



# IWP-Wissenschaftsforum 2022

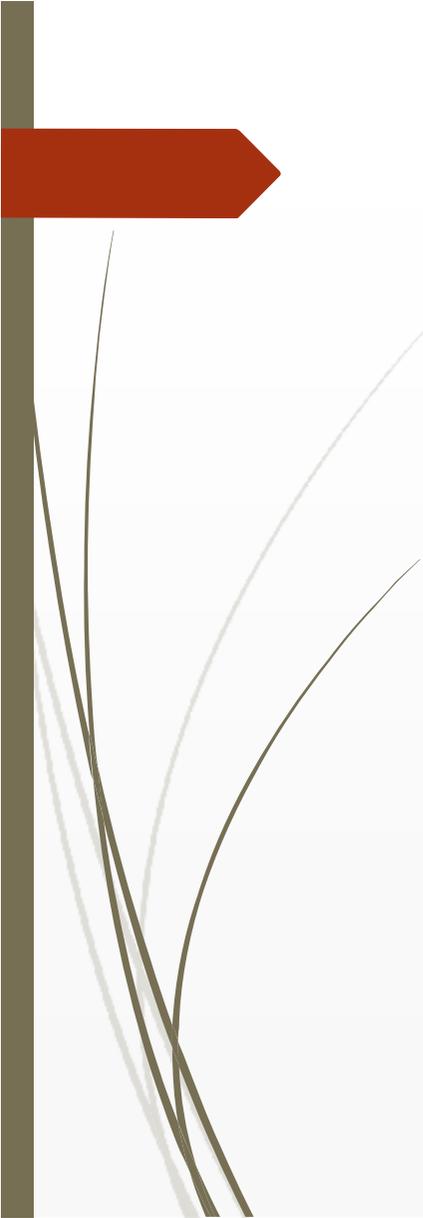
## “PCAOB-type Regulation and Audit Portfolio”

Ph.D. Thesis Submitted to University of Graz

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# Summary

- Independent auditors assure integrity of firms' financial statements.
- Audit can create value beyond its costs by informing investment decisions, reducing agency conflicts, etc.
- Auditors and their clients might have misaligned incentives.
  - Auditors minimize their costs, while clients desire maximum audit value.
    - Audit regulation reduces the potential misaligned incentives between auditors and clients.
    - Legal systems (court) and regulatory bodies (e.g., PCAOB) are responsible to cope with this problem.
- This thesis studies how audit regulation, e.g., PCAOB-type regulation, and agency conflicts affect audit value, audit quality, and audit fees.



# Introduction

- The accounting scandals around the turn of century raised concern about public accountants:

Inadequately regulated audit market

- To restore investors' trust, U.S. Congress enacted SOX Act of 2002 leading to the creation of the Public Company Accounting Oversight Board (PCAOB).
  - PCAOB is the "auditor of auditors", overseeing the audit of public companies.
  - PCAOB sets standards and enforces them through regular inspections.

