

LEGAL AND ADMINISTRATIVE ASPECTS OF APPLYING SUSTAINABILITY-RELATED FINANCIAL REGULATION IN THE EUROPEAN UNION: ADMINISTRATIVE DENSITY, SUPERVISORY DISCRETION, AND COMPARATIVE ENFORCEMENT ASYMMETRY IN BULGARIA AND POLAND**Pawel Frankiewicz¹**

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ABSTRACT. This article analyzes sustainability-related financial regulation in the European Union as a density-driven administrative governance framework that expands procedural obligations and supervisory discretion within financial law. Moving beyond conventional interpretations, it conceptualizes Regulation (EU) 2019/2088 (SFDR), Regulation (EU) 2020/852 (Taxonomy Regulation), and Directive (EU) 2022/2464 (CSRD) as structural instruments of regulatory density rather than policy-oriented measures. Through layered disclosure requirements, delegated technical standards, assurance mechanisms, and supervisory integration, these instruments reshape the architecture of financial administrative law across Member States. Using a structured comparative administrative-law methodology, the article examines how Bulgaria and Poland mediate regulatory density through their institutional configurations. The findings demonstrate that harmonized EU norms produce differentiated enforcement outcomes depending on supervisory integration, administrative coordination, and institutional capacity. The article advances the Regulatory Density Governance Model (RDGM) to explain how normative layering and procedural expansion interact with decentralized enforcement in the EU legal order.

Keywords: EU financial regulation; administrative law; supervisory discretion; regulatory density; compliance governance; enforcement asymmetry; Bulgaria; Poland.

INTRODUCTION

The recent expansion of sustainability-related obligations within European Union financial regulation has generated a structural tension at the heart of the Union's administrative architecture. On the one hand, the EU has adopted harmonized and directly applicable instruments – Regulation (EU) 2019/2088 (SFDR), Regulation (EU) 2020/852 (Taxonomy Regulation), and Directive (EU) 2022/2464 (CSRD) – that establish uniform reporting frameworks and technical standards across Member States [4-6]. On the other hand, enforcement authority remains predominantly national, embedded within heterogeneous supervisory systems [2]. The result is an emerging structural paradox: increasing normative thickening without guaranteed convergence in administrative execution.

These instruments do not simply introduce additional reporting requirements. They embed interlinked disclosure architectures, delegated technical screening criteria, prudential reporting metrics, digital tagging obligations, and mandatory assurance mechanisms into the core of financial supervision. In doing so, they intensify a broader post-crisis trajectory in EU financial governance characterized by proceduralization and disclosure-based oversight [9]. Contemporary scholarship has emphasized the growing reliance on layered compliance frameworks and supervisory judgment within EU corporate and financial regulation [7]. Sustainability-related financial regulation, however, represents a qualitative escalation of this development: it multiplies normative layers, expands delegated rule-making, and thickens documentation obligations within prudential and corporate supervisory cycles.

The central legal issue is therefore not the existence of additional reporting duties, but the cumulative effect of procedural proliferation within a decentralized enforcement structure. EU financial law operates through centralized legislative harmonization combined with national

supervisory mediation [2]. As compliance obligations expand through delegated acts, Regulatory Technical Standards, and European Sustainability Reporting Standards, supervisory discretion correspondingly widens [1]. Yet the exercise of that discretion remains institutionally differentiated across Member States. The interaction between normative expansion and administrative heterogeneity generates the risk of density without uniformity.

Existing scholarship has examined disclosure governance in EU financial regulation [9], the procedural transformation of corporate oversight [7], and supervisory convergence within the Union's administrative framework [2]. Comparative institutional studies have demonstrated that supervisory architecture influences financial stability and crisis-response capacity [8].

However, limited attention has been devoted to the interaction between expanding compliance layering and decentralized enforcement architectures in sustainability-related financial regulation. In particular:

- The cumulative impact of delegated acts, technical standards, and reporting templates has not been systematically conceptualized as a structural transformation of administrative financial law.
- The relationship between procedural expansion and supervisory discretion has not been integrated into comparative enforcement analysis.
- The differentiated absorption of compliance thickening across Member States has not been examined through a structured administrative-law model.

As a result, sustainability-related financial regulation is frequently analyzed in thematic or sectoral terms rather than as a systemic reconfiguration of administrative governance within EU financial law.

This article addresses that gap by conceptualizing sustainability-related financial regulation as a regime of *Regulatory Density Governance*. It advances three interrelated contributions:

Theoretical Contribution: It develops the Regulatory Density Governance Model (RDGM), linking normative layering, procedural expansion, supervisory discretion amplification, and administrative mediation capacity to differentiated enforcement outcomes. The model provides a structured analytical framework for examining how compliance thickening reshapes supervisory authority within EU administrative law.

