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Regulation and its metrics: three views of the cathedral

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ABSTRACT

Measuring regulation is a vital but contested task. Despite growing interest, most metrics are either rooted in ad hoc assumptions or shaped by international organisations' priorities, rather than grounded in robust conceptual frameworks. We offer an original analysis of three analytical frameworks of public policy and regulation, and derive metrics from their foundational concepts. The Institutional Analysis and Development (IAD) framework, rooted in institutional analysis, public administration, and political economy, sees rulemaking as the design of action situations. Legalisation, grounded in international law and relations, assesses the hardness of multi-level regulatory architectures through measures of obligation, precision, and delegation. The density-intensity approach, anchored in public policy analysis, measures regulatory content – namely, expansion or dismantling – as the result of policy decisions. We illustrate the distinct logics and metrics through a comparative application to EU regulation of credit rating agencies. Each framework sheds light on different aspects of regulatory change and offers unique advantages. Rather than advocating for a single framework, we argue for theory-grounded approaches and analytic pluralism. We conclude with guidance on when and how each framework can be usefully applied, supporting clarity in the use and design of metrics.

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Introduction

Social scientists have long relied on metaphors to make sense of complex reality. One of the most evocative is the image of the cathedral, introduced by Calabresi and Melamed (1972) in their influential article *Property Rules,*

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Liability Rules, and Inalienability: One View of the Cathedral. The metaphor has endured not only because of its elegant abstraction, but because it evokes something layered, interpretive, and open to multiple readings – much like the law itself. Just as Claude Monet painted the Rouen Cathedral dozens of times, capturing its shifting contours under different lights and seasons, so too can the law be seen anew depending on the analytical lens. Law, like Monet's cathedral, is not a static edifice, but something whose meaning refracts through time and perspective. Others have followed in this tradition of using imagery and metaphor to deepen our understanding of regulation. Mick Moran, in *The British Regulatory State* (2003), drew on the power of metaphors to illustrate competing images of the 'regulatory state'. Tony Prosser has written about the multiple dimensions of *The Regulatory Enterprise* (2010), suggesting that regulation cannot be reduced to a single logic but must be approached as a multifaceted institutional project. Claudio Radaelli (2014), in turn, has linked the metaphor of the cathedral to Giandomenico Majone's foundational work on the normative and empirical underpinnings of regulatory governance in the European Union (EU). In each case, metaphor functions not as ornamentation but as a mode of understanding, providing structure, resonance, and interpretive depth.

The metaphor of the cathedral remains analytically useful today. Although in the early 2010s regulation appeared to some as a type of policy intervention in crisis (Lodge & Wegrich, 2012), with the twin transition to a sustainable and digital society, most political systems are investing massively in this policy. At the same time, the echo of old, perhaps 'classic' critical questions on the nature and scope of regulation is still prominent in the political debates on administrative obligations (Helm, 2006), legal complexity (Schuck, 1992), bureaucratic growth (Schulz, 1998) and the proper place of regulatory agencies themselves (Rangoni & Thatcher, 2023). Indeed, rhetorics about overregulation are more salient than ever, as demonstrated by contemporary controversies surrounding Trump and Musk. Questions about the reasons for the growth of regulation, including the proposition that 'rules breed rules', are very much on social scientists' research agenda (Hinterleitner *et al.*, 2024; Kaufmann & van Witteloostuijn, 2018). Unsurprisingly, then, these debates are accompanied by a strong social scientific interest in regulatory metrics, understood here broadly, as encompassing both quantitative measurements (e.g., '1.7') and qualitative assessments (e.g., 'more') of regulation – an indispensable step to then manage the quantity and quality of rules.[1]

The very concept of regulation, however, is something complex, a true 'cathedral' – one whose contours change depending on the analytical light we shed on it. Indeed, the way different frameworks identify metrics reveals a particular conceptual understanding of regulation. Thus, instead of providing our own definition of what is regulation, we interrogate three major frameworks. These frameworks are anchored in their own original

understandings of public policy and policy processes. Accordingly, we first interrogate each framework's conceptualisation of public policy. This leads to our second question: how do they conceptualise regulation? Finally, we move to the exploration of possible ways to measure regulation within each framework.

There are indeed several ways to measure regulation. Given our aim, we consciously cast the net wide to include a diverse range of perspectives. To ensure coherence, we confine ourselves to regulation as formal rules, legislation, guidelines published by agencies, and international treaties – the 'stuff' that makes up the cathedral – created by governments, agencies, and international organisations (IOs). Within these broad boundaries, however, we do not view it as a problem if different approaches conceptualise regulation as a different entity or operate at not quite the same level. On the contrary, we see this diversity as an asset – a resource from which we can learn.

In the next two sections, we distinguish between more basic and more conceptually robust approaches to regulation and its metrics. We begin with intuitive or ad hoc approaches, which we critically examine to highlight their limitations. We then turn to three major frameworks that offer more conceptually grounded approaches: the Institutional Grammar (IG) and rule types developed within the Institutional Analysis and Development (IAD) framework (Ostrom, 2005); the concept of legalisation (Abbott *et al.*, 2000); and the policy density–intensity approach (Knill *et al.*, 2012). What sets these more sophisticated frameworks apart is first and foremost that they begin with clear propositions about what policy and regulation are – treating the 'cathedral' of regulation as something to be defined conceptually first, and only then measured accordingly. These frameworks also share additional important features: they are independent from the normative goals of IOs, they rely on objective criteria rather than stakeholder opinions or other subjective measures, and they enable comparative and cumulative research. For these reasons, we find such conceptually grounded metrics to be the most convincing and useful for researchers.

Why these three? While many metrics exist, we focus on the IAD framework, the concept of legalisation, and the density–intensity approach because each is influential, speaks to a distinct scholarly community beyond the narrower regulatory field, and highlights a different foundational building block of regulation. *Understanding Institutional Diversity* by Elinor Ostrom (2005), which lays the foundation for the IAD-IG framework, has been cited over 12,000 times, reflecting its impact on institutional analysis, public administration, and the political economy of rules. The legalisation framework, developed by Abbott *et al.* (2000), is a cornerstone in international relations (IR) and international law, with over 2,400 citations. The density–intensity approach, articulated by Knill *et al.* (2012), is gaining

traction in public policy and has already received over 260 citations, despite being a more recent contribution. Beyond their influence and reach, these frameworks offer distinct conceptual lenses. The IAD-IG captures the institutional design of regulation; legalisation maps its international architecture; and density–intensity focuses on policy content, including whether regulation is being expanded or dismantled. Design, architecture, and content are three foundational ways to shed light on the cathedral of regulation. As noted earlier, we value conceptual and methodological diversity – not for its own sake, but as a means to better understand the multi-dimensional nature of regulation.

