NETWORK TASKS AND ACCOUNTABILITY: A CONFIGURATIONAL ANALYSIS OF EU REGULATORY NETWORKS

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Abstract

Intergovernmental networks have become a prominent cooperative mechanism to deal with trans-boundary and interdependent problems. Yet, we still have limited knowledge of how these collaborative endeavors are governed, which is crucial to properly understanding how they function. This paper empirically examines the structural governance configurations of rule-enforcing networks in the European Union. The paper relies on data from 37 networks with rule-enforcing task and conducts a qualitative comparative analysis. We find three basic governance structure configurations used by rule-enforcing networks: first, a configuration with legal accountability, which is characterized by having a board of appeals; second, one with administrative accountability that, in addition to a board of appeals, has powerful executive boards and professional experts in the network plenary; and a third one with democratic accountability that incorporates legislative representatives in the network plenary. We argue that these results show how network tasks are related to accountability and governance.

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Introduction

In a globalized interdependent world, regulation requires shared solutions and cooperation among key actors (OECD 2013). Intergovernmental networks have become a prominent type of cooperative organizational mechanism for solving trans-boundary problems emerging from our interdependent societies. The functioning of these entities is thus critical for properly tackling interdependent problems, providing effective solutions, and making good use of public resources. The functioning of an organization (or inter-organizational set) depends, in part, on its structure. More precisely, the governance structure is a key component of any organization, including regulatory networks (Coen and Thatcher 2008; Heritier and Lehmkuhl 2008). As per structuration theory, structure affects the behavior of the interrelated actors, which in turn affect the structure as they act (Giddens 1984; Kickert and Koppenjan 1997). However, we have a long way to go toward a detailed understanding of the appropriate governance configuration of intergovernmental networks. The present lack of knowledge is a barrier to understanding how these networks function and, eventually, which interventions to take to improve their effectiveness.

This paper aims to contribute to improving our empirical understanding of how intergovernmental networks work while contributing to the literature on network governance. In particular, we focus on networks with a potent but rare task: rule-enforcement. This task to ensure that stakeholders affected by a regulation comply with rules and norms is of interest because, in general, networks seldom have enforcing tasks, and even less do international networks. The significance of being delegated with such a task and its exceptionality make it a promising subject of research. Thus, in this paper, we aim to identify what are the structures of networks with rule-enforcing tasks. More specifically, our research question is: "*What structural governance configurations do EU regulatory networks that are tasked with rule-enforcing have*?" To answer this question, we examine the governance structure of all 37 EU regulatory networks using qualitative comparative analysis (QCA).

Theoretically, network governance literature has underscored the importance of tasks as a key contingency factor in the design of network governance (Provan and Kenis 2008). In essence, networks that require more network-level competencies will have more integrated governance. This is so, because greater coordination is required when a network collectively enacts more complex endeavors (Kenis, Provan, and Kruyen 2009; Provan and Kenis 2008). Yet, empirical research is lacking to understand this phenomenon.

We focus on regulatory networks and their different governance configurations. In previous research, Saz-Carranza, Salvador-Iborra, and Albareda (2016) found that, during the initial stages of a network, members negotiate in detail and bargain strongly regarding network tasks and governance mechanisms. They found that members are reluctant to delegate potent tasks to the network or to cede control points in the network's governance design. In other words, task delegation and governance complexity will occur only when they are cost-effective and inevitable (Bensaou and Venkatraman 1995; Dussauge, Garrette, and Mitchell 2000, 2004).

The EU is a fertile ground to explore networks, since many policies and areas have mixed competences (i.e., involving the EU and member states), meaning that both the EU and the member states could make policy (European Union, 2007). Moreover, the interdependence of the deeply integrated European market requires evermore regulatory harmonization among member states (Coen and Thatcher 2008). In such instances, national regulatory agencies collectively agree on a set of rules and enforce them. Rule-enforcement networks contribute to EU governance by helping members enforce laws and regulations that they have collectively determined. Aligned with Slaughter (2004; 291), we consider that EU networks have rule-enforcement tasks when they are empowered with implementation tasks. Rule-enforcement networks go beyond the basic functions of providing opinions and recommendations when drafting regulations. Rule-enforcement networks are active in implementing EU legislation and ensuring harmonization across member-states. For example, the European Banking Authority takes decisions directed at individual competent authorities or financial institutions in emergency situations, the European Medicines Agency (EMA) is in charge of authorizations of new drugs, and the European Chemicals Agency (ECHA) identifies and investigates substance of very high concern.

