

# Public Interest Explorer: Harnessing Text Mining and Large Language Models for Enhanced Public Interest Oversight

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# The Public Interest Oversight Board (PIOB)

PIOB provides independent oversight of the activities of the International Audit and Assurance Standard Board (IAASB) and International Ethics Standard Board for Accountants (IESBA), supported by the International Federation of Accountants (IFAC) to ensure that they align with public interests.

A critical task for PIOB is to obtain accurate portrayals of public interests.

# Project Objective

- Supply PIOB with online-sourced information regarding the public interest in the field of auditing standards
- To reach it, we:
  - Scrape files from relevant websites
  - Store files in a database
  - Build application for search
  - Retrieve files in database

# Data and Websites

- **14,332 Documents were retrieved from 13 website:**
  - International Organization of Securities Commissions (IOSCO)
  - International Forum of Independent Audit Regulators (IFIAR)
  - International Corporate Governance Network (ICGN)
  - American Investment Council (AIC)
  - European Securities and Markets Authority (ESMA)
  - European Fund and Asset Management Association (EFAMA)
  - Securities Industry and Financial Markets Association (SIFMA)
  - The Investment Association (TheIA)
  - Financial Reporting Council (FRC)
  - Council of Institutional Investors (CII)
  - Public Company Accounting Oversight Board (PCAOB)
  - Integrated Reporting (new part of IFRS foundation)
  - European Financial Reporting Advisory Group (EFRAG)

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  - Store files in a database
  - Build application for search <https://vasasearch.business.rutgers.edu>
  - Automatically generate periodical reports [https://raw.rutgers.edu/public\\_interest.html](https://raw.rutgers.edu/public_interest.html)

# Demonstration

- Search for files based on file name/ topic


File

Year

Select All

<input type="checkbox"/> 2023	<input type="checkbox"/> 2022	<input type="checkbox"/> 2021	<input type="checkbox"/> 2020	<input type="checkbox"/> 2019
<input type="checkbox"/> 2018	<input type="checkbox"/> 2017	<input type="checkbox"/> 2016	<input type="checkbox"/> 2015	<input type="checkbox"/> 2014
<input type="checkbox"/> 2013	<input type="checkbox"/> 2012	<input type="checkbox"/> 2011	<input type="checkbox"/> 2010	<input type="checkbox"/> 2009
<input type="checkbox"/> 2008	<input type="checkbox"/> 2007	<input type="checkbox"/> 2006	<input type="checkbox"/> 2005	<input type="checkbox"/> 2004
<input type="checkbox"/> 2003	<input type="checkbox"/> 2002	<input type="checkbox"/> 2001	<input type="checkbox"/> 2000	<input type="checkbox"/> 1999
<input type="checkbox"/> 1998	<input type="checkbox"/> 1997	<input type="checkbox"/> 1996	<input type="checkbox"/> 1995	<input type="checkbox"/> 1994
<input type="checkbox"/> 1993	<input type="checkbox"/> 1992	<input type="checkbox"/> 1991	<input type="checkbox"/> 1990	<input type="checkbox"/> 1989

Topic

Data Source 

Select All

<input type="checkbox"/> IOSCO	<input type="checkbox"/> AIC	<input type="checkbox"/> EFAMA	<input type="checkbox"/> ESMA	<input type="checkbox"/> SIFMA
<input type="checkbox"/> IFIAR	<input type="checkbox"/> TheIA	<input type="checkbox"/> ICGN		

Start

- accountability
- accounting estimates
- audit deficiencies
- audit failures
- audit business model
- audit network
- audit quality
- audit scandals
- auditor independence
- auditors opinion internal controls
- audits less complex entities
- business model
- conflict interest
- credit loss estimates
- critical mindset
- emerging forms external reporting
- ethical behavior
- ethical requirement
- ethics
- fee dependency
- fraud
- going concern
- technology
- data analytics
- nonassurance services
- noncompliance regulations
- noncompliance laws
- objectivity
- professional skepticism
- self review
- sustainability
- internal controls
- external reporting
- nist
- international audit
- confidentiality
- cybersecurity framework
- international standards
- governance
- audit compliance
- audit interview
- cyber compliance
- auditing standards
- ifac
- innovation
- fintech
- interviews
- gdpr
- key audit matters