In the empirical section, we offer a simple illustration of how each of the three frameworks works 'in action' by applying them to the same regulatory case: the EU's regulation of Credit Rating Agencies (CRAs). Our aim is to show how each framework highlights different aspects of the same regulatory phenomenon. While the 2009 CRA Regulation cannot represent the full wave of post-crisis reforms – of which there were dozens – CRA regulation offers a particularly important, well-known, and clear example of regulatory change. It serves as an 'extreme case' (Flyvbjerg, 2011; Seawright & Gerring, 2008), illustrating a dramatic shift from non-binding codes of conduct (the 2004 IOSCO Code) to binding EU legislation with compulsory licensing and sanctions (the 2009 CRA Regulation). It thus helps to foreground the distinctive properties and analytical advantages of each framework in especially stark terms.

Building on the conceptual discussion and the empirical illustration, we conclude with suggestions about how and when to use each of the three frameworks and their associated metrics. In doing so, we contribute to the growing literature on policy growth – particularly the expansion of rules (Hinterleitner *et al.*, 2024) – and to work on regulatory indicators (Radaelli & De Francesco, 2007), by offering an explicit comparison and structured assessment of three influential frameworks. We do not aim to create a unified framework or an 'encompassing analytical blueprint' (Damonte & Bazzan, 2024), nor do we explore their potential complementarities – these are important directions for future research. Rather, our contribution lies in clarifying the distinctive logics and uses of each framework, helping scholars navigate the growing and diverse field of regulatory metrics.

Basic approaches

Let us start with approaches that do not problematise the nature of public policy and regulation as a type of policy. These approaches assume that the conceptualisation of regulation is straightforward, and that one can immediately jump into measuring. They were developed in the initial stages of development of the literature, often with the support or interest

of IOs. Regulation can be measured via the number of pages of primary and secondary laws, of regulatory agencies, or of state monopolies (the opposite indicator can be the number of privatizations). Indeed, the number of pages in the US Federal Register has been used as a crude measure of the extent of regulation (Viscusi *et al.*, 1995). Dawson and Seater (2004) based their statistical analysis on the number of pages of the Code of Federal Regulations. Gatti (1981) considered the number of US regulatory agencies to measure the proliferation of regulation. The SIFT Project created in 2019 in the context of Brexit took at its point of departure the volume of statutory instruments relative to acts of parliament, as evidenced by individual pieces of legislation as well as page numbers (Sinclair & Tomlinson, 2020).

Even one page or one single number in a sentence can impose a fundamentally strict prohibition, however. Thus, less simplistic approaches such as the RegData project have been assessing regulatory restrictions by counting modal verbs creating obligations such as 'shall' and 'must' (Al-Ubaydli & McLaughlin, 2017).[2] For its part, the Regulatory Studies Centre at George Washington University has also gone beyond counting pages, for instance by calculating the number of 'economically significant' final rules (as defined in the US) as well as the budgets of regulators.[3]

Individual variables can be aggregated to create composite measures of regulation (De Francesco & Radaelli, 2007). Pryor (2002), for example, combined three types of regulation that make intuitive sense, that is, legal framework regulations (such as property rights), industry-specific regulations, and general-economic regulations governing behaviour across sectors. One source of his measures is the classic survey of business executives – with the limitation that the measures are then geared towards the preferences of one important, but not exclusive, stakeholder.

With their 'good governance matters' approach, Kaufmann and associates developed a famous system of indicators to carry out cross-country comparisons. Their notion of regulatory quality includes the incidence of market-unfriendly policies such as price controls or inadequate banking supervision, as well as perceptions of the burdens imposed by excessive regulation in areas such as foreign trade and business development (Kaufmann *et al.*, 2003, p. 3). Regulatory quality variables are aggregated into an overall index (a composite measure). Yet again, the sources of these indicators are subjective.

Knack and Kugler (2002) turned to objective measures in the context of their wider perspective on governance. They considered the regulation of entry (number of procedures to start a new business); contract enforcement (number of formal independent procedures to collect a debt); contract intensive money (proportion of the money supply that is not held in the form of currency); international trade revenue; capability to collect revenue (as an indicator of administrative strength); budgetary volatility and revenue

source volatility; telephone faults and telephone wait times (indicating administrative capability to regulate private telecom industry); and percentage of firm revenues paid as bribes. Although these variables are correlated, only the first two can be associated with the tools of regulatory policy.

Finally, we find regulatory indicators constructed directly by IOs. The World Bank mainly relies on country officers, country experts and academics to produce the global rulemaking indicators (Global Indicators of Regulatory Governance).[4] The OECD iReg dataset[5] is generated by member states' delegates in the Regulatory Policy Committee (RPC) and the OECD RPC secretariat (the process that led to the creation of iReg is described in Radaelli, 2020).

Both the OECD and the World Bank produce regulatory indicators for their own purposes of international benchmarking and to advise governments engaged with reforms – not to engage with, test, or develop theories of regulation. IOs cannot be criticised for this; they follow their mandate. These measures produce real change, because governments react to international benchmarking with regulatory reforms. An example is the 'Doing Business' indicators. Since 2006, when Doing Business metrics appeared, there have been 3057 sets of reforms somehow inspired or triggered by the concept of Ease of Doing Business implied by these indicators (Doshi *et al.*, 2019, p. 622).

In some cases, the importance of international regulatory indicators has led, pathologically, to scandals. An example is the public controversy around Doing Business indicators. This power of ranking (Doshi *et al.*, 2019) has its dark face, as evidenced by the so-called Georgieva scandal that led to discontinue the production of these indicators in 2021(see the account provided by Romer, who was the economist in charge of the 2017 Doing Business indicators).[6]

Thus, no matter whether their 'impact' is positive or negative, these metrics definitely matter in real-world policy. They are also revealing of what regulation 'is' and 'ought to be' according to business experts and IOs. They are also versatile and as such can be used in different ways in causal models (e.g., Ash *et al.*, 2024).

What we are suggesting, however, is that they are not inspired by a conceptual enquiry into the nature of regulation, conducted according to the classic canons of the social sciences - namely, theory construction, a causal framework, a set of hypotheses, operationalisation, and so on. Another problem is that some of these measures are biased towards one particular dimension of regulation, i.e., how rules may hinder market operations. The subjective measures based on business experts do not reflect the views of other stakeholders.

For all these reasons, we turn to three frameworks that are explicitly conceptually embedded, are objective and independent from IOs' normative

agendas, and allow for cumulative comparative research. We present and discuss each of the three frameworks in the order in which they appeared in the scholarship.

Three conceptual frameworks

In this section, we provide an overview of the three frameworks identified earlier on, and at the core of the article. Table 1 offers a guide to our overview.

The institutional analysis and development framework

The first view of the cathedral is the IAD-IG framework. At the core of the framework lies the belief that a policy process is an 'action situation', defined as 'Whenever two or more individuals are faced with a set of potential actions that jointly produce outcomes' (Ostrom, 2005, p. 32). Regulation, as shown in Table 1, is therefore just another 'action situation', concerned with specific ways to create, order, and deliver rules affecting individuals and communities.