Doctrinal Contribution: It reframes sustainability-related financial instruments not as a substantive policy shift but as a procedural transformation of financial administrative governance. This perspective clarifies their systemic implications for delegated rule-making, executive standard-setting, and enforcement asymmetry.

Comparative Contribution: It offers a structured comparative analysis of Bulgaria and Poland, demonstrating how variations in supervisory integration and interpretative coordination mediate the absorption of normative expansion. By extending prior comparative work on stability governance [8] into the domain of routine compliance supervision, the study connects institutional design with differentiated enforcement outcomes.

This study provides one of the first systematic conceptualizations of sustainability-related financial regulation through a regulatory density governance lens and empirically examines its differentiated enforcement mediation in two structurally distinct EU Member States.

The selection of Bulgaria and Poland is analytically grounded rather than illustrative. Both jurisdictions are subject to identical EU legal obligations under SFDR, the Taxonomy Regulation, and CSRD. However, their supervisory architectures differ significantly.

Bulgaria operates a segmented model dividing prudential and non-bank supervision between distinct authorities. Poland maintains a more integrated supervisory configuration under a consolidated financial supervision authority. These structural differences affect interpretative coordination, supervisory dialogue, and administrative mediation capacity.

The comparison therefore isolates institutional integration as a mediating variable in the translation of harmonized EU norms into enforcement practice. By examining two Member States

with equivalent normative obligations but divergent supervisory architectures, the study clarifies how administrative structure conditions compliance internalization.

Methodological Approach

The analysis combines doctrinal interpretation of EU legal instruments with a qualitative comparative institutional assessment of national supervisory architectures. Primary sources include Regulations (EU) 2019/2088 and 2020/852, Directive (EU) 2022/2464, delegated acts, and EBA implementing technical standards [3]. The comparative component evaluates transposition techniques, supervisory integration, interpretative guidance practices, and enforcement embedding within Bulgaria and Poland.

The article advances the *following thesis*:

Sustainability-related financial regulation in the European Union operates as a density-driven administrative governance framework in which normative layering and procedural expansion amplify supervisory discretion, while enforcement outcomes are mediated by national administrative capacity.

Under this framework, harmonized EU legal instruments do not automatically generate uniform regulatory practice. Instead, compliance thickening is filtered through institutional architecture, interpretative coordination, and supervisory integration, producing differentiated enforcement trajectories within the Union's multilevel administrative order.

Problem statement and relevance

The incorporation of sustainability-related obligations into EU financial regulation has generated a structural transformation in the Union's financial administrative order. This transformation is best understood through the concept of regulatory density. Regulatory density refers to the cumulative and interdependent layering of procedural, delegated, and technical obligations embedded within supervisory cycles. It manifests as compliance thickening: the progressive embedding of interlinked reporting architectures, classification systems, and governance documentation requirements across prudential, product-level, and corporate supervisory domains.

Regulatory density must be distinguished from adjacent concepts. It is not synonymous with regulatory complexity, which may arise from technical sophistication or institutional multiplicity. Density instead captures the accumulation and cross-referencing of layered obligations that must be fulfilled simultaneously within interconnected legal regimes. Nor is it reducible to proceduralization. While proceduralization denotes a shift from substantive command toward process-based oversight [9], regulatory density describes the multiplication and structural embedding of such processes across legislative acts, delegated instruments, and technical standards.

Within the sustainability-related framework, density emerges from the interaction of Regulation (EU) 2019/2088 (SFDR), Regulation (EU) 2020/852 (Taxonomy Regulation), Directive (EU) 2022/2464 (CSRD), delegated acts adopted under Article 290 TFEU, Regulatory Technical Standards, European Sustainability Reporting Standards, and prudential implementing technical standards issued by the European Banking Authority [4-6; 3]. Each instrument introduces structured reporting and documentation requirements. Their interdependence produces regulatory embedding across multiple supervisory domains: classification criteria influence product disclosures; product disclosures interact with corporate reporting; corporate reporting is subject to assurance; and prudential metrics integrate taxonomy-based data into supervisory review.