# Demonstration

- Sort files by year, source, number of sentence, relevance

- View multiple documents at the same time

> Back

## Documents

Sort by Year  
Sort by Source  
Sort by Num of Sentence  
Sort by Relevance

Start Searching

<input type="checkbox"/> File Name	Relevance	Source	Num of sentence	Year
<input type="checkbox"/> Technical advice on third country regulatory equivalence under EMIR – US	82.0	ESMA	17	2013
<input type="checkbox"/> Disclosure-Requirements-For-Islamic-Capital-Market-Products	79.0	IOSCO	2	2013
<input type="checkbox"/> Comparative table of responses from EEA States	79.0	ESMA	1	2013
<input type="checkbox"/> FR102018-The-Application-of-Behavioural-Insights-to-Financial-Literacy-and-Investor-Education-Programmes-and-Initiatives	78.0	IOSCO	5	2018
<input type="checkbox"/> FR0223-Principles-for-the-Regulation-and-Supervision-of-Commodity-Derivatives-Markets	78.0	IOSCO	8	2023
<input type="checkbox"/> Technical advice on third country regulatory equivalence under EMIR – India	75.0	ESMA	3	2013
<input type="checkbox"/> ESMA report on trends, risks and vulnerabilities 1, 2018	74.0	ESMA	1	2018
<input type="checkbox"/> Annual Report 2017	73.0	ESMA	2	2018
<input type="checkbox"/> CR042018-IOSCO-Consultation-Report-on-Good-Practices-for-Audit-Committees-in-Supporting-Audit-Quality	73.0	IOSCO	2	2018
<input type="checkbox"/> Final report on Guidelines on non-significant benchmarks	73.0	ESMA	1	2018

Year

2023 (8)  
2018 (29)  
2013 (32)

Source

IOSCO (23)  
AIC (1)  
ESMA (31)  
SIFMA (9)  
IFIAR (2)  
TheIA (3)

# Demonstration

- The sentence with key words is in **red**; sentences before and after it are provided to help understand the context

- Documents can be marked as relevant after manual review and be seen by other users

- Link to the original file

- Export result is shown on the next slide

Sentences

(\*note: Relevance is marked by users)

Document	Sentence	Relevance
Report-on-the-International-Regulation-of-Derivative-Markets-Products-and-Financial-Intermediaries	cea ss o states that it is unlawful for a cta or cpo and their apss to engage in any course of conduct or to employ any device which may operate as a fraud upon any actual or prospective client or any participant. <i>rule contains rules which limit the opportunity for the fabrication or alteration of trade records, assure accountability for trading cards, and enhance exchange audit trail and trade surveillance.</i> rule requires that contract markets promulgate trading standards for floor brokers.	<input checked="" type="checkbox"/>
Report-on-the-International-Regulation-of-Derivative-Markets-Products-and-Financial-Intermediaries	rule (e) permits an exchange to provide (subject to the cftc approval) speculative limit exemptions. <i>pursuant to rules that have been submitted under rule (e) to the cftc for approval, u.s. exchanges may replace their speculative position limit rules with more flexible position accountability rules for eligible non-agricultural contracts.</i> position accountability rules allow the exchanges to retain the right to inquire about the accumulation of large positions and, for some contract markets, the additional right to prevent further accumulation of position when congestion concerns arise.	<input type="checkbox"/>
Report-on-the-International-Regulation-of-Derivative-Markets-Products-and-Financial-Intermediaries	pursuant to rules that have been submitted under rule (e) to the cftc for approval, u.s. exchanges may replace their speculative position limit rules with more flexible position accountability rules for eligible non-agricultural contracts. <i>position accountability rules allow the exchanges to retain the right to inquire about the accumulation of large positions and, for some contract markets, the additional right to prevent further accumulation of position when congestion concerns arise.</i> these position accountability rules, which have been adopted by most u.s. exchanges for interest rate, currency and metals contracts, tend to achieve similar regulatory objectives to traditional speculative position limits but do so more flexibly.	<input type="checkbox"/>
Report-on-the-International-Regulation-of-Derivative-Markets-Products-and-Financial-Intermediaries	position accountability rules allow the exchanges to retain the right to inquire about the accumulation of large positions and, for some contract markets, the additional right to prevent further accumulation of position when congestion concerns arise. <i>these position accountability rules, which have been adopted by most u.s. exchanges for interest rate, currency and metals contracts, tend to achieve similar regulatory objectives to traditional speculative position limits but do so more flexibly.</i> the cftc rule changes were intended: () to enable u.s. exchanges to better meet the competitive challenge of alternative regulatory systems, which lack such controls; and () to accommodate increasing institutional use of the markets, while maintaining the basic regulatory safeguards formerly provided by speculative position limits.	<input type="checkbox"/>

Save

Link To Original File

Export Sentences As Excel File



# Demonstration

- Export relevant sentences as excel file.