Although wide variation exists, each action situation consists of seven common components. The starting point are two or more 'participants' (which need not be individuals but can be companies or nations, for example). Participants might affect certain 'potential outcomes' (e.g., the result of a parliamentary vote). But these are linked to sets of 'actions' participants must choose from (e.g., whether and how to vote), in the light of the 'positions' they are assigned to (e.g., members of the parliament), their degree of 'control' over the linkage of the action to outcomes, the more or less complete 'information' they have, and the 'costs and benefits' assigned

Table 1. Regulation and its metrics – three frameworks.

	Institutional Analysis and Development	Legalisation	Policy Density and Intensity
Focus on	Institutional design	International architecture	Policy content
Key Question	What is the structure of the action situation?	What is the constellation of soft and hard rules?	Has policy expanded or contracted?
What is Regulation?	A type of action situation identified by institutional statements	A multi-level governance architecture identified by soft and hard law	A type of public policy decision about the content of regulations
Rooted in	Institutional analysis, public administration, political economy	International law, international relations	Public policy analysis
Conceptual tools	Rule types, Institutional Grammar	Obligation, Precision, Delegation	Policy Density, Policy Intensity
Unit of Analysis	Rulemaking as an action situation, Institutional statements	International regime, system of treaties	Public policy decisions

Source: Own elaboration.

to actions and outcomes, which might serve as incentives and deterrents (Ostrom, 2005, pp. 32–68).

To each of these seven components correspond one of seven types of rules (Ostrom & Crawford, 2005). Here we are talking of rules in the sense of the IAD framework – rules of different types that, together, define 'what goes on' in an action situation. We are not (yet) in the territory of measuring regulation, understood as a type of policy. Having clarified that, let us look at what the rule types 'do' in the IAD.

Each 'rule type' has a primary effect. Elinor Ostrom and Sue Crawford (2005) define 'position rules' as rules that create the positions to be filled in by participants (e.g., member of a legislature, voter). 'Boundary rules' – a second type – define how participants are assigned to, enter, and leave positions (e.g., eligibility criteria). 'Aggregation rules' influence the degree of control individual participants have (e.g., unanimity or simple majority voting, which empower participants differently). 'Information rules' affect the information available (e.g., obligations to send or receive information and frequency of information flows). 'Payoff rules' assign rewards or sanctions to particular actions. 'Choice rules' define what participants occupying a given position must, must not, or may do – thus focusing on actions. 'Scope rules', finally, focus on outcomes. Rule types then offer 'a useful classification for rules […] to facilitate building a cumulative body of theoretically and empirically tested research about human behaviour and outcomes in diversely structured situations' (Ostrom & Crawford, 2005, p. 186).

Any action situation can be broken down into key components, each primarily affected by a distinct rule type, so each rule can be dissected into distinct grammatical components. In addition to rule types, Crawford and Ostrom (1995, 2005) offer a 'grammar of institutions' – a tool to analyse 'institutional statements', which 'describe shared linguistic constraints and opportunities that prescribe, permit or advise actions or outcomes for participants in an action situation' (2005, pp. 137–138). The general syntax of the IG comprises five components, often referred to as ADICO: 'Attributes', defining to which participants the institutional statement applies (e.g., female, employee); 'Deontic', the modal verb that permits ('may'), obliges ('must') or forbids ('must not') certain actions or outcomes; 'aIm', specifying the actions or outcomes to which the deontic applies; 'Conditions', defining when and where an action or outcome is permitted, obligatory or forbidden; 'Or else', indicating the institutionally assigned consequences for not following a rule (e.g., sanctions). Its creators see the IG as a complementary tool for summarising and analysing institutional statements, notably distinguishing 'proper rules' from mere 'norms' or 'strategies', depending on whether a statement has all five or only four or three syntactic components (Crawford & Ostrom, 2005, p. 139).

Thus far, most IAD-inspired works have focused on common-pool resources and polycentric governance – on regulation, see Espinosa (2015) and Dunlop *et al.* (2020, 2022). The most important refinement is arguably the one championed by Frantz and Siddiki (2022), including a template of how to study regulation specifically (2024). They have proposed several improvements and additional sophistications of the IG tool, such as distinguishing regulative and constitute statements and decomposing the Condition component into subcategories. Overall, the 'IG 2.0' seeks to facilitate the computational analysis of text, in turn aiding comparative large-N studies on regulatory design.

Thus, how does this framework lead us to measure regulation? First, it offers a common analytical template that is neither sensitive to the domain or country where we observe regulation, nor to the specific question we ask. Whether we are looking at regulations defining the minimum salary, emission standards, or the pre-requisites to obtain citizenship, analytically, we see them all as empirical manifestations of a (theorised) action situation. Thus, for this framework, regulation is essentially the design of an action situation – that is the IAD-IG answer to the question 'what is regulation?'.

One can identify, measure and compare the regulation of, say, stakeholders' participation in law-making across countries in granular ways. For example, one can compute position rules to highlight that stakeholders include only industry representatives in one country, but also experts, trade unions, and local authorities in another. Alternatively, one can look at the total number of rules defining this action situation (that is, stakeholders' participation) in different countries to measure formalisation (where few rules of all types means that informality prevails).

Besides travelling across different contexts, the IAD can be applied to very different questions. To illustrate: one can examine if certain combinations of transparency rules about stakeholders' engagement observed in a population of countries are sufficient conditions for perception of corruption (Dunlop *et al.*, 2020), or conclude that an action situation without pay-off rules and hence incentives and sanctions might indicate weak design. Such extraordinary versatility may come at a price, though: data collection and coding may produce less straightforward answers than frameworks more firmly centred on predetermined questions.

Second, every action situation is understood as consisting of seven components which, *configurationally*, define it. Complex rulemaking instruments can thus be examined together (because they all create action situations with the same structural features) to explore causality.

Finally, the framework contains both a grammatical (ADICO) and a semantic (rule types) approach. At the core, this view is anchored to language: the cathedral of regulation is in the end made up of statements, words, discourse, text.

The framework of legalisation

The second framework was developed by a group of prominent IR scholars working on international law, culminating in an influential special issue published at the turn of the millennium (cf. Goldstein *et al.*, 2000). Here, the starting point is not public policy in general, but international law. We are therefore close to the domain of rules and regulations, albeit in an international environment – and, by extension, any multi-level governance environment.

The motivation behind such joint endeavour stemmed from two observations. On the one hand, variations notwithstanding, international institutions are generally less legalised than those of (developed) national legal systems. Combined with the then conventional IR view that law requires coercive enforcement, this often led (and still leads, today) to disregard international law. On the other hand, however, IR work had begun observing institutionalised ways of promoting cooperation other than centralised enforcement, as forms of legalisation were starting to flourish in the absence of centralised coercion (Abbott *et al.*, 2000, pp. 402–403).