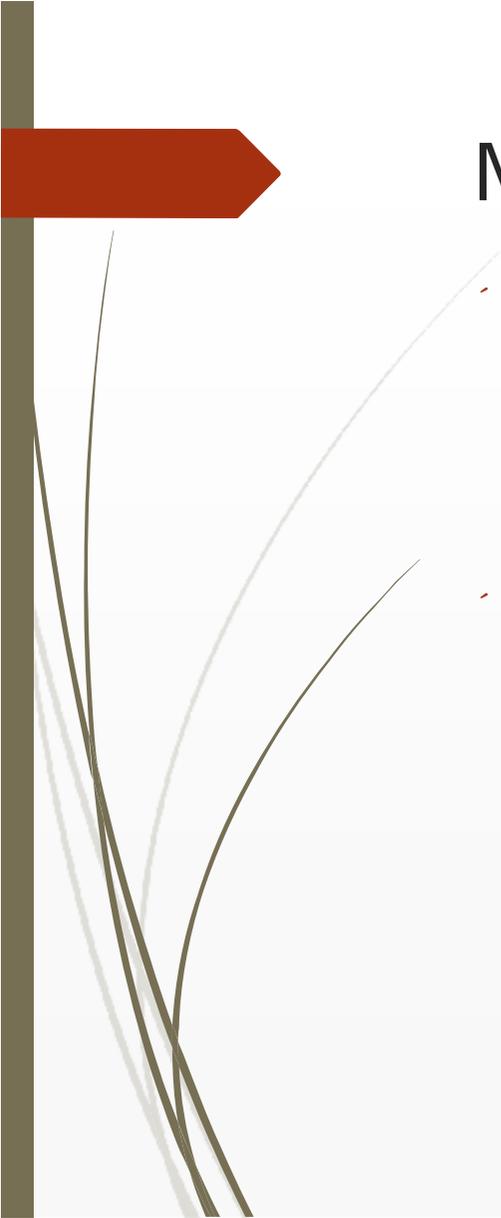


# Overview

- Audit and PCAOB-type Regulation: A Literature Review on Analytical and Archival Insight
  - A recent survey of analytical and archival literature on the PCAOB-type regulation and the general concept of audit regulation.
  - Is there a divergence between analytical and archival literature? If there is, why?
    - Despite theory often laying out the foundation of hypotheses, theory papers are rarely or wrongly cited.
    - Allows analytical researchers to validate their theories.
- PCAOB Oversight – Optimal Audit Standards and Inspections for Audit Portfolios
  - An analytical model on how should PCAOB set and enforce audit standards to maximize audit value.



# Audit and PCAOB-type Regulation: A Literature Review on Analytical and Archival insight



# Methodology

- 1. Archival studies examining the economic consequences of PCAOB-type regulation.
  - Perceptions
  - Content of Part I findings
  - Content of Part II findings
- 2. Analytical studies examining the economic consequences of audit regulation.
  - Liability rules (to which group of financial statement users the auditor should be liable to)
  - Damage apportionment rules (in case of a co-defendant's insolvency, who is responsible to pay the damages)
  - Strict and negligence liability
  - Precise and vague auditing standards
  - Enforcement



# Comparison Within Methodologies (1)

- Empirical: impact of PCAOB inspection on audit quality.
  - Carcello et al. (2011): using one proxy for audit quality (abnormal accruals), they find that in the year following the first and second inspections, audit quality of Big 4 audit firms is improved.
  - Gunny and Zhang (2013): using three proxies (abnormal accruals, restatements, and the tendency to issue a GC opinion), they find that audit quality of annually inspected auditors do not always improve.
  - Possible explanation: three proxies, larger sample.