While recent literature on EU regulatory networks goes much beyond early studies that focused on the institutional choice between delegation to the Commission or creating an EU regulatory network (Coen and Thatcher 2008; Blauberger and Rittberger 2014; Tarrant and Kelemen 2017), few studies have looked at the internal organization structures of these networks. Maggetti and Gilardi (2011), for instance, looked at how EU member-state centrality affects the adoption of the regulations produced by the network, as well as looking at how effective these networks are in harmonizing regulations across EU member states (Maggetti and Gilardi 2014). Van Boetzelaer and Princen (2012) found that regulatory harmonization among member states depends on the level of interdependencies among them. Bach, Ruffing, and Yesilkagit (2015) showed how national regulatory

agencies (network members) gain autonomy from their national ministries by participating in EU regulatory networks—see also Bach and Ruffing (2014) and Heims (2017). In contrast to these scholars, we look at the detailed governance structure of regulatory networks, particularly those rule-enforcing networks.

We find that rule-enforcing networks, in comparison to networks without this task, have more elaborate governance structures, combining more elements such as a board of appeals or including independent experts in the plenary. We find three basic governance structure configurations used by rule-enforcing networks: first, a configuration with legal accountability, which is mostly characterized by having a board of appeals; second, one with administrative accountability that, in addition to a board of appeals, has powerful executive boards and professional experts in the network plenary; and a third one with democratic accountability that incorporates legislative representatives in the network plenary. Importantly, we do not imply causality, but use a configurational logic to explore why several network characteristics (i.e. tasks and governance factors) tend to go together. We argue that these configurations are decided during the network setup's political negotiation among members.

The next section of the paper introduces how network administrative organizations (NAOs) are governed and structured, and the types of tasks they perform. Subsequently, the paper presents important organizational variables for rule-enforcing networks (i.e., regulatory tasks, power of executive boards, presence of boards of appeals, and representatives in the network plenary) and relates them to three accountability approaches: legal, administrative and democratic. The results of a qualitative comparative analysis conducted among 37 EU regulatory agencies indicate that there are three groups of networks vested with rule-enforcing. The paper closes by discussing the interaction between these configurations and accountability.

Goal-directed networks: governance structure and tasks

The approach used in this research to study regulatory networks differs from previous EU regulatory network studies in that we consider regulatory networks as a subtype of inter-organizational goal-directed networks. Following Provan and Kenis (2008, 231), we define inter-organizational goal-directed networks as "groups of three or more legally autonomous organizations that work together to achieve not only their own goals but also a collective goal." Scholars have studied several such networks: for example, Agranoff and McGuire (2003) studied economic development networks, Isett and Provan (2005) looked at mental health services delivery networks,

Raab et al. (2015) examined Dutch networks managing crime prevention services, and Saz-Carranza et al. (2016) and Iborra et al. (2018) explored EU regulatory networks.

Goal-directed networks must be governed precisely because they aim to achieve a collective goal (Saz-Carranza and Ospina 2011). Specifically, the governance of goal-directed networks is "the use of institutions and resources to coordinate and control joint action across the network as a whole" (Provan and Kenis 2008, 231). Although network governance has both a behavioral and a structural dimension (Saz-Carranza and Ospina 2011), in this paper, we focus on the latter because structure affects the performance of the network as a whole and the behavior of network member. Kickert and Koppenjan's (1997) seminal work used structuration theory (Giddens 1984) to explain and illustrate how network structure and member behavior affect each other. Network behavior by the members enact and reframe the network's rules, norms, and governance structure, while modifying them marginally, but simultaneously the network's structure constrains behavior (Kickert et al. 1997).