Abbott *et al.* (2000, p. 401) thus offered a conceptualisation of legalisation, understood as a 'particular form of institutionalisation characterised by three components: obligation, precision, and delegation'. 'Obligation' concerns the extent to which states or other actors are legally bound by a set of rules. 'Precision' refers to how far rules require, authorise or proscribe conduct unambiguously. And 'delegation' concerns the degree to which third parties are granted authority to implement, interpret and apply the rules; resolve disputes; and possibly make additional rules. Taken together, the three dimensions tell us that regulation is about the organisation of international arrangements in an architecture, which can be more or less 'legalised', i.e., 'harder' or 'softer'.

Indeed, each of these dimensions should be understood as a matter of degree: each dimension encompasses a continuum at whose extremes lie opposite 'ideal types'. Specifically, obligation can range from expressly non-legal norms to binding rules, precision from vague principles to highly elaborated rules, and delegation from mere diplomacy to international courts and organisations. Further, each dimension can vary independently, making various combinations of obligation, precision, and delegation possible (Abbott *et al.*, 2000, pp. 401–404). The conceptualisation is thus intended to help capturing variation across international arrangements (Abbott *et al.*, 2000, pp. 404–408).

Although Abbott *et al.* (2000, p. 402) recognise that none of the dimensions can be fully operationalised, they do put forward 'indicators' to assess degrees of legalisation along its three key dimensions. Thus,

obligation ranges from agreements that are legally binding on an unconditional basis (e.g., the Vienna Convention on Diplomatic Relations, whose article 24 states that 'The archives and documents of the mission shall be inviolable at any time and wherever they may be') to those that explicitly negate any intent to be legally binding (e.g., the 1992 'Non-Legally Binding Authoritative Statement of Principles for a Global Consensus' on sustainable management of forests). Between these two extremes, we find treaties that are binding but implicitly understood to be so only under certain conditions; explicit national reservations on specific obligations, contingent obligations and 'escape clauses'; hortatory obligations merely requiring parties to 'endeavour' (e.g., to adopt certain policies); and recommendations and guidelines – such as those of the OECD – which are not intended to create formally binding obligations (Abbott *et al.*, 2000, pp. 408–412).

As for precision, precise rules narrow down the space for (self-interested) interpretation, whereas – *ceteris paribus* – general principles (or 'standards') widen it. While acknowledging that 'operationalizing the relative precision of different formulations is difficult', Abbott *et al.* (2000, pp. 412–415) suggest that rules can: be 'determinate', when they allow only narrow issues of interpretation; permit limited but substantial issues of interpretation; leave broad areas of discretion; be 'standards' that are meaningful only by virtue of determinations made *ex post* in the light of the facts at hand; or be so vague that it is virtually impossible to assess compliance with them.

Abbott *et al.* (2000, pp. 415–418), finally, break down the third dimension – delegation of legal authority – into two sub-dimensions. The first concerns third-party dispute resolution, which ranges from 'actual adjudication', whereby courts have general jurisdiction and take decisions that are binding; through binding or non-binding arbitration and 'institutionalized bargaining' such as mediation and conciliation; to 'pure political bargaining' in the absence of delegation. But delegation of legal authority does not end with dispute resolution. This is because, when authorised third parties settle disputes by interpreting and applying rules to particular facts, they also make new rules. Delegation of 'rule making and implementation' ranges from 'fully fledged' international bureaucracies with authority to issue binding regulations (without or with opt outs), through institutions that can issue binding international policies or coordination standards or can monitor implementation and possibly disclose it publicly, to less legalised arrangements that can only issue normative statements or merely serve as fora for negotiations.

Criticised from the start for being overly narrow, static, and 'rationalist' and thus not paying enough attention to the wider social processes through

which law is (re)constructed (Brunnée & Toope, 2010; Finnemore & Toope, 2001), the concept of legalisation has nevertheless been used widely. In a more systematic or selective fashion, scholars have employed it to assess a variety of legal arrangements not only at the international level (Bélanger & Fontaine-Skronski, 2012) – the framework's original realm – but also elsewhere, such as in EU governance (e.g., Armstrong & Kilpatrick, 2007; Hodson, 2018; Radulova, 2007; Schelkle, 2007). Yet, at times, empirical studies have produced discordant interpretations of the very same arrangements, for example classifying the General Agreement on Tariffs and Trade, the International Atomic Energy Agency or the International Court of Justice as more or less legalised, depending on which dimension was weighted most or how it was operationalised. In turn, this has prompted amendment proposals, centred around a reformulated concept structure highlighting the obligation dimension as a necessary condition (Bélanger & Fontaine-Skronski, 2012).

Abbott and Snidal (2013) point us towards three implications for the study of regulation. First, by treating legalisation as an independent variable, we can observe the effects on behaviour – say, compliance – generated by softer or harder architectures. We could also extend attention to the sub-national level and/or to non-state, transnational rulemaking.

Considering legalisation as the dependent variable, second, we can study different actors' preferences and strategies to pursue different levels and forms of legalisation. By recognising that softer and harder norms are not exercising agency themselves, and by re-orienting the analysis in terms of agents, researchers can examine distinct types of actors (e.g., national officials, NGOs representatives, IOs officials) and what different forms of legalisation do for them, and thus why they promote one or resist another (e.g., Shaffer & Pollack, 2010). In this way of reasoning, we can explore not only functionalist but also distributive explanations of why a given regulatory architecture is governed by a particular combination of hard and soft law. An apparently dysfunctional softening of a hard law (produced, say, by legislators) due to its juxtaposition with non-binding guidelines (issued, say, by an agency) may not be accidental but rather the result of strategic action.

Finally, by understanding legalisation as evolution over time (rather than as static approximation of hard law), the framework becomes more dynamic – thus addressing one of its key critiques. Researchers can investigate conditions, pathways, and sequences for the 'hardening' of initially soft law (Abbott & Snidal, 2004), exposing the political battles through which law (and regulation) is transformed. In turn, these political battles are shaped and constrained by existing legal and regulatory frameworks.

Policy density and intensity

The third and most recent framework has been collaboratively developed in the early 2010s, firmly anchored to the field of public policy. The framework is applicable to types of policies beyond regulation, including taxes and subsidies. Since its unit of analysis is public policy decisions (see Table 1), regulation is just one type of public policy decision.

We understand its emergence as a two-fold response. First, it is a reaction to the dominant use of policy outcomes as a proxy for policy outputs. Departing from the widespread assessment of changes in policy decisions and therefore regulatory decisions too by looking at their sectoral impact (e.g., levels of pollution), the framework emphasises that outputs and outcomes might differ, and hence underlines the need for a measurement approach that better separates the two.

The other key motivation is about policy change, especially policy dismantling, which has been topical in regulatory policy debates (Bauer & Knill, 2012, 2014; Knill *et al.*, 2010, 2012). Although today organisations like the EU are investing in regulation across several domains, from climate to artificial intelligence, the debate on the need to limit regulation and simplify rules is still very much alive, as shown by the Omnibus initiatives of the European Commission.[7] Anyhow, the same steps towards measuring dismantling apply to expansion – this approach does not censor one trajectory of regulation.