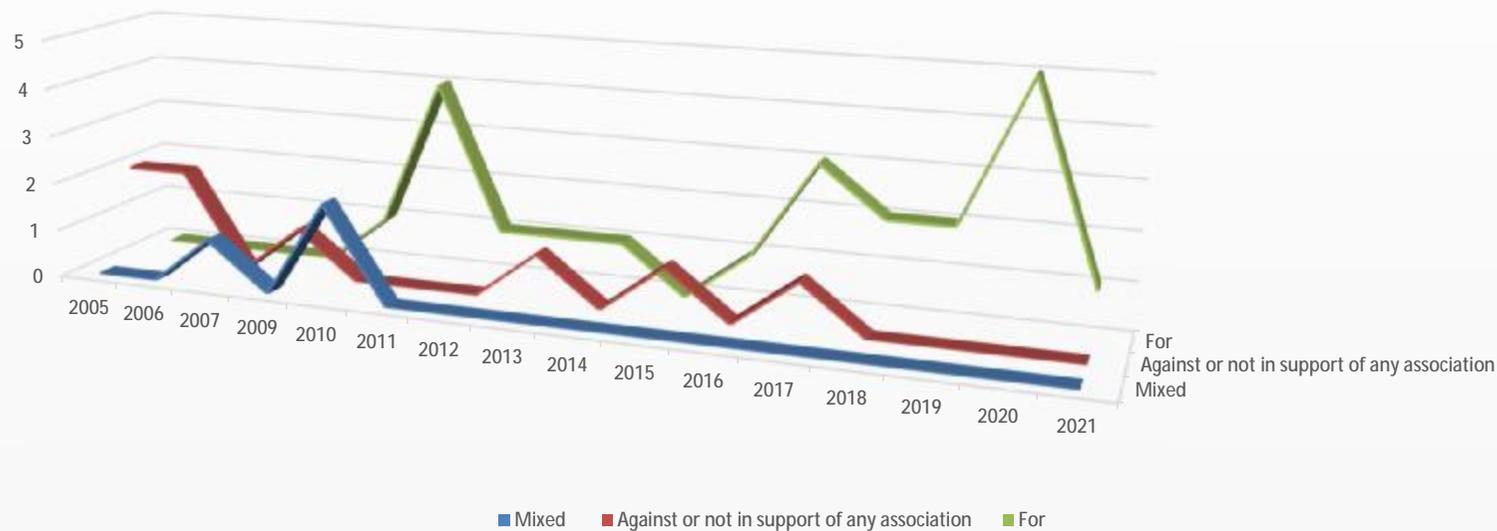
## Comparison Within Methodologies (2)

- Analytical: economic consequences of higher legal liability (joint and several).
  - Chan and Pae (1998): higher legal liability increases audit quality, but it reduces social welfare.
    - Investor sues auditor more often incentivizing him/her to exert more audit effort.
    - Higher audit costs (higher audit effort) and higher legal costs (higher suing probability) outweigh the benefits of higher audit quality → reducing social welfare.
  - Hillegeist (1999): higher legal liability increases audit quality, but it increases audit failure as well.
    - It increases audit effort (audit quality) → reducing audit failure
    - It increases manager's misreporting incentives → increasing audit failure
    - In equilibrium, an increase in misreporting incentives *dominates* an increase in audit effort.

# Results (1)

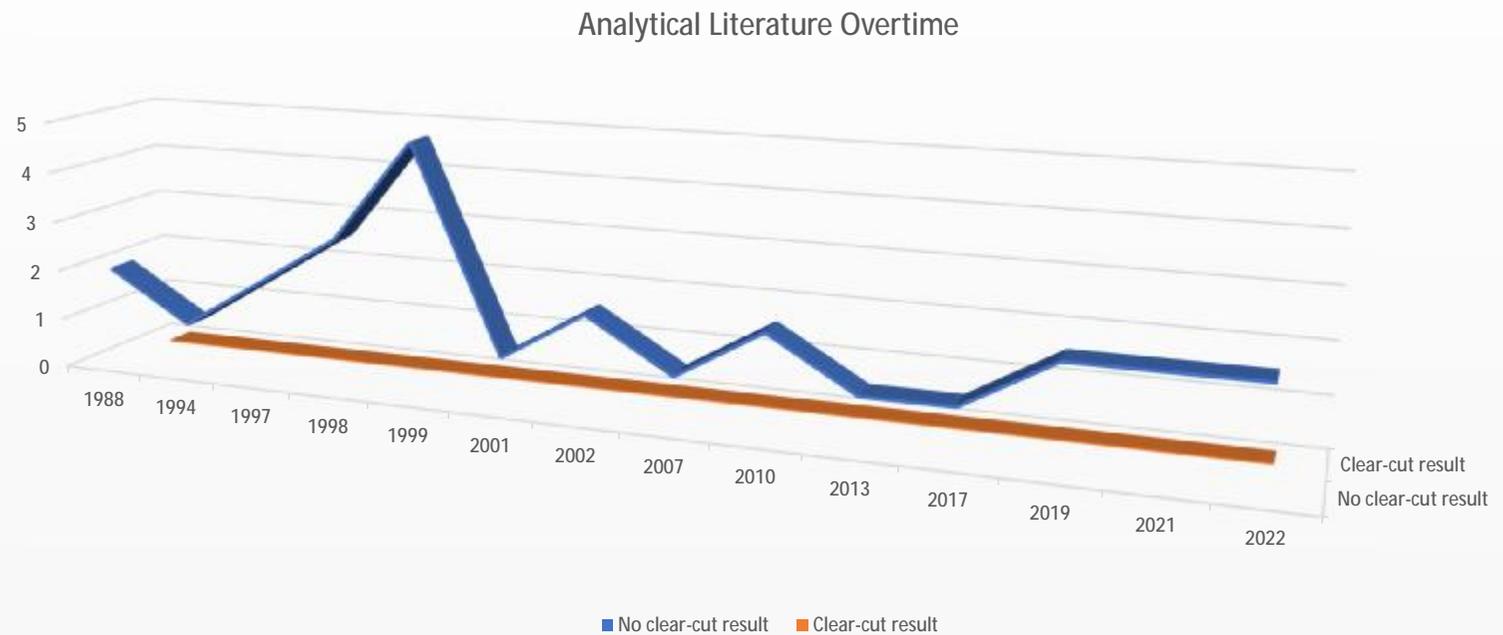
Over time, archival research turned from a skeptical perspective towards a more favorable view on PCAOB-type regulation.