	A	B	C	D	E
1	filename	year	sentence	topic	relevance
2	FR0223-Principles	2023	principle : accountability - relevant market authorities should establish a clear framework of criteria or procedures as to design and review of commodity derivatives contracts, ensuring that the relevant market authority retains powers to address or vary the provisions of contracts, which produce manipulative or disorderly conditions, or systemic risk.	accountability	0
3	FR0223-Principles	2023	accountability implies more than the mere retention of necessary powers, by entailing a solid framework for the appropriate use of those powers.	accountability	0
4	FR0223-Principles	2023	accountability such entities should consider undertaking measures to ensure the authenticity of the reported data, such as periodically documenting and disclosing the following information to the public: * the source and method of collecting initial data (i.e., primary or secondary source); * statistical techniques or methodology used for processing of initial data to develop valuable assessments; * rationale for adopting the methodology; * procedure of review and approval of the selected methodology; and * change in the methodology and rationale behind the same.	accountability	0
5	FR0223-Principles	2023	see , p. reforming otc derivatives markets: a uk perspective, fsa/hm treasury, december , available at: the commodity market, although in certain jurisdictions this is refined to apply to all positions which exceed a pre-determined accountability limit.	accountability	0
6	FR0223-Principles	2023	in the united states, the framework for addressing threats of manipulation and congestion has included both federally mandated position limits in certain contracts, position limits in other contracts fixed by exchanges and (since ) position accountability exemptions.	accountability	0
7	FR0223-Principles	2023	appendix a - summary of the principles (without footnote citations) principles for the design and review of physical commodity derivatives contracts principle : accountability - relevant market authorities should establish a clear framework of criteria or procedures as to design and review of commodity derivatives contracts, ensuring that the relevant market authority retains powers to address or vary the provisions of contracts, which produce manipulative or disorderly conditions, or systemic risk.	accountability	0
8	FR0223-Principles	2023	original revised (new revision) contract design principles principle: accountability - market authorities should establish a clear framework as to design and review criteria or procedures for commodity derivatives contracts.	accountability	0
9	FR0223-Principles	2023	principle : accountability - relevant market authorities should establish a clear framework of criteria or procedures as to design and review of commodity derivatives contracts, ensuring that the relevant market authority retains powers to address or vary the provisions of contracts, which produce manipulative or disorderly conditions, or systemic risk.	accountability	0
10	FR102018-The-Ac	2018	non-economic incentives (such as introducing accountability and conveying social norms) can foster group saving behaviour.	accountability	0

# Make your database talk to you

- Use natural language ask ChatGPT to generate SQL code to query the database
- ChatGPT summarize retrieved content
- ChatGPT generate periodically report

[https://raw.rutgers.edu/public\\_interest.html](https://raw.rutgers.edu/public_interest.html)

## ESMA Brief - 2020

### *Review of Principles and Compliance Areas: Market Ethics, Governance, and Information Sharing (Topic: governance)*

The code under discussion covers crucial principles and areas like ethics, governance, transparency, and information sharing in markets. It addresses issues such as market manipulation and compliance risks, and aims to prevent behavior that could disrupt market functioning or distort price discovery. It lays out stringent requirements for administrators of benchmarks, including governance, conflict of interest, record keeping, input data, methodology, and code of conduct requirements. The code applies sanctions for each infringement, including non-compliance with the code of conduct and breaches of governance and control requirements. Respondents acknowledge the complexity of precise information identification in areas like internal or external investigations, board changes, key contract disputes, declining financial performance, and more. Despite favoring the proposed code, most respondents highlight the need to provide high-level obligations, giving the issuer the choice of consistent arrangements and procedures. Issues such as market abuse, short-selling, auditing, and corporate governance are also relevant. The report highlights the importance of open and transparent standards with a strong governance framework for reporting, with most respondents agreeing with the utilization of the ISO standard. Furthermore, the product identifier used in derivatives reporting should meet several conditions, including appropriate governance framework, accessibility, reliability, and neutrality.

### *Complex Information Identification and Sustainability Priorities in the Finance Industry (Topic: esg)*

Several sectors where information identification is particularly difficult include internal and external investigations, board changes, declining financial performance outside insolvency, and transactions like mergers and acquisitions or joint ventures. Guidelines are being written on outsourcing to the cloud by a task force reporting to the financial innovation standing committee. The European Securities and Markets Authority (ESMA) is working to integrate Environmental, Social, and Governance (ESG) factors and sustainability into its activities. Actions recommended include the disclosure of ESG factors by issuers and harmonization of ESG disclosure from credit rating agencies (CRAs). This should increase the transparency of the impact ESG considerations have on credit ratings. ESMA has also set up a new subgroup to develop standards for ESG disclosures due to requirements set out by the Sustainable Finance Disclosures Regulation (SFDR). There is a highlighted need for moving towards a more sustainable economy, and tackling ESG-related risks. Various workshops focusing on market data issues, cyber/cloud computing, investors' ESG disclosures, and high-frequency trading have been arranged. Asset classes like Environmental, Social, and Governance (ESG)-oriented equity indices and funds have outperformed counterparts not focusing on ESG. The importance of ESG factors for investors saw net inflows in money markets even when equities suffered net outflows.