Conceptually, this framework is concerned with the content of regulatory policy decisions, notably its trajectory over time and variation across countries. For Knill *et al.* (2012, pp. 428–429), the expansion or dismantling of policy regimes can be assessed by looking at the regulations (which can be introduced or removed) in a given policy field, the number of instruments to implement such regulations (which can increase or decrease), and the levels as well as the scope at which such instruments are calibrated (since regulatory standards can be tightened or loosened, and target groups widened or narrowed).

In terms of operationalisation, Knill *et al.* (2012, pp. 429–431) distinguish two key dimensions: 'density' and 'intensity'. Density concerns the number of decisions and instruments in a policy domain over time. Thus, we are before policy expansion if the number of regulatory targets (e.g., sulphur dioxide, carbon dioxide) and/or the number of instruments used to regulate them (e.g., command and control instruments, economic incentives) increase. Density is complemented by intensity, which relates to the stringency of the instruments as well as their scope of application. Here, expansion is indicated by increases in intensity level (e.g., a reduction of the amount of permissible emissions) and/or in intensity scope (e.g., a lowered threshold defining the size of the plants covered by a certain emission standard, which makes more companies subject to the standard).

There are several applications of this way of reasoning. To illustrate, Fernández-i-Marín *et al.* (2021) have developed an average instrument diversity index and found it to be associated with environmental policy effectiveness, while Hurka and Knill (2020) have elaborated a gun control index and found that stricter gun control is associated with lower homicide and suicide rates.

For our purposes, the most relevant revision is arguably the one proposed by Bauer and Knill (2012, pp. 34–36, 2014, pp. 33–34) themselves, right after the very initial creation of the framework (cf. with Knill *et al.*, 2010, 2012). They refined policy intensity, which is now distinguished between substantial and formal aspects. Thus, to the scope and level of intensity – now grouped under the 'substantial intensity' heading, Bauer and Knill add 'formal intensity'. This refers to the administrative capacities to implement a given regulation, since policy dismantling might happen not just by changing elements of a policy as written, but also by affecting the capacity of implementing and supervising it in practice. Formal intensity thus extends attention to enforcement and administrative capacities (e.g., the presence of a regulatory agency with the necessary financial, personnel and organisational resources) as well as procedural capacities (e.g., the procedures required for proper policy implementation such as those ensuring that all actors affected by a given regulation are included in rulemaking). The assessment of this sub-dimension might not always be unambiguous. Yet, its addition might at least in part mitigate the gap that often exists between (change in) stringency in formal terms and in practice.

In sum, how and why can this growingly influential framework be useful to assess rules? First, since it addresses the common assumption that positive and negative directions of policy change are merely the mirror of one another, it detects changes in public policy in a fine-grained manner. Indeed, in this view of the cathedral one can observe subtle reductions, diminutions or decreases that are more frequent – but less overt – than outright policy termination, and which, furthermore, are often disguised under non-decisions (e.g., social benefits not adjusted in line with inflation).

Second, in principle at least, the framework can travel to a variety of policies (and polities) well beyond the welfare state domain, whose retrenchment literature (cf. Pierson, 1996) contributed to inspire the development of the framework in the first place (Knill *et al.*, 2020, p. 244). How easily the framework can really be applied elsewhere remains a question left for the next generation of empirical studies, though, since as discussed, empirical applications have thus far mainly concentrated on the environmental and social domains.

Finally, this framework problematises the relationship between regulatory policy outputs and outcomes (Hurka *et al.*, 2024). It can then be adopted to establish the presence of causal effects (if any) of regulatory policy outputs on regulatory policy outcomes.

The frameworks in action: an illustration from EU financial regulation

Testing the three views of the cathedral across a wide variety of cases is impossible – and unnecessary – for this article. Instead, we offer a simple illustration, an exemplar of how the frameworks work in practice, by focusing attention on a single, well-delimited empirical case. The objective is to further familiarise ourselves with the three lenses, and help revealing their distinctiveness and comparative advantages.

We concentrate on finance – a crucial domain that has cross-sectoral effects on nearly all realms of the 'real economy' and thus lies at the centre of modern capitalist societies. Since this domain is exceptionally vast, within finance, we look at credit ratings, which play a major role in aiding investors and lenders understand the risks associated with particular investments. We study CRA regulation in the EU, relying directly on primary sources of evidence, the secondary ones being one step removed from them and one of us being a sectoral expert (cf. e.g., Rangoni, 2023, ch. 5; Zeitlin & Rangoni, 2023).

While the post-crisis regulatory reforms cannot be reduced to a single rule, CRA regulation stands out as a key, relatively well-known, and accessible example of regulatory change before and after the crisis. Another major example concerns prudential capital requirements for banks. However, we have chosen to focus on CRA regulation because it represents a more 'extreme case', marked by a clear shift from non-binding codes of conduct (self-regulation) to binding rules involving sanctions and compulsory licensing. As Flyvbjerg (2011, pp. 306–7) notes, extreme cases are particularly effective for illustrating key points in a dramatic way, as seen in well-known cases such as Foucault's 'Panopticon' (see also Seawright & Gerring 2008).

As the global financial crisis erupted in 2007 made it painfully clear, in the run-up to the crisis, CRAs failed to adequately assess the risks involved in complex financial instruments, notably sub-prime mortgages which, with hindsight, were far from risk-free. In several jurisdictions, the regulatory response was to set up a new registration and surveillance regulatory framework, which replaced the previous 'self-regulatory' approach, based on a Code of Conduct developed in 2004 by the International Organization of Securities Commissions (IOSCO) and adopted on a voluntary basis by CRAs. In the EU, rules were adopted in 2009, with the 'CRA Regulation' requiring CRAs to be registered and supervised – initially by national competent authorities, which were brought together by a European network of regulators (Committee of European Securities Regulators, CESR). In 2011, these rules were revised in the light of the transformation of CESR into an EU regulatory agency, centralising direct supervisory powers in the hands of the European

Securities and Markets Authorities (ESMA). In 2013, after the eurozone crisis, a further set of revisions strengthened the rules especially concerning sovereign debt credit ratings. Overall, this framework replaced the self-regulatory regime in vogue before the crisis, notably seeking to increase transparency and mitigate conflicts of interests as well as market concentration, given the dominance of the 'Big Three' (Moody's, Standard and Poor's, and Fitch).

But if it is obvious that regulation has changed rather dramatically, how, exactly, do the three frameworks analyse it? What are the key questions they ask, and what their most important insights about regulatory dynamics? Table 2 summarises our exercise. To aid clarity and for space reasons, in both the Table and the description below, we are self-consciously sparse with asides (e.g., what additional issues the frameworks could be used for, including causal analyses), ensuring that our focus and scope are squarely on frameworks' key distinctive features. Equally, we provide only the most essential references to the IOSCO (2004) Code and the CRA Regulation and subsequent amendments (European Parliament & Council, 2009, 2011, 2013).