Archival Literature Overtime



## Results (2)

The analytical research does not provide clear-cut results.





# Findings and Implications

- Archival research mainly addresses audit quality.
- Analytical research *additionally* addresses audit value.
- Archival researchers cannot measure audit value directly but only infer it implicitly (Aobdia and Shroff, 2017).
  - We must be cautious about the favourable view on PCAOB-type regulation.
  - Audit regulation should maximize audit value (audit quality net of audit costs).
- Not so much emphasize on past analytical studies because they barely focus on PCAOB-type regulation.
  - Ye and Simunic (2021): PCAOB-type regulation can improve audit quality and audit value.



# PCAOB Oversight – Optimal Audit Standards and Inspections for Audit Portfolios



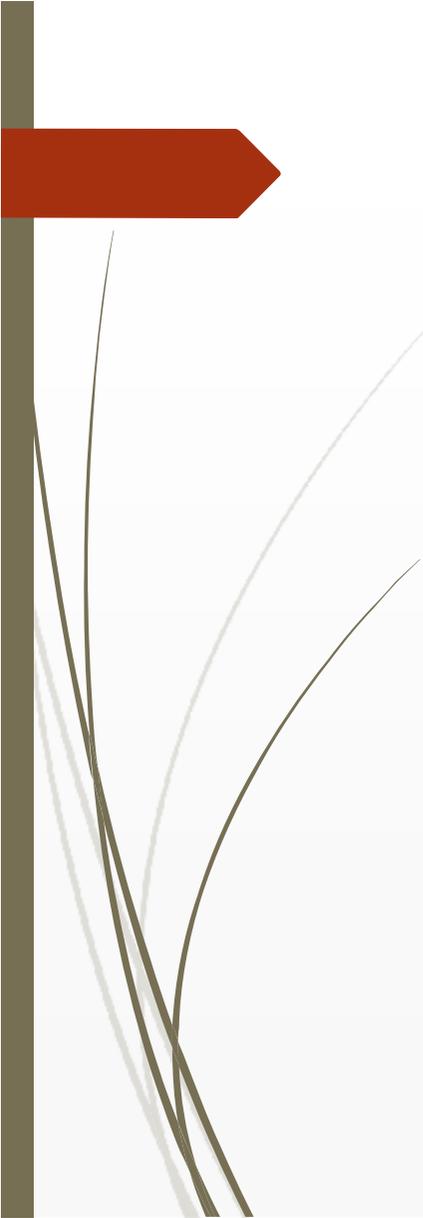
# Motivation

- PCAOB regulates client-specific and portfolio-specific investments (different from setting audit standards *directly* on audit quality).
  - PCAOB has been criticized for their enforcement actions.
    - Should PCAOB use a risk-based inspection approach? (Glover and Prawitt, 2014; Glover et al. 2014).
    - Audit standards are distant from auditing practice (Knechel, 2013; DeFond and Zhang, 2014; Gao and Zhang, 2019).
- ⇒ Overall, there is an unsettled debate about how PCAOB should design audit regulation.



