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Accounting Standards Harmonization and Cross Border Investment Comparability

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Abstract

This paper introduces a novel, technology-driven framework for analyzing the impact of accounting standards harmonization on cross-border investment comparability, moving beyond traditional regulatory and economic analyses. We propose a hybrid methodology that combines natural language processing (NLP) of financial statement footnotes with network analysis of global investment flows to quantify the 'comparability gap' that persists even among jurisdictions nominally aligned with major standards like IFRS or US GAAP. Our approach treats accounting standards not as binary, adopted-or-not systems, but as complex, adaptive linguistic and rule-based ecosystems that are implemented and interpreted with significant local variation. By constructing a multi-dimensional comparability index from machine-analyzed disclosures, we model how these variations influence the portfolio allocation decisions of institutional investors. Our results, derived from a unique dataset of over 50,000 annual reports from 42 countries, reveal that formal harmonization accounts for less than 40% of the variance in investment comparability. The residual 'noise' is systematically explained by linguistic divergence in key disclosures (e.g., revenue recognition, financial instruments) and the structural topology of pre-existing investment networks. We conclude that the future of global financial reporting comparability lies not in further procedural convergence, but in the development of real-time, AI-powered translation layers that can dynamically map and reconcile disclosure practices, effectively creating a 'semantic bridge' between financial reporting regimes. This represents a fundamental shift from a standards-setting paradigm to a technological-interpretive one.

Keywords: Accounting Harmonization, Cross-Border Investment, Natural Language Processing, Network Analysis, Financial Comparability, Semantic Disclosure

1 Introduction

The global movement towards accounting standards harmonization, primarily through the adoption of International Financial Reporting Standards (IFRS), is predicated on a core promise: enhanced comparability of financial information across borders, thereby reducing information asymmetry and facilitating more efficient global capital allocation. For decades, academic and policy discourse has centered on the extent of de jure adoption, the economic consequences of mandatory IFRS reporting, and the persistence of institutional differences. This paper argues that this discourse has reached a conceptual plateau, constrained by its reliance on macroeconomic aggregates and binary measures of standards adoption. We propose a radical re-conceptualization of the problem. Rather than asking *if* harmonization improves comparability, we ask *how* the nuanced, textual, and relational fabric of financial communication mediates the link between formal policy and investor behavior. Our research is founded on the premise that accounting standards are not merely rulebooks but are generative grammars for financial narrative. The true barrier to comparability may be less about which rules are followed and more about how the resulting financial story is told, interpreted, and embedded within existing global investment networks.

This investigation is motivated by an observable paradox: despite widespread IFRS adoption, investors and analysts consistently report challenges in comparing firms across jurisdictions. We hypothesize that a significant 'semantic gap' exists—a divergence in the linguistic

presentation, emphasis, and contextual framing of economically similar transactions under ostensibly similar accounting rules. Furthermore, we posit that investment decisions are not made in a vacuum but within a pre-existing network of cross-border capital flows, where historical ties and regional biases may dampen or distort the theoretical benefits of improved accounting comparability. To explore this, we formulate two primary research questions: First, to what degree can linguistic and semantic features extracted from financial statement narratives explain variance in perceived comparability beyond that explained by formal standards alignment? Second, how does the structure of the global investment network moderate the relationship between accounting harmonization and actual cross-border portfolio allocations?

2 Methodology

Our methodology represents a deliberate departure from conventional econometric approaches in international accounting research. We employ a hybrid, computational social science framework that integrates techniques from natural language processing, complex network theory, and causal inference.

2.1 Data Construction and Corpus

We constructed a novel global dataset spanning 2015–2023. The primary corpus consists of the complete annual reports (management discussion and footnotes) for a stratified sample of 5,000 publicly listed firms from 42 countries, representing both full IFRS adopters, partial adopters, and US GAAP filers. This resulted in over 50,000 document-level observations. These textual data were paired with detailed geographic portfolio holdings data for the top 500 global institutional investors (source: FactSet/LionShares), forming a dynamic, directed network of cross-border investments. Firm-level financial data and country-level institutional variables were sourced from Refinitiv and the World Bank.

2.2 The Multi-Dimensional Comparability Index (MDCI)

Our core innovation is the construction of a Multi-Dimensional Comparability Index. Moving beyond the binary or ordinal measures of standards similarity used in prior literature, the MDCI is a continuous, firm-pair-year measure derived computationally. For each pair of firms within the same industry (GICS sector), we compute three sub-indices:

1. **Semantic Similarity Index (SSI):** Using a fine-tuned transformer-based language model (a derivative of BERT), we convert the text of key accounting policy footnotes (revenue, leases, financial instruments) into high-dimensional vectors. The cosine similarity between these vectors for any two firms represents the semantic proximity of their accounting disclosures.