Applying the IAD

Let us begin by wearing the hat of IAD scholars. We tackle the case by asking 'How has the structure of the action situation changed?'. The IAD framework offers two lenses – micro and meso. Starting with the former (the IG), we compare pre- and post-crisis CRA rules by examining variation in the grammatical components of institutional statements. We dissect the 2004 IOSCO Code and the 2009 CRA Regulation, systematically identifying which ADICO components (or ABDICO under IG 2.0) are present in each statement – often a sentence – and how they have varied.

What do we learn from applying the ADICO lens? Attributes – who the rule applies to – shifted from global, voluntary coverage to all CRAs operating in the EU, with mandatory registration. Deontic – the prescriptive force – was largely permissive (e.g., should, encouraged to) and rarely invoked terms like 'must'. Now, 'must' and 'shall' dominate, emphasising obligations and prohibitions. Aim – the action or outcome addressed – moved from abstract principles (e.g., transparency, independence) to detailed, enforceable actions like mandatory disclosures and conflict-of-interest management. Conditions – the rule's context – shifted from vague (e.g., 'when appropriate') to precise (e.g., 'annually').

Finally, and crucially, Or else components – consequences for non-compliance – were missing pre-crisis: enforcement relied on market discipline and reputational risk. The new regime introduced enforceable sanctions, including fines, deregistration, and liability, marking a shift from norms to 'rules' (Crawford & Ostrom, 2005, pp. 137–139).

Table 2. Three frameworks to regulatory metrics in action: an illustration concerning credit rating agencies in the European Union.

Framework	Dimensions	Subdimensions	Pre-crisis observation (IOSCO Code)	Post-crisis observation (EU CRA Regulation)*	Key change	Regulatory dynamics
Institutional Analysis & Development	Institutional grammar	Attributes	Applies broadly to all CRAs globally	Applies specifically to CRAs in the EU, with explicit roles	Roles formalised and scoped within EU jurisdiction	*Voluntary norms evolved into rules, through the introduction of institutionally assigned consequences for non-compliance*
		Deontic	Permissive (e.g., 'should')	Strict (e.g., 'shall')	Rules became prescriptive	
		alm	General goals (e.g., transparency)	Specific actions (e.g., annual disclosures)	Greater focus on actionable requirements	
		Conditions	Broad and vague (e.g., 'when appropriate')	Clearly defined (e.g., 'annually')	Conditions made precise and specific	
		Or else	Absent (no formal penalties)	Present (fines, revocation of licence)	Penalties institutionalised and enforceable	
	Rule types	Position	CRAs as market information providers; no binding authority for regulators	CRAs explicitly regulated; ESMA established as supervisory body	Centralised supervisory authority introduced	
		Boundary	No formal entry barriers	Strict entry criteria (e.g., mandatory registration)	Entry barriers formalised and monitored	
		Choice	General recommendations (e.g., avoid conflicts of interest)	Specific prohibitions (e.g., no advisory services)	Rules became specific and enforceable	
		Aggregation	Decentralized decision-making by CRAs	Centralised oversight by ESMA	ESMA took over decision-making authority	
		Information	Encouraged transparency in methodologies	Detailed mandatory disclosure requirements	Transparency requirements became binding	

(*Continued*)

Table 2. Continued.

Framework	Dimensions	Subdimensions	Pre-crisis observation (IOSCO Code)	Post-crisis observation (EU CRA Regulation)*	Key change	Regulatory dynamics
		Payoff	No penalties for non-compliance	Fines, sanctions, and registration revocation	Enforcement mechanisms introduced	
		Scope	Broad goal of fostering market integrity	Specific goals (e.g., reliable ratings) supported by benchmarks	Outcome-focused objectives introduced	
Legalisation	Obligation	–	Voluntary principles; no binding rules	Legally binding obligations enforceable by ESMA	Transition from non-binding to binding law	*Soft law transitioned to hard law, through increased obligation, precision and delegation*
	Precision	–	General and vague provisions	Detailed and specific rules governing conduct	Rules became more precise	
	Delegation	Rulemaking & enforcement	Limited to voluntary guidelines set by IOSCO; no implementation powers	ESMA empowered to propose binding technical standards and implement rules	Rulemaking & implementation centralised under ESMA	
		Dispute resolution	No formal mechanism; disputes resolved by individual CRAs or through market pressures	ESMA can impose fines and sanctions, subject to judicial review by the Court of Justice	Dispute resolution institutionalised & legally enforceable	
Policy Density & Intensity	Density	–	IOSCO Code as the primary instrument	Multiple regulations targeting expanded areas like sovereign ratings	Policy scope expanded	*Policy has expanded, reflecting higher density and intensity*
	Intensity	Substantive	Generic recommendations	Strict rules targeting expanded asset classes	Rules more ambitious and specific	
		Formal	Limited budget and staff of IOSCO	Enhanced administrative capacity through ESMA	Greater regulatory and enforcement capacity	

Source: Own elaboration; *and amendments.

Moving from micro to meso, we ask how the IAD's seven rule types have changed post-crisis. We use the IG to classify rules by their aIm, which indicates the action situation component they immediately affect (Ostrom, 2005, pp. 187–192).

Position rules – defining roles and functions – show a clear shift. Pre-crisis, CRAs were self-regulating market information providers. The IOSCO Code outlined roles broadly, promoting independence and integrity without enforcement. Regulators had only advisory roles. Post-crisis, roles became formalised: CRAs were defined as entities issuing credit ratings, including for regulatory purposes; ESMA was created as a central supervisory; and new roles (e.g., compliance officers) were introduced to oversee adherence.

Boundary rules – entry and exit conditions – were once lax: anyone could become a CRA without formal requirements. The Code encouraged voluntary principles but lacked binding criteria. Post-crisis, entry became conditional: ESMA registration is mandatory, with checks on finances, governance, and operations. Ongoing compliance is also required.

Choice rules – allowed or prohibited actions – previously encouraged avoidance of conflicts of interest but lacked enforceable bans. Methodologies were at CRAs' discretion, with general quality guidance. Now, detailed behavioural requirements apply: CRAs may not offer services like consulting to rated entities; methodologies must be disclosed and approved; analyst rotation and fee rules are mandatory.

Aggregation rules – who decides and how – shifted from decentralised discretion to centralised oversight. Pre-crisis, each CRA determined its own adherence to the IOSCO Code. With the CRA Regulation, ESMA – whose Board includes national regulators – gained authority to register, supervise, and sanction CRAs. Compliance is now subject to audits and formal oversight.

Information rules – what must be disclosed, to whom, and how – previously encouraged voluntarily transparency (e.g., on methodology, conflicts), with limited data access. Now, CRAs must publish detailed methodologies, performance data, and changes. ESMA has access to proprietary data and receives annual transparency reports.