Delegated legislation plays a central role in this density expansion. Article 290 TFEU authorizes the Commission to supplement or amend non-essential elements of legislative acts. In the sustainability-related framework, delegated acts define operative technical screening criteria and reporting parameters. This enhances regulatory adaptability but simultaneously intensifies the constitutional tension between flexibility and foreseeability. As operative standards increasingly derive from executive technical rule-making, the institutional balance between Commission initiative and legislative oversight by the Parliament and Council becomes more pronounced. Adaptability is secured through iterative technical updates; foreseeability depends on coherent interpretative mediation within national supervisory systems. Under density conditions, legal

certainty is therefore shaped not only by legislative clarity but by the stability and transparency of supervisory practice.

The structural consequence of regulatory density is the amplification of supervisory discretion. Although harmonized templates and technical standards standardize reporting formats, supervisory authorities retain evaluative authority regarding methodological robustness, classification alignment, governance integration, and documentation adequacy. Modern financial supervision relies extensively on supervisory judgment in complex regulatory environments [1]. Density does not eliminate discretion through standardization; it reconfigures it. Even in the presence of formally harmonized templates, evaluative interpretation remains embedded in supervisory review processes.

This amplification of discretion interacts with the decentralized enforcement architecture of EU financial law. Legislative harmonization is supranational, but supervisory execution remains national [2]. EU administrative governance operates through coordination rather than hierarchical command. Under conditions of regulatory density, national authorities mediate interdependent reporting architectures within heterogeneous institutional contexts. Normative uniformity at EU level therefore coexists with administrative heterogeneity in execution.

The systemic concern is that regulatory density, when combined with decentralized supervisory mediation, structurally conditions the likelihood of enforcement asymmetry. Enforcement asymmetry refers to differentiated supervisory intensity, interpretative guidance practices, sanctioning visibility, and depth of regulatory embedding across Member States subject to identical legal norms. Such divergence may not manifest as formal legal fragmentation, but through variation in supervisory expectations, thematic prioritization, or documentation scrutiny.

The implications for the internal market are consequential. Uneven supervisory embedding may generate internal market distortion, as financial institutions operating under formally uniform EU rules face differentiated regulatory burdens. Divergent supervisory intensity may incentivize regulatory competition or supervisory arbitrage, whereby market actors adjust organizational or jurisdictional strategies in response to perceived enforcement environments. Variability in density absorption may thus affect competitive neutrality and challenge the principle of equal application of EU law.

Comparative institutional scholarship has demonstrated that supervisory architecture influences financial stability and crisis-response capacity within Member States [8]. Extending this insight to routine governance embedding suggests that institutional integration, interpretative coordination, and administrative capacity mediate how regulatory density is absorbed and operationalized. The structural problem is therefore not merely whether sustainability-related financial regulation is harmonized, but whether harmonization of norms can secure convergence of supervisory execution under conditions of executive rule expansion and layered procedural embedding.

Sustainability-related financial regulation thus serves as a revealing case study of broader transformations in EU administrative law. Governance increasingly operates through structured reporting infrastructures rather than direct behavioral mandates [9]. Delegated acts and technical standards define operative parameters of regulatory embedding, intensifying questions of institutional balance and executive norm-setting authority. Most importantly, the effectiveness of harmonized regulation depends less on textual uniformity than on the coherence of national administrative mediation.

The structural issue can therefore be framed with precision: the cumulative layering of delegated and technical obligations within EU financial law, embedded in supervisory cycles and mediated through decentralized architectures, amplifies evaluative discretion and structurally increases the probability of differentiated enforcement outcomes. Its systemic relevance lies in its implications for legal certainty, internal market coherence, and the evolving balance between legislative harmonization and administrative mediation in the Union's multilevel legal order.

Analysis of the latest researches and publications

The contemporary debate on sustainability-related financial regulation must be situated within the broader transformation of EU financial administrative law following the 2008 financial crisis. Post-crisis reforms reconfigured EU financial governance through intensified supervisory coordination, expanded technical standard-setting, and layered reporting architectures. This transformation marked a shift toward procedural embedding and executive rule-making within financial regulation.

Moloney (2021) characterizes EU financial regulation as increasingly reliant on disclosure-based governance and structured reporting mechanisms [9]. Similarly, Busch et al. (2024) demonstrate that EU corporate and financial reform has progressively emphasized governance documentation, transparency infrastructures, and supervisory evaluation rather than direct substantive command [7]. Sustainability-related financial instruments extend this trajectory: they embed additional delegated criteria, technical screening parameters, and standardized reporting templates within already dense supervisory cycles.

However, existing scholarship tends to analyze sustainability-related instruments as extensions of disclosure governance without conceptualizing their cumulative structural implications. The multiplication of delegated acts under Article 290 TFEU, Regulatory Technical Standards, and European Sustainability Reporting Standards has not been systematically theorized as a distinct governance phenomenon. The literature acknowledges proceduralization, but it does not conceptualize the interdependent layering of delegated and technical instruments as regulatory density.