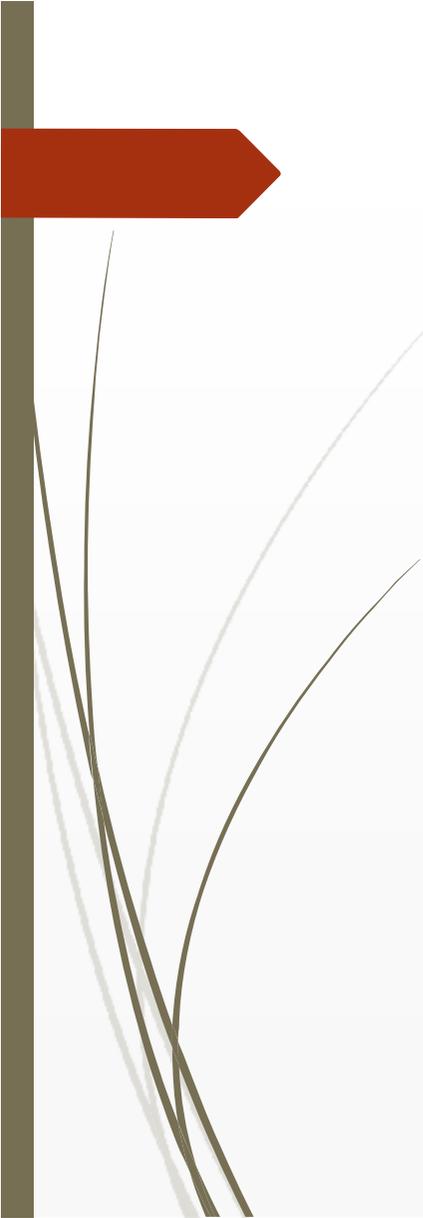
# Research Question

- Research Question:
  - How should PCAOB set and enforce audit standards for audit portfolios?
- What?
  - Derive optimal audit standards and inspection intensities.
- How?
  - Develop an analytical model focusing on regulation of portfolio- and client-specific audit actions.
- Who cares?
  - PCAOB, auditors, and archival researchers.



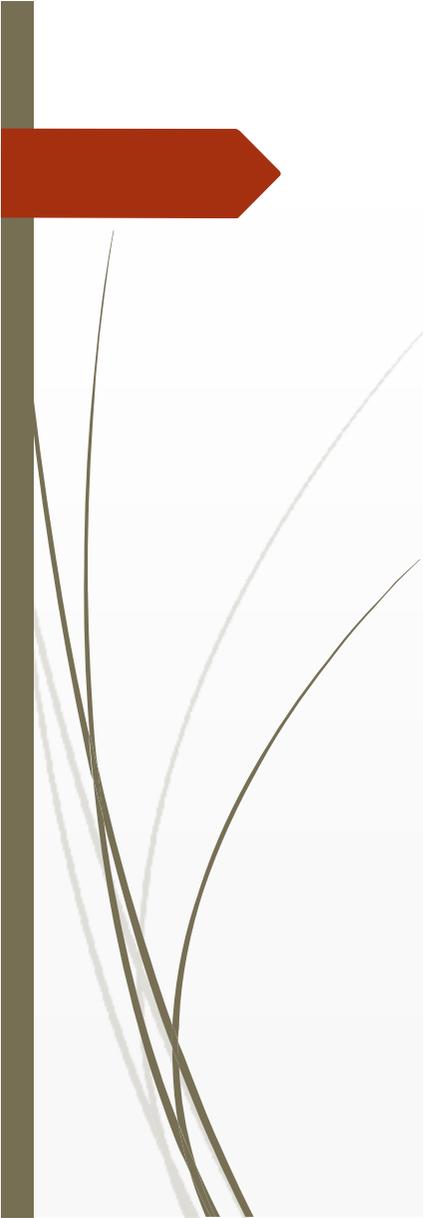
## Timeline (1)