We focus on the governance structure because it has been far less researched up until now. The qualitative case-based approach research, which has populated the field so far, has mostly focused on behavior. The work on network activities (e.g. framing, synthesizing, activating, and so forth) illustrates the predominance of studies researching behavior (Agranoff 2006; Huxham and Vangen 2000; Saz-Carranza and Ospina 2011). However, it is important to highlight few studies that have looked at the structural forms of network governance drawing on large or even medium-sized N samples. Raab et al. (2015) looked, among other things, at the relationship between effectiveness and governance type (NAO vs lead organization)[1] of Dutch mandated information-sharing networks in the field of crime prevention. Kenis et al. (2009) conducted a meta-analysis of network research and found no relationship between task (whether exploitative/explorative and/or ambiguous/unambiguous) and governance form. Saz-Carranza et al. (2016) found in a qualitative study of regulatory networks that members strongly attempt to influence, and bargain vigorously over, the mechanisms to be used to control the NAO's executive component, the size of the NAO's executive component, and network purpose. Iborra et al. (2018) found that rule-enforcing regulatory networks and those regulating the

[1] There are three ideal structural forms of governance for whole goal-directed networks: shared governance among all network members, governance by one of the members (i.e., lead organization), and delegation of governance to a NAO (Provan and Kenis 2008). Provan and Kenis (2008) also identified the key predictors of forms of network governance, namely trust density, number of participants, goal consensus, and need for network-level competencies. In essence, low trust density, low consensus, large membership, and the need for network-level competencies all increase transaction costs (Williamson 1975) related to governing the network, thus making a central broker far more efficient than unbrokered multilateral coordination and implementation.

economic and financial sector have more complex NAOs. Wang (2016) studied NAO-governed neighborhood networks in Beijing and found that in weaker socio-economic contexts effective networks are more relationally centralized. In this paper, we focus on a related topic, by particularly exploring what are the governance structural characteristics of the NAOs of regulatory networks with rule-enforcing task.

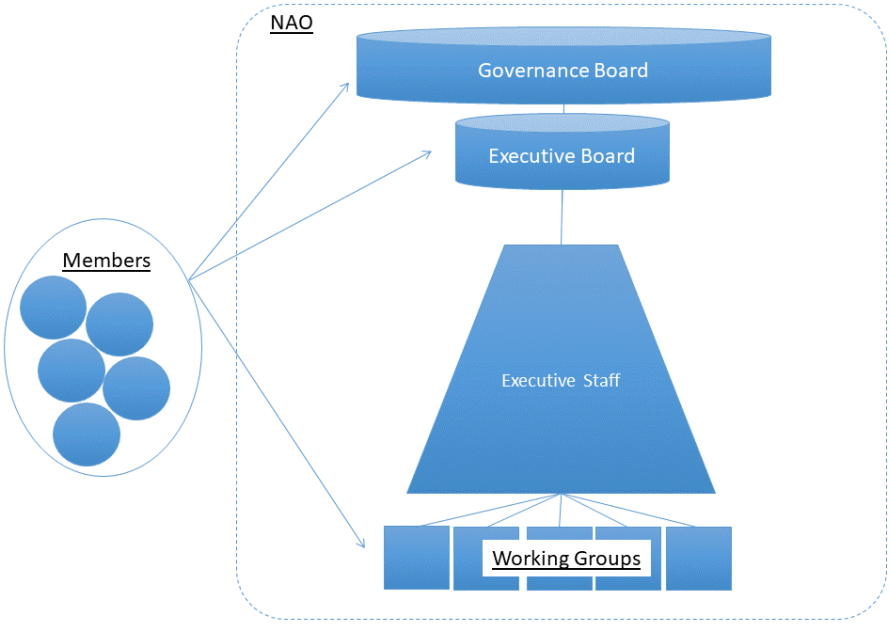
NAO structures and accountability

All NAOs have a plenary—a governance board, general assembly, or equivalent—which brings together all network members and is the network's highest decision-making body (Agranoff 2007; Graddy and Chen 2006; Rodriguez et al. 2007). Some NAOs have an additional board, usually called an executive or administrative board. When this board exists, it is usually charged with the detailed and continuous oversight of the NAO executive staff. Decision making among the NAO's multiple principals (Miller, 2005) and their relationship with their broker, the NAO's management, and staff, is central to the NAO's functioning.