A second strand of scholarship addresses supervisory discretion and administrative coordination within the EU's multilevel governance structure. Avgouleas and Goodhart (2015) emphasize that modern financial supervision necessarily relies on evaluative judgment, particularly where qualitative assessment predominates [1]. Chiti and Recine (2018) demonstrate that EU financial governance operates through administrative networks rather than hierarchical enforcement, with convergence pursued through coordination mechanisms rather than centralized command [2].

These contributions establish that supervisory discretion and enforcement heterogeneity are structural features of EU financial law. Yet they do not integrate this insight with the cumulative expansion of layered sustainability-related instruments. The interaction between normative layering and discretion amplification remains under-theorized.

Comparative institutional scholarship provides an additional dimension. Recent research demonstrates that supervisory architecture and administrative coordination significantly influence financial system stability and crisis governance outcomes in Poland and Bulgaria [8]. These findings underscore that institutional configuration mediates the effectiveness of harmonized EU norms. However, the focus of that analysis lies primarily in stability governance rather than in the routine supervisory embedding of layered reporting obligations.

The present study extends this comparative insight into the domain of sustainability-related financial regulation. It posits that the same institutional variables influencing crisis-response effectiveness also mediate the absorption of regulatory density in routine supervisory practice. In doing so, it shifts the analytical focus from episodic crisis governance to continuous administrative embedding.

Institutional materials, including EBA implementing technical standards on ESG-related disclosures [3], illustrate the growing role of technical standardization in embedding sustainability metrics within prudential supervision. Nevertheless, academic engagement with these instruments remains limited and predominantly descriptive. The structural relationship between delegated technical rule-making and national supervisory mediation has not been systematically conceptualized.

A critical review of the literature therefore reveals four unresolved issues.

First, the cumulative interdependence of delegated acts, technical standards, and reporting templates has not been conceptualized as a structural transformation of EU financial administrative

law. Sustainability-related regulation is frequently examined in thematic terms rather than as an instance of normative layering within a multilevel governance order.

Second, although supervisory discretion is widely recognized [1], its amplification under conditions of layered procedural embedding has not been modeled analytically.

Third, convergence scholarship [2] emphasizes coordination mechanisms but does not fully address how regulatory density may structurally condition enforcement asymmetry even in the presence of harmonized templates.

Fourth, comparative institutional analyses [8] demonstrate the importance of supervisory architecture for crisis governance but do not extend this logic to routine embedding of delegated and technical reporting obligations.

These gaps indicate the absence of a unified theoretical framework linking normative layering, procedural embedding, supervisory discretion, and institutional mediation within sustainability-related financial regulation.

The Regulatory Density Governance Model advanced in this article addresses this lacuna. By conceptualizing sustainability-related financial regulation as an instance of regulatory density governance, it integrates disclosure theory [9], corporate governance proceduralization [7], supervisory discretion scholarship [1], administrative convergence theory [2], and comparative institutional analysis [8] within a single explanatory architecture.

Rather than treating sustainability-related regulation as a discrete policy field, the model situates it within the structural evolution of EU financial administrative law. It reframes the debate from thematic sustainability analysis toward systemic governance transformation and provides a coherent explanation for differentiated enforcement trajectories within a formally harmonized legal order.

MAIN RESEARCH RESULTS

The application of the Regulatory Density Governance Model (RDGM) to the EU sustainability-related financial framework and to the comparative analysis of Bulgaria and Poland reveals a structurally coherent governance chain in which normative layering, executive technical expansion, constitutional filtering, administrative mediation, and differentiated enforcement operate as interdependent stages of a single administrative configuration. The findings demonstrate that sustainability-related financial regulation does not merely extend disclosure obligations but restructures the internal mechanics of EU financial supervision through density-driven governance.

The first principal result concerns the structural nature of regulatory density at EU level. The combined operation of Regulation (EU) 2019/2088 (SFDR), Regulation (EU) 2020/852 (Taxonomy Regulation), and Directive (EU) 2022/2464 (CSRD), together with delegated acts adopted pursuant to Article 290 TFEU and implementing technical standards issued by the European Supervisory Authorities, produces a multilayered and interdependent reporting architecture [4-6; 3]. These instruments do not function as parallel regulatory streams; rather, they constitute mutually conditioning normative layers.

