting	-0.008***	-0.008***	-0.007***
	(-3.08)	(-2.83)	(-3.44)
Info: Operating	0.005	0.003	0.004*
	(1.56)	(1.01)	(1.86)
Info: ESG	-0.001	0.001	0.000
	(-0.73)	(0.24)	(0.07)

Size-matched accruals (Ecker et al. 2013)

Controlling for accrual determinants (Owens et al. 2017)

S.E. clustered by firm and year.

Testing H3: The association between disclosure Informativeness and earnings quality/information asymmetry *disappear* after firms adopting ESEF.

	(1) abs (DA Jones)	(2) abs (DA M. Jones)	(3) abs(DA P.M.)
Info: Accounting	-0.009***	-0.009***	-0.007***
	(-3.35)	(-3.14)	(-3.60)
Info: Operating	0.006*	0.004	0.004*
	(1.76)	(1.24)	(1.89)
Info: ESG	-0.002	0.000	0.000
	(-0.71)	(0.22)	(0.21)
ESEF × Info: Accounting	0.013	0.014	0.008**
	(1.60)	(1.48)	(2.14)
ESEF × Info: Operating	-0.010	-0.009	0.001
	(-1.28)	(-1.09)	(0.10)
ESEF × Info: ESG	0.002	0.001	-0.004
	(0.46)	(0.39)	(-0.99)
ESEF	-0.027*	-0.038***	-0.042***
	(-1.75)	(-2.75)	(-4.38)
Test of coefficients:			
	Info: Topic + ESEF × Info: Topic = 0		
Topic		Accounting	
F-stat	0.329	0.300	0.068
P-value	0.567	0.585	0.794

Testing H2: A higher disclosure Informativeness is associated with a smaller magnitude of Amihud Illiquidity.

Table: Disclosure Informativeness and Information Asymmetry

	(1) Amihud Illiq. (t+1)	(2) Log Amihud Illiq. (t+1)	(3) Amihud Illiq. (t+1)	(4) Log Amihud Illiq. (t+1)
Info: Overall	-0.632**	-0.036**		
	(-2.16)	(-2.15)		
Info: Accounting			0.753	0.057
			(0.44)	(0.65)
Info: Operating			-0.148	-0.000
			(-0.09)	(-0.00)
Info: ESG			-2.043*	-0.135**
			(-1.83)	(-2.11)
Log Market Cap.	-6.926***	-0.524***	-6.929***	-0.524***
	(-13.68)	(-19.97)	(-13.85)	(-20.29)
Leverage	16.989***	0.605***	16.769***	0.591***
	(4.34)	(2.99)	(4.30)	(2.94)
M/B Ratio	0.156***	0.014***	0.162***	0.014***
	(2.74)	(4.51)	(2.82)	(4.58)
Lag Earnings	-5.399	-0.415	-5.542	-0.425
	(-1.15)	(-1.49)	(-1.18)	(-1.53)
Loss	8.220***	0.417***	8.395***	0.429***
	(3.73)	(4.17)	(3.78)	(4.25)
Operating Shock	-1.089	-0.060	-1.100	-0.061
	(-0.72)	(-0.80)	(-0.73)	(-0.80)
Idiosyncratic Shock	69.911**	1.401	71.020**	1.480
	(2.40)	(0.89)	(2.43)	(0.93)

Testing H3: The association between disclosure Informativeness and earnings quality/information asymmetry *disappear* after firms adopting ESEF.

	(1) Amihud Illiq. (t+1)	(2) Log Amihud Illiq. (t+1)
Info: Accounting	0.687	0.057
	(0.38)	(0.61)
Info: Operating	-0.106	0.004
	(-0.06)	(0.04)
Info: ESG	-2.093*	-0.139**
	(-1.83)	(-2.11)
ESEF × Info: Accounting	0.688	-0.010
	(0.23)	(-0.06)
ESEF × Info: Operating	-0.943	-0.106
	(-0.24)	(-0.61)
ESEF × Info: ESG	1.032	0.083
	(0.38)	(0.47)
ESEF	-3.114	0.465
	(-0.19)	(0.63)
Test of coefficients:		
	Info: Topic + ESEF × Info: Topic = 0	
Topic	ESG	
F-stat	0.157	0.107
P-value	0.693	0.744

CONTRIBUTIONS AND CONCLUSIONS

- Novel Methodology: Introducing a novel, semantically-driven measure of disclosure informativeness, leveraging BERTopic analysis of textual annual reports.
- Key Findings:
  - Higher disclosure informativeness significantly reduced information asymmetry (lower Amihud illiquidity) and improved earnings quality (lower abnormal accruals).
  - Crucially, these beneficial associations disappeared after the adoption of the European Single Electronic Format (ESEF) in 2020.
- Core Conclusion: Centralized digital reporting, while enhancing accessibility, may unintentionally foster more standardized, less incrementally informative disclosures.
- Policy Implications: Offering critical insights for the design and implementation of the ESAP, highlighting a potential trade-off between standardization and the richness of disclosure.

Thank you for your attention!

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