Payoff rules – rewards or penalties – were virtually absent. Non-compliance faced no formal penalties; market discipline and reputational incentives were expected to suffice. Post-crisis, formal sanctions emerged: ESMA can impose fines, revoke registration, and CRAs face liability for misleading or inaccurate ratings.

Scope rules – acceptable outcomes – were vague and aspirational (e.g., integrity of ratings), with no performance benchmarks. Now, outcomes are more concrete: CRAs must demonstrate transparency and methodological rigour, and ESMA monitors aspects such as rating performance and consistency, including through required disclosures of historical accuracy data.

In sum, applying the IAD – especially the IG – shows that CRA regulation has evolved from voluntary norms into enforceable rules with sanctions for non-compliance. Yet, the rule-type analysis did not yield a single clear conclusion.

More broadly, the IAD framework, combining the IG and rule types, offers valuable micro- and meso-level data. But design alone cannot tell us how regulation will be enforced and whether implementation will be successful.

Legalisation in action

Let us now wear the shoes of legalisation. The key question here is: 'Have rules shifted from soft to hard law?'. We tackle this question by investigating change in three dimensions.

First, we examine obligation – that is, whether actors are legally bound by rules. We easily note that the IOSCO Code was voluntary, emphasising principles rather than binding rules. Under that regime, compliance depended on self-regulation and market discipline, with no legal consequences for non-adherence. The CRA Regulation, by contrast, has introduced binding legal obligations – CRAs are now required to register with ESMA and comply with specific provisions or face fines, registration revocation, and legal liability.

Then, we look at precision – the extent to which rules clearly define conduct. Before the crisis, provisions were general and aspirational, such as encouraging transparency and mitigating conflicts of interest. Vagueness left significant discretion to CRAs, making it difficult to enforce standards. In its aftermath, rules became highly detailed, specifying prohibited practices (e.g., providing advisory services to rated entities), required disclosures, and operational standards.

Finally, we focus attention on delegation – broadly understood as the degree to which authority is delegated to third-party institutions for implementation and enforcement. We highlight that there was hitherto no formal delegation to external bodies for enforcement. Oversight relied on the willingness of CRAs to adhere and respond to market pressure. The crisis response brought significant delegation to ESMA, as it became the centralised supervisory authority for monitoring, enforcement, and sanctioning, with a view to ensuring consistent application of rules across EU member states. ESMA likewise acquired important rulemaking powers, in that it proposes draft binding technical standards to the Commission (European Parliament & Council, 2011, arts. 21, 38a–38c). The other sub-dimension of delegation – which is indeed unique of this framework relative to the other two – illuminates the delegation of conflict resolution. This is exemplified by the possibility for the Court of Justice of the EU to review and annul,

increase or decrease the penalties imposed by ESMA (European Parliament & Council, 2011, arts. 23c–25, 31.2, 36c, 36e).

In sum, legalisation leads to a similar conclusion to the one reached by the IG, but through a different route. The IAD framework focuses on the shift from norms to rules, as signalled by the introduction of sanctions. The legalisation framework, by contrast, identifies a 'hardening' of originally soft rules through strengthened obligation, precision, and delegation. Rather than indicating redundancy, the fact that these frameworks point in similar directions illustrates equifinality – here, a case in which distinct analytical pathways lead to converging conclusions.

Applying policy density and intensity

Finally, we turn to the third framework and ask: 'Has policy expanded or contracted?'. We tackle this by concentrating on two dimensions – density and intensity. Density, which concerns the number of policies and instruments addressing a given issue, was until the crisis low. The IOSCO Code represented the primary regulatory tool, supplemented by limited national measures. Few policy instruments specifically targeted CRAs, reflecting a 'hands-off' approach. After the crisis, however, density grew. The regulatory landscape expanded significantly. The CRA Regulation includes detailed requirements on governance, methodology, disclosure, and conflict of interest management. Subsequent amendments (e.g., European Parliament & Council, 2013) have addressed additional issues like sovereign debt ratings and mandatory rotation. And multiple layers of oversight, including ESMA and national authorities, have created a more complex regulatory framework.

Beyond these higher-level changes in policy density, nonetheless, things might become more complex. The literature explains that when the number of regulatory targets increases, the number of instruments increases as well (Knill *et al.*, 2012, pp. 430–431). This is because the relation between the two indicators is hierarchical: a change in a target necessarily involves at least one change in instruments, since each target is regulated by at least one instrument. In our case, having recognised that the 2013 amendment expanded the scope of regulation from credit ratings of private-sector institutions to sovereign ratings, we must conclude that the instruments also increased. Assessing how much they increased, however, is less straightforward. In principle, classification should begin with an expert understanding of the range of possible instruments and targets, and then proceed to identify when and how each instrument addresses a given target. In practice, though, this matching can be ambiguous. Some cases are relatively clear: for example, the provisions on transparency and disclosure introduced by the new CRA rules, which apply to both types of credit rating targets, are easily classified under information-based instruments. But other cases are less clear-cut.

Should the new corporate governance provisions be treated as part of the same instrument addressing conflicts of interests, or do they constitute a different instrument? The answer depends on how broadly or narrowly one defines the instrument in question. That choice, in turn, will influence conclusions about the extent to which instruments regulating different credit rating targets have increased or decreased – though not necessarily our conclusions regarding the direction of policy change.

After density, we proceed to examine intensity – understood as the stringency of instruments. As for density, here too we see an increase after the crisis. Initially, intensity was low: provisions emphasised general principles like transparency and accountability. But then, intensity increased, in both level and scope. Rules became stricter, and progressively so. For example, on top of the binding provisions on conflicts of interest introduced by the CRA Regulation, subsequent amendments have added rules of rotation (i.e., avoiding that a given issuer is rated by the same CRA for an excessively long period) and further requirements on CRAs' independence (European Parliament & Council, 2013, arts. 6a–6b). Regulatory standards have thus been tightened, not the opposite. As for scope, the target group of specific instruments has increased too, for instance because the 2013 Regulation tasked the Commission to assess whether the scope of the rotation mechanism just mentioned should be extended to other asset classes (European Parliament & Council, 2013, art. 39.5b).

Finally, in a distinctive move, we consider formal (as opposed to substantive) intensity. This tells us that also the actual capacity of implementing rules has improved. Despite the notorious budgetary constraints affecting EU regulatory agencies, ESMA has a substantial staff base (over 350 employees as of 2024) and a larger budget – primarily funded by the EU and member states – than IOSCO, which instead has a relatively small secretariat, and a more limited budget funded by membership fees from national regulators.

In sum, through the density-intensity lens we conclude that the transition from the pre- to the post-crisis CRA rules have entailed an expansion, not a shrinking of regulatory policy.