Taxonomy alignment requirements inform product-level disclosures under SFDR; SFDR disclosures are cross-referenced with corporate sustainability reporting under CSRD; CSRD reporting is subject to assurance mechanisms and supervisory oversight; and prudential ESG disclosure templates developed under EBA standards incorporate taxonomy-based metrics into supervisory evaluation cycles. Normative layering thus generates structural interdependence across prudential supervision, market transparency, and corporate governance oversight.

This interaction confirms that sustainability-related financial regulation operates as a density-driven governance configuration rather than as a collection of discrete reporting duties. The cumulative effect is structural embedding of documentation infrastructures within supervisory cycles. As Moloney (2021) has observed in the broader context of EU securities and financial markets regulation, disclosure-based governance increasingly structures supervisory practice. Sustainability-related regulation intensifies this trajectory by transforming disclosure into a multi-domain administrative infrastructure [9]. Busch et al. (2024) similarly note the proceduralization of EU corporate governance; the present findings demonstrate that sustainability-related financial

regulation extends this procedural turn into prudential supervision, creating a dense documentation regime that conditions evaluative oversight [7].

The second principal result concerns the transformation of supervisory discretion under conditions of density. Although sustainability-related instruments rely on standardized templates and harmonized quantitative indicators, standardization operates primarily at the level of format. Supervisory authorities retain, and in practice expand, evaluative authority over methodological robustness, governance integration, documentation coherence, and alignment between internal systems and reported outputs. The empirical examination of delegated taxonomy screening criteria and regulatory technical standards under SFDR shows that technical standardization narrows variability in presentation while simultaneously expanding the scope of qualitative review.

In this sense, regulatory density does not merely increase compliance burden; it redistributes supervisory authority. Evaluation shifts from verification of isolated numerical indicators toward assessment of governance architecture and internal documentation systems. As Avgouleas and Goodhart (2015) argue, supervisory judgment is intrinsic to complex regulatory environments. The findings here refine that insight: density amplifies qualitative supervisory discretion by embedding interdependent reporting obligations within continuous oversight cycles [1].

This amplification of discretion is structurally linked to executive norm-setting under Article 290 TFEU. While primary legislative acts establish the framework of sustainability-related obligations, the operative technical content—taxonomy screening thresholds, detailed disclosure indicators, reporting specifications—is elaborated through delegated regulations and technical standards adopted by the Commission [5; 3]. Formally, Article 290 TFEU permits delegation only for non-essential elements, preserving the institutional balance between the legislature and the executive. The essential elements doctrine, as articulated in CJEU jurisprudence (e.g., Case C-355/10 Parliament v Council; Case C-270/12 United Kingdom v Parliament and Council), ensures that core policy choices remain within legislative competence.

Functionally, however, delegated technical acts determine the measurable parameters of compliance and thereby shape the intensity of supervisory scrutiny. The density identified in this study is therefore structurally dependent on executive supplementation. Delegated acts do not merely clarify legislative intent; they operationalize the criteria by which compliance is evaluated. The Commission's technical discretion, exercised within constitutionally authorized limits, becomes a central driver of density.

This executive expansion is constitutionally filtered through judicial review, proportionality, and legal certainty. The CJEU traditionally accords the Commission a broad margin of discretion in areas involving complex technical assessment (Case C-12/03 P Commission v Tetra Laval). Sustainability-related financial regulation, particularly taxonomy-based classification and ESG indicator calibration, falls within such technically complex domains. Judicial review thus focuses on manifest error, misuse of powers, and procedural compliance rather than substantive recalibration of technical thresholds.

Under density conditions, this margin of discretion acquires cumulative significance. Iterative amendments to delegated acts alter operative compliance criteria over time, rendering foreseeability dynamic rather than static. Legal certainty depends not only on the clarity of primary legislation but on the stability and accessibility of delegated technical standards. Proportionality must be assessed cumulatively, as layered reporting obligations may generate burdens that exceed the impact of any individual instrument. Nevertheless, constitutional safeguards remain operative: delegated acts are subject to annulment actions, national supervisory decisions are reviewable before domestic courts, and preliminary references enable interpretative clarification.

The third principal result emerges at the level of national administrative mediation. EU financial governance is characterized by decentralized enforcement [2]. While legislative and delegated norms are uniform across Member States, supervisory execution remains national. Under density conditions, institutional architecture becomes the decisive mediating variable.

The comparative analysis of Bulgaria and Poland confirms that normative layering and executive technical expansion are formally equivalent in both jurisdictions. However, enforcement

trajectories diverge in relation to administrative mediation capacity. Poland operates under an integrated supervisory authority (Komisja Nadzoru Finansowego, KNF), facilitating cross-sectoral coordination between prudential, market, and governance oversight. Sustainability-related reporting is embedded within supervisory dialogue and governance evaluation. Delegated technical criteria are translated into structured interpretative guidance, enabling systemic absorption of density.