- Each client's financial condition is good with probability  $1 - \lambda_i$ , bad with probability  $\lambda_i$  and unknown.
- PCAOB sets audit standards on effort  $a^S$  and effectiveness  $t^S$  and commits to inspection intensities for audit effort and effectiveness.
- Both clients hire the auditor and pay audit fees that cover the expected audit costs.
- The auditor establishes audit effectiveness  $t$ .
- Each client proposes a favourable report to the auditor.
- Auditor chooses client specific audit efforts  $a_i$  to accumulate audit evidence.
  - Audit effectiveness is the rate at which audit effort maps into audit quality  $q_i = ta_i$ .



## Timeline (2)

- Auditor attests to financial report and client releases the audited financial report (favourable or unfavourable).
- New owners buy the firm and invest  $I$  in its production technology or not.
- Upon investment, return on investment are realized and reveal the client's financial condition ex-post.
- If the investment fails and reveals an audit failure, the auditor must pay damage repayment  $D < I$  to new owners.
- All payoffs are realized.



# Spill-over Effects

- There is scope for regulation (underinvestment in audit actions).
- Spill-over effects in audit portfolios.
  - Audit effectiveness and both client-specific audit efforts strictly increase in damage repayments  $D$ , each client's business risk,  $\lambda_1$  and  $\lambda_2$ , and cost of each audit action.
  - An increase in  $\lambda_i$  increases auditor's propensity for supplying higher  $q_i$ .
    - Direct effect: the auditor increases both  $a_i$  and  $t$  to achieve higher  $q_i$  in a cost efficient way.
    - Indirect effect: the auditor increases  $a_j$ . Higher investments in  $t$  enhance the marginal benefit of all audit efforts in an audit portfolio.



# Optimal Regulation

- To enforce  $a^S$  and  $t^S$ , the PCAOB commits to inspection intensities on each client level and on the portfolio level.
- To set  $a^S$  and  $t^S$ , the PCAOB maximizes audit value net of inspection costs.
- Analysis shows that:
  - PCAOB partially solves the underinvestment problem.
  - PCAOB can improve audit value more efficiently by setting tighter standards on audit effectiveness relative to standards on audit effort.
    - Positive indirect effect of higher audit effectiveness standards on the cost of enforcing audit effort standards (lower inspection intensity).
    - Negative indirect effect of higher audit effort standards on the cost of enforcing audit effectiveness standard (higher inspection intensity).



# Empirical Implications

- Since investments into audit quality have portfolio-specific components, audit quality of firm  $i$  is affected by all clients in the portfolio.
- Comparable clients should gain different audit quality in different audit portfolio, where audit quality is positively related to their own and the portfolio's business risk.
- Taking these interrelations into account should increase the explanatory power of empirical tests.
- The model has straight-forward application in an experimental design.



# Regulatory Implications

- PCAOB should focus more on portfolio-specific audit standards to increase audit quality.
- If standards are sufficiently flexible, optimal client-specific inspection intensity should increase with a client's business risk (risk-based approach).
- If audit standards are inflexible and clients are sufficiently different, only the 'more important' clients should be subject to enforcement (focused approach).



# Conclusion

- Changes in the demand for audit quality of one particular client lead to higher audit quality for all other clients in the audit portfolio (spill-over effect).
- Stricter standards on portfolio-wide audit investments enhances the enforcement of client-specific standards.
- PCAOB can improve the value of an audit more efficiently by setting tighter standards on audit effectiveness relative to standards on audit effort.
- If standards are inflexible, focusing on the most important engagements can be optimal.



Thank you for listening!