Discussion and conclusions

With our contribution, we wish to assist other researchers by demonstrating how to derive metrics from explicit conceptual lenses. The three views we reviewed, while all objective, conceptually robust, normatively independent from IOs, and well-suited for comparative and cumulative research, are rooted in and connected to distinct broader fields and scholarly communities. Our conceptual review and empirical illustration have shown that all three frameworks deliver theory-grounded methodologies and ways to create

metrics, but each does it in its own way. Let us now consider the dimensions portrayed in Table 3.

For the IAD-IG, rooted in institutional analysis, public administration and political economy, regulation is manifested empirically by the design of an action situation called rulemaking as revealed by language and, more precisely, institutional statements, which are the unit of analysis at the micro level. At the meso level, we find rule types. For legalisation, at the crossroads of international law and IR, regulation is the result of three dimensions - obligation, precision, and delegation - that give order to the architecture of an international (regulatory) environment. Empirically, the focus is on the organisation of power and authority in multi-level governance. The unit of observation is a regime, for example an international treaty. In the third framework, which draws on public policy, the focus is on policy. Policy decisions, and consequently policy change, are examined with the aid of the two dimensions of intensity and density. The level of analysis varies from micro to macro.

The most suitable research questions for each framework follow from their focus and units of analysis. For the IAD-IG, the exploration of rule types is key to the institutional structure of an action situation, that is, how rulemaking (as action situation) comes together by defining with institutional statements who does what, when, for what aims, with what kind of pay-offs and so on. The second framework performs best for research questions on the shape, distribution of authority, precision, in short for the fabric of legalisation – the hardness or softness – of a given international / multi-level regulatory governance space. The density-intensity framework deals with questions on policy change and the direction of policy over time, especially questions on dismantling or the expansion of regulatory policy regimes.

To illustrate, the EU's Green Deal can be seen as design of action situations across many individual legislative initiatives. But it can also be understood as a policy regime-building exercise where both density and intensity are on the rise. For the legalisation lens, the Green Deal should be approached in still another way, namely as a multi-level governance architecture. Legalisation indeed has a special value for research on multi-level governance, with a macro-orientation on the multi-level regulatory orders of authority and power.

As for dynamic analysis, all three frameworks have potential, but perhaps we find the time dimension more explicit in legalisation and intensity-density. Conversely, while all three lenses appear amenable to computational analysis, the IG seems further along in its integration of computational tools.

To carry on: in a project finalised to the creation of new data, the IAD-IG would certainly perform well. The granular data generated with this lens can be produced with natural language processing, for example – thus, the presence of a large corpus of statements is not a problem. As we have

Table 3. Three frameworks to regulatory metrics.

Framework	Empirical focus	Key concepts	Unit of observation	Level of analysis	Operationalisation	Key research questions	Strengths	Challenges & limitations
Institutional Analysis & Development	Language, Text	Institutional grammar Rule types	Institutional statements	Micro Meso	High	How does a regulatory action situation come together via rule types? How does institutional design define a rulemaking action situation? How do action situations differ?	Theory-driven Data generated by institutional grammar Data are computationally tractable Focus on constitutive and regulative elements Horizontal and vertical nesting High flexibility	Design evidenced by legislation may miss rules-in-use in implementation Difficult to relate granular data on regulatory design to macro-level inferences and outcomes (e.g., compliance, trust)
Legalisation	International regimes	Obligation Precision Delegation	Regime	Macro	Medium-Low	How legalised (i.e., hard) a given international regime is? How does law evolve (hardening or softening), with what effects, and/or through which agents?	Theory-rich Bridges international relations and international law Explicit attention to conflict resolution (delegation of dispute settlement) Straightforward answers	Positivist understanding of law Ambiguity: are the concepts measured at the level of a clause-article of a treaty or on the whole treaty? Challenging operationalisation (esp. precision) Low-medium flexibility
Policy Density & Intensity	Policy	Density Intensity	Multiple (i.e., regulation, implementing instruments, their calibration)	From micro to macro	Medium-High	Is a policy expanding or being dismantled? What are the causal effects (if any) of these regulatory policy changes?	Problematises distinction between regulatory outputs and outcomes Sheds light on regulatory substance Captures also subtle policy dismantling Straightforward answers Problematises implementation capacity (formal intensity)	Definition of policy fields or areas might be discretionary Low-medium flexibility

Source: Own elaboration.

seen in our application, the challenge then is to make sense of granular IAD-IG observations. Arguably, the best way to make this lens speak meaningfully is to embed it in causal analysis, which is feasible yet still uncommon. In fact, this is true for all lenses: they become more meaningful when embedded in causal models that turn their regulatory metrics in either independent or dependent variables.

Due to potentially challenging operationalizations (particularly for precision), the legalisation view is less suitable for the creation of datasets. But, it can direct researchers towards key answers in the identification of where power lies in areas like international treaties, notably thanks to its distinctive attention to delegation of conflict resolution powers. More broadly, researchers interested in how law and politics recursively influence one another may find this framework exceptionally attractive.

IAD (as legalisation) is very theory-rich and theory-driven. Yet a focus on design as evidenced by institutional statements found in legal documents tells little about how actors actually use rules at the implementation, delivery, and compliance-enforcement stages. Indeed, while in principle the IAD distinguishes between rules-in-form and rules-in-use, in practice, researchers have concentrated on the former, a tendency reinforced by the increasingly popular computational text methods. Intensity-density, by contrast, does not originate in grand theories, but has the merit of being anchored to pressing contemporary questions about dismantling and building public policy regimes.

Further, the intensity-density lens is the only one deliberatively crafted to address policy content. The legalisation framework, instead, is ultimately interested in the separation and concentration of power, whereas the IAD addresses institutional analysis questions.

Hopefully, researchers will benefit from this comparative exercise, which aims to clarify what truly distinguishes – and what the respective advantages are – of three major views. Future research may engage with other perspectives, grounded in different conceptual lenses and understandings of what regulation is, or may seek to develop a unified framework – an avenue we have not pursued here. Some metrics, as further research may show, are well-suited to assessing the growth of regulation; others may be better for building causal models of regulation's effects on outcomes such as employment or the environment. Rather than advocating the primacy of any single framework, we are interested in the light each casts – aware that only by considering them together can we better understand, build, and repair the complex cathedral that is regulation.

Notes

1. Indeed, a whole seminar series on metrics of regulation can be accessed at: https://www.youtube.com/playlist?list=PLuHJc1Y15jx_aYrU9DVP11iXWksdOjkpk (last accessed 17 April 2025).

2. https://www.quantgov.org/history (last accessed 19 November 2024).
3. https://regulatorystudies.columbian.gwu.edu/reg-stats (last accessed 19 November 2024).
4. https://rulemaking.worldbank.org/en/rulemaking (last accessed 10 April 2024).
5. https://www.oecd.org/gov/regulatory-policy/indicators-regulatory-policy-and-governance.htm (last accessed 10 April 2024).
6. https://paulromer.net/georgieva-imf/ (last accessed 19 November 2024).
7. See https://ec.europa.eu/commission/presscorner/detail/en/qanda_25_615.

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