Bulgaria, by contrast, maintains a segmented supervisory structure, dividing prudential supervision (Bulgarian National Bank) and non-bank financial oversight (Financial Supervision Commission). While EU-level technical standards are formally applied, interpretative elaboration and cross-domain coordination remain comparatively limited. Sustainability-related reporting is absorbed incrementally, with emphasis on formal conformity to templates and alignment with European-level guidance.

The structural differences in administrative mediation capacity identified above are systematized in Table 1, which summarizes the institutional variables conditioning density absorption in Bulgaria and Poland.

Table 1. Institutional Mediation Variables and Density Absorption Patterns in Bulgaria and Poland

Structural Dimension	Bulgaria	Poland
Supervisory Architecture	Segmented	Integrated
Interpretative Mediation	Limited autonomous elaboration	Structured supervisory guidance
Cross-Domain Coordination	Moderate	Institutionalized
Density Embedding	Incremental / formal alignment	Systemic / governance-integrated
Qualitative Evaluation Depth	Emerging	Embedded within supervisory practice

Source: author's elaboration.

As demonstrated in Table 1, enforcement differentiation is structurally conditioned by institutional mediation rather than legislative variance. Poland's integrated supervisory architecture enables systemic embedding of delegated technical density, whereas Bulgaria's segmented structure constrains interpretative consolidation. This divergence substantiates the RDGM mechanism whereby executive norm expansion, filtered through decentralized administrative architectures, produces differentiated national absorption without normative fragmentation.

To further differentiate the depth of density absorption beyond institutional structure, Table 2 disaggregates supervisory embedding into analytical levels.

Table 2. Levels of Supervisory Embedding under Regulatory Density Conditions

Embedding Level	Conceptual Definition	Bulgaria	Poland
Formal Conformity	Template-based compliance verification	Strong	Strong
Procedural Integration	Integration into supervisory review cycles	Moderate	Strong
Governance Evaluation	Assessment of internal governance alignment	Emerging	Institutionalized

Source: author's elaboration.

Table 2 clarifies that enforcement differentiation does not emerge at the level of formal conformity—where both jurisdictions demonstrate alignment with EU reporting templates—but at the deeper levels of procedural integration and governance evaluation. Regulatory density, generated through normative layering and operationalized via delegated executive standards, acquires regulatory salience only when embedded within supervisory review cycles. Where administrative mediation enables systemic integration, qualitative governance scrutiny intensifies; where embedding remains primarily template-based, density retains a predominantly formal character. The variation observed across embedding levels thus illustrates how the RDGM governance chain translates executive technical expansion into differentiated supervisory depth within a decentralized administrative order.

The findings may accordingly be reconstructed as a structured governance sequence: interdependent normative layering at EU level generates regulatory density; density is operationalized through executive technical expansion under Article 290 TFEU; executive discretion is constitutionally filtered through judicial review and proportionality; national administrative mediation translates delegated technical standards into supervisory practice; and differentiated enforcement embedding materializes at the stage of institutional absorption.

At this terminal point in the sequence, differentiated enforcement outcomes become visible in supervisory practice. Harmonization of legal norms and reporting templates does not automatically ensure convergence of supervisory intensity. Where density is systemically embedded, supervisory expectations regarding governance documentation and methodological coherence become more exacting; where embedding remains incremental, review tends to prioritize formal conformity. Such variation, while compatible with decentralized enforcement, bears structural implications for competitive neutrality and the uniform application of EU law.

Taken together, the results confirm the explanatory robustness of the Regulatory Density Governance Model. Normative layering produces structural density; executive technical expansion under Article 290 TFEU operationalizes that density; constitutional filtering constrains but does not neutralize technical discretion; administrative mediation conditions the depth of institutional embedding; and enforcement differentiation arises structurally at the mediation stage rather than at the point of legislative design. Sustainability-related financial regulation therefore exemplifies a density-driven administrative governance regime operating within the EU's multilevel constitutional framework.

The following section builds upon these findings by examining their broader theoretical implications for EU administrative law, supervisory convergence doctrine, and the evolving relationship between legislative harmonization and executive technical norm production.

Discussion

The findings developed in the preceding section invite a broader theoretical reconsideration of sustainability-related financial regulation within the architecture of EU administrative law. The Regulatory Density Governance Model (RDGM), applied empirically to the sustainability-related financial framework, demonstrates that the central transformation is not sectoral but structural. Sustainability-related financial regulation exemplifies a shift toward density-driven administrative governance in which executive technical expansion, constitutionally bounded discretion, and decentralized mediation collectively redefine the operational logic of EU financial supervision.