Arguably, the plenary and boards where members meet and interact is an instance of network interaction among members rather than a structural unit of the NAO. However, we conceptualize the plenary and the board as part of the NAO since, as any other organization, it has certain "corporate" governance units, which are central to its functioning and being. In any case, the plenary and board are governance units of the network, irrespective of whether we consider them part of the NAO or not (Saz-Carranza et al. 2016).

The plenary—and the executive board, when it exists—is expected to provide resources, and safeguard accountability by controlling and monitoring both the overall endeavor as a whole and the network broker, i.e. the NAO executive staff (Davis 2005). Additionally, as is the case for public and nonprofit organizations, the plenary and board are also concerned with simultaneously combining different political standpoints and social preferences in the decision-making process (Hinna and Scarozza 2015; Blair and Stout 1999; Rajan and Zingales 2000). Figure 1 shows the NAO prototype with its basic structural units (Saz-Carranza et al. 2016).

Figure 1: NAO structure



NAOs may also incorporate a board of appeals or similar body. A board of appeals—an independent unit part of the network's governance structure—is responsible for deciding on appeals against certain decisions taken by the network. The unit is independent in the sense that it is not subordinate to the plenary nor the executive component of the NAO. As an illustration, the European Securities Market Agency (ESMA) has a board of appeals composed of 6 individual independent experts (plus six alternates). This board has to decide on appeals against a decision of ESMA submitted by any natural or legal person, including competent authorities (ESMA, 2018). This "ex-post" accountability mechanism is particularly relevant in regulatory networks to provide and ensure fair and proportionate treatment of regulatees (Villard Duran 2015). Hence, NAOs may be more or less elaborate, including more or less highly developed administrative and governance components.

The governance structure of a network has important implications for, among other things, accountability. Accountability may be construed as "the obligation to give an account of one's actions to someone else, often balanced by a responsibility of that other to seek an account" (Scott 2006, 175; Koliba, Mills and Zia 2011). In networks, accountability between that "someone" and the "other" can refer to different actors. More specifically, the network as a whole can be externally accountable to elected politicians or to those affected by its policies and regulations. In such instances, it is the network that is accountable, and the recipient of the accountability are external

actors. Yet, accountability can also be internal to the network, in particular when the NAO's staff is accountable to the executive component which is, in turn, accountable to the network members.

Related to this, prior research has identified various forms of accountability. In this paper, we focus on three distinct types: democratic, administrative and legal accountability. A democratic approach to accountability is a public entity (including a network) being accountable to elected officials, who have the capacity to scrutinize and influence the action of the public entity (McGravey 2001; Koliba et al. 2011). An administrative approach (or shareholder [Koliba et al. 2011]) refers to an agent being accountable to the principals, as when a public executive agency is accountable to the minister, i.e. its political minister. This is akin to how corporate governance scholars use accountability: the reporting and controlling flows connecting management to the board to shareholders (OECD 2004). In a network setting, this applies to the NAO's staff being accountable to network members (either in the executive board or in the plenary). Moreover, Koliba et al. (2011) also relate administrative accountability with expertise and professionalism. That is, following Romzek and Dubnick's (1987) framework, administrative accountability also entails structures that rely on the "skills and expertise of professionals to inform sound judgement and discretion" (Koliba et al. 2011, 213). Lastly, another approach is the legal accountability (McGravey 2001), where an external independent body is in charge of audits and evaluations—as is the case for auditors or independent evaluation offices.[2] In regulatory settings, a legal accountability is often adopted when a third-party board of appeals can review decisions affecting a regulatee.