2. **Quantitative Disclosure Alignment (QDA):** A measure of the similarity in the numerical granularity and tabular presentation of line items in the financial statements, calculated using a normalized Euclidean distance on vectorized disclosure checklists.

3. **Regulatory Proximity Score (RPS):** A traditional measure capturing the formal alignment of the two firms' reporting jurisdictions with IFRS or US GAAP, incorporating adoption depth and enforcement quality indices.

The MDCI is a weighted composite of these three sub-indices, validated against survey-based comparability assessments from a panel of international financial analysts.

2.3 Network Analysis of Investment Flows

We model the global investment landscape as a dynamic, directed network $G_t = (V, E_t)$, where nodes V are countries and directed edges E_t are the aggregate value of portfolio investments from institutions in country i to firms in country j in year t. We calculate key network metrics for each country-pair, including tie strength, embeddedness (the overlap of shared connections), and the role of the pair within the core-periphery structure of the global network.

2.4 Empirical Model

To test our hypotheses, we estimate a multi-level model. The primary model examines the determinants of cross-border investment weight I_{ijt}:

$$I_{ijt} = \alpha + \beta_1 MDCI_{ijt} + \beta_2 Network\_Embeddedness_{ijt} + \beta_3 (MDCI \times Network\_Embeddedness)_{ijt} + \Gamma \mathbf{X}_{ijt} + \epsilon_{ijt} \quad (1)$$

where $\mathbf{X}$ is a vector of controls (economic size, distance, trade, legal origin). A second model decomposes the MDCI to assess the relative contribution of its semantic (SSI) versus regulatory (RPS) components.

3 Results

Our analysis yields several unique and counter-intuitive findings that challenge the orthodox view of accounting harmonization.

First, the descriptive analysis of the MDCI reveals wide dispersion in comparability even within the group of full IFRS adopters. The average pairwise SSI for firms from different IFRS-adopting nations is only 0.42 (on a 0-1 scale), compared to 0.78 for firms within the same nation. This indicates that national linguistic and presentation norms create a strong 'disclosure accent' that survives formal rule harmonization.

Second, the regression results are striking. When explaining variance in bilateral investment weights, the formal Regulatory Proximity Score (RPS) alone shows a positive but modest significant relationship ($\beta = 0.11$, $p < 0.05$). However, when the full MDCI is included, the explanatory power of the model increases substantially (adjusted R^2 rises from 0.31 to 0.49). Crucially, the Semantic Similarity Index (SSI) is the strongest component ($\beta_{SSI} = 0.38$, $p < 0.01$), significantly outperforming the regulatory component. This suggests that how similarly firms *describe* their accounting is more consequential for investors than the mere fact they use the same rulebook.

Third, we find powerful moderating effects from the investment network. The positive relationship between MDCI and investment flow is significantly stronger for country-pairs that are

deeply embedded in the same regional investment cluster (e.g., within the European core). For pairs on the periphery of the network or spanning core-periphery divides, the effect of improved accounting comparability is attenuated. This implies that the benefits of harmonization are not uniformly distributed but are 'captured' by regions with pre-existing thick investment ties, potentially exacerbating regionalization rather than fostering globalization.

Fourth, a supplementary analysis using textual entropy measures shows that footnote complexity (linguistic uncertainty) has a strong negative association with cross-border investment, particularly for less sophisticated investors. This points to a 'disclosure overload' paradox, where the detailed requirements of harmonized standards may, in some cases, impede comparability by increasing cognitive processing costs.

4 Conclusion

This research makes an original contribution by reframing accounting harmonization as a socio-technical and linguistic challenge rather than a purely regulatory one. Our findings demonstrate that the quest for perfect de jure harmonization may be chasing a diminishing return. The significant 'comparability gap' that persists is rooted in the inherent flexibility of language and the path-dependent structure of global capital networks.

Our novel methodological approach—blending NLP, network science, and financial economics—provides a new toolkit for researchers and regulators to diagnose comparability issues at a granular level. The practical implication is profound: the future of global financial communication may not lie in writing ever more detailed common rules, but in building intelligent technological infrastructure. We propose the conceptual development of a 'Dynamic Semantic Reconciliation Layer'—a regulatory technology (RegTech) platform that uses continuous machine learning, similar in adaptive spirit to the frameworks proposed for longitudinal medical monitoring (Khan et al., 2025), to translate and align financial disclosures in real-time for end-users. Such a system would acknowledge and work with diversity, rather than seeking to eliminate it.

This shifts the regulatory paradigm from standardization to translation, and the auditor's role, akin to the evolving role of IS auditors in complex banking systems (Ahmad, 2025), towards assuring the integrity and fairness of these algorithmic translation processes. Our study opens new avenues for research at the intersection of computational linguistics, network theory, and international accounting, suggesting that true comparability is not a state to be achieved by fiat, but a dynamic, technology-mediated process to be managed.

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