1. Regulatory Density and the Transformation of EU Administrative Governance

The results situate sustainability-related financial regulation within a longer trajectory of procedural intensification in EU financial law. Post-crisis reforms have already strengthened disclosure-based governance and supervisory discretion [9]. However, sustainability-related instruments extend this trajectory by consolidating multiple reporting regimes into a structurally interdependent documentation infrastructure. Regulatory density thus emerges not merely as increased complexity, but as a transformation in the function of administrative supervision.

Within classical models of EU harmonization, legislative convergence is assumed to generate regulatory coherence across Member States. The RDGM findings complicate this assumption. Density does not displace harmonization; it reconfigures it. Normative layering produces formal convergence at the level of templates and metrics, yet simultaneously expands the interpretative space within which supervisory authorities operate. The convergence of norms coexists with differentiation of embedding.

This duality reflects a broader evolution in EU administrative governance from substantive harmonization toward procedural governance. As Busch et al. (2024) note in the corporate governance context, the EU increasingly governs through reporting infrastructures rather than direct intervention. Sustainability-related financial regulation illustrates how such infrastructures become embedded across prudential, market, and corporate domains, generating cumulative administrative density [7].

2. Executive Technical Expansion and Institutional Balance

The structural dependence of regulatory density on delegated acts under Article 290 TFEU has significant implications for institutional balance. While the essential elements doctrine preserves formal legislative primacy, the practical operationalization of sustainability-related obligations is shaped by executive technical standards. The Commission's delegated rule-making thus becomes a central driver of regulatory intensity.

This development does not necessarily destabilize institutional equilibrium. The constitutional safeguards of revocation, objection, and judicial review remain intact. However, the findings suggest that executive supplementation increasingly determines the measurable parameters of compliance and, consequently, the intensity of supervisory scrutiny. In areas characterized by technical complexity, judicial review is deferential, focusing on manifest error and procedural propriety rather than substantive recalibration (see [Case C-12/03 P Commission v Tetra Laval](#)).

The RDGM therefore highlights a structural feature of contemporary EU governance: executive norm-setting under Article 290 TFEU does not merely supplement legislative frameworks; it operationalizes regulatory density. The legislature defines the architecture; the executive defines its measurable intensity. This configuration raises important questions concerning foreseeability, cumulative proportionality, and the balance between adaptability and legal certainty in dynamic regulatory environments.

This structural dynamic resonates with broader scholarship on composite administration in the European Union. As Odoabaša & Marošević (2023) argues, contemporary EU governance increasingly operates through executive bodies that exercise norm-shaping functions within constitutionally delimited frameworks, producing what may be described as administrative densification rather than mere policy implementation. Delegation in such settings does not simply operationalize legislative intent; it restructures the relationship between norm production and supervisory execution within a multilevel order [10]. The RDGM findings align with this perspective by demonstrating that executive technical expansion under Article 290 TFEU functions as a constitutive component of regulatory density, whose practical implications are mediated through decentralized supervisory architectures rather than determined solely at the legislative stage.

3. Decentralization, Mediation, and Supervisory Convergence

Perhaps the most significant theoretical implication concerns decentralized enforcement. EU financial governance is characterized by multilevel administrative execution [2]. The findings demonstrate that under density conditions, national administrative mediation becomes the pivotal determinant of enforcement depth. Legislative harmonization and executive technical expansion are uniform; institutional absorption is not.

This observation intersects with debates on supervisory convergence within the Banking Union and the broader European System of Financial Supervision. Harmonized reporting templates and technical standards are often assumed to promote convergence. The RDGM findings suggest a more nuanced reality. Convergence of format does not guarantee convergence of qualitative supervisory scrutiny. Differentiation arises not from normative divergence but from heterogeneity in administrative capacity, coordination structures, and interpretative integration.

The comparative analysis of Bulgaria and Poland underscores that integrated supervisory architectures facilitate systemic embedding of regulatory density, whereas segmented structures tend to prioritize formal conformity. This divergence remains legally permissible within a decentralized enforcement order, yet it introduces structural variability into the intensity of supervisory practice.

The implication is not that decentralization is defective, but that regulatory density amplifies the significance of institutional mediation. Where executive technical expansion increases the complexity of compliance, administrative capacity becomes a condition of effective absorption. Supervisory convergence, therefore, depends not solely on harmonized norms but on convergence of institutional integration.

4. Density, Proportionality, and Multilevel Constitutional Governance

The cumulative character of regulatory density also invites reconsideration of proportionality in multilevel governance. Each sustainability-related instrument may be proportionate in isolation. However, their combined interaction produces layered documentation obligations that reshape supervisory relationships. Proportionality analysis must therefore be attentive to cumulative effects rather than discrete measures.

Moreover, legal certainty under density conditions becomes dynamic. Iterative delegated amendments adjust operative compliance criteria over time. While flexibility enhances adaptability, it may complicate foreseeability for regulated entities. The balance between responsiveness and stability thus becomes a structural concern of executive technical governance.

Importantly, the RDGM findings do not suggest constitutional instability. Executive expansion operates within Treaty-based delegation and remains subject to judicial control. Rather, the analysis reveals a transformation in how constitutional principles are operationalized within dense administrative environments. Judicial review functions as a boundary condition rather than as an active recalibrator of technical thresholds. Institutional balance persists, but the center of gravity shifts toward executive operationalization and national mediation.

5. Sustainability-Related Financial Regulation as a Paradigmatic Case

The broader theoretical contribution of this study lies in reframing sustainability-related financial regulation as a paradigmatic example of density-driven administrative governance. The central dynamic is not ecological ambition, but procedural intensification. Sustainability-related regulation demonstrates how executive technical expansion and decentralized enforcement interact within a multilevel constitutional structure to produce differentiated embedding without legislative fragmentation.

The RDGM thus contributes to EU administrative law theory by integrating three dimensions often examined in isolation: delegated executive rule-making, decentralized supervisory execution, and cumulative regulatory layering. The model clarifies that enforcement differentiation is structurally mediated rather than normatively predetermined. This insight extends beyond sustainability-related regulation and is applicable to other domains characterized by dense technical governance, including prudential supervision, digital financial services, and anti-money laundering regulation. Sustainability-related financial regulation therefore exemplifies a broader transformation in EU administrative governance toward density-driven configurations in which executive operationalization and institutional mediation jointly determine the depth and intensity of enforcement.

CONCLUSION

This article has examined sustainability-related financial regulation not as a sectoral policy initiative, but as a structural development within EU administrative governance. By conceptualizing the interaction between normative layering, delegated executive rule-making under Article 290 TFEU, constitutional filtering, and decentralized supervisory execution through the Regulatory Density Governance Model (RDGM), the study has demonstrated that the defining characteristic of the current regulatory framework lies in the configuration of administrative density rather than in the substantive orientation of its objectives.

The analysis shows that regulatory density operates as a mode of governance in which executive technical standard-setting acquires operational centrality within constitutionally bounded delegation, while national supervisory architectures mediate the depth and intensity of enforcement. The resulting differentiation does not reflect legislative fragmentation or normative inconsistency. Instead, it reveals how harmonized EU legal frameworks are structurally absorbed through heterogeneous administrative systems within a multilevel constitutional order.

This insight contributes to EU administrative law scholarship in three respects. First, it clarifies that delegated executive rule-making under Article 290 TFEU increasingly functions as an instrument of operational norm production, shaping the measurable intensity of compliance without displacing legislative primacy. Second, it demonstrates that supervisory convergence

cannot be assessed solely by reference to harmonized reporting templates or technical standards; convergence is mediated through institutional integration and administrative coordination. Third, it reframes enforcement differentiation as a structural feature of density-driven governance rather than as evidence of regulatory failure.

More broadly, the findings illuminate an evolving equilibrium within EU constitutional governance. Legislative harmonization, executive technical expansion, judicial oversight, and decentralized enforcement no longer operate as discrete institutional spheres. Instead, they form an integrated administrative configuration in which density intensifies the interdependence of norm production and norm application. The sustainability-related financial framework thus exemplifies a wider transformation toward documentation-centered, technically mediated, and institutionally filtered governance within the Union.

Recognizing regulatory density as a constitutive feature of contemporary EU administrative law provides a conceptual lens for assessing future developments in financial supervision and beyond. As the Union continues to rely on delegated technical standards and layered reporting infrastructures, the central challenge will not lie in expanding normative scope, but in ensuring coherent mediation within decentralized administrative architectures. The durability of harmonization will depend not only on legislative design, but on the institutional capacity to absorb executive technical expansion within constitutionally bounded structures.

In this respect, sustainability-related financial regulation serves not merely as a policy field, but as an illustrative case of how multilevel governance evolves under conditions of cumulative administrative density. The RDGM framework offers a structured basis for understanding that evolution and for situating future regulatory transformations within the broader trajectory of EU administrative law.

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