Rule enforcing networks and NAO structure

In this study, we focus on the governance configurations of networks with rule-enforcing tasks. As further discussed below, this is an important focus because it is rare that networks have rule-enforcing tasks, yet networks who have this are trusted with important competencies and thus it is necessary to unpack how they are internally organized and which accountability mechanisms do they put in place.

Public goal-directed networks are consciously created to attain specific goals and are charged with executing certain tasks to that end (Popp et al. 2014; Raab and Kenis 2009). Organizational

[2] These are not the only accountability approaches identified. Other approaches (but not relevant to this study are the management approach, where results are the main accountability driver (McGarvey 2001) and the related market-based customer-oriented approach (Koliba et al. 2011).

scholars have long related organization structure to tasks executed (Lawrence and Lorsch 1967). In this vein, Provan and Kenis (2008) identified network-level competencies as a key contingency factor of network governance forms—and while competencies are not tasks, they are a direct consequence of the tasks delegated to the network as a whole (Provan and Kenis 2008). The more of these tasks are expected, the greater the need for the NAO.

Different network tasks imply different degrees of interdependence among members (Alter and Hage 1993). Research on joint ventures and networks has found that interdependences of (network) tasks are related to how the network is governed. This is because network-level tasks imply information requirements, coordination efforts, and transaction costs (Bensaou and Venkatraman 1995; Dussauge, Garrette and Mitchell 2000, 2004; Provan and Kenis 2008). Saz-Carranza et al. (2016) proposed that operational interdependence among network members implies more elaborate and sophisticated NAOs—i.e., more governance units and larger and more diversified NAO executives.

Agranoff (2007) identified different types of public management networks that deal incrementally with exchange, concerted action, and joint production (Alter and Hage 1993). Agranoff (2007) distinguished at one end of this continuum networks that only exchange information, and at the other end interagency adjustments that formally adopt collaborative courses of action. In between, the typology positions networks that deal with information exchange, produce member services, sequence programming, exchange resource opportunities, and pool client contacts. Networks institutionalize (i.e., have larger and more complex NAOs) as they move along the continuum from exchanging information toward joint production (Agranoff 2007). Importantly, built on organization theory-based work of Alter and Hage (1993), the increasing institutionalization of collaborative ventures relates to the interdependencies implied by their purpose. Thus, joint-production networks imply far greater interdependencies than those that simply share information. Strategic alliance scholars support this: when the alliance must deliver many tasks (i.e. has a wide scope) and in particular, when it requires operational integration, a joint venture governance is preferred over a contractual alliance (Dussauge, Garrette and Mitchell 2000,).

Focusing specifically on regulatory networks, Slaughter (2004) identified three basic network functions: information sharing, rule setting, and rule enforcement. In a similar vein, and focusing on EU regulatory networks, Coen and Thatcher (2008) distinguished regulatory networks along a soft-to-

hard continuum, which runs from coordination at the soft end to drafting secondary legislation at the EU level at the hard end. Thus, a network enforcing rules on regulated entities will have a more complex NAO than those that are simply sharing information.

All regulatory networks will, at a minimum, share information. However, not all networks are entrusted with the additional two regulatory tasks of rule setting and rule enforcement. Moreover, enforcement networks may or may not also be rule-making. In fact, Slaughter recognizes the "overlap" (p290) between these two tasks and acknowledges that "enforcement networks [help] enforce law they have individually or collectively determined"—where "collectively determined" means that the network has also set the rules (p291).

Supporting this incremental logic in the task typology, Saz-Carranza et al. (2016) found that the EU energy regulatory network Agency for the Cooperation of Energy Regulators (ACER) and the telecom Body of European Regulators for Electronic Communications (BEREC) started out with two identical proposals in terms of tasks and NAO structure. Yet, during the political negotiation related to the tasks and structures of these two networks, ACER ended up with both tasks and an elaborate NAO structure, whereas BEREC has a far slimmer governance structure and no involvement in either task (in essence being an information sharing network). European Police Office (EUROPOL), on the other hand, has rule-making capacities but not rule-enforcing ones, and has a governance structure similar to that of BEREC. Their research suggests that tasks and form of governance are interrelated and the product of political and technical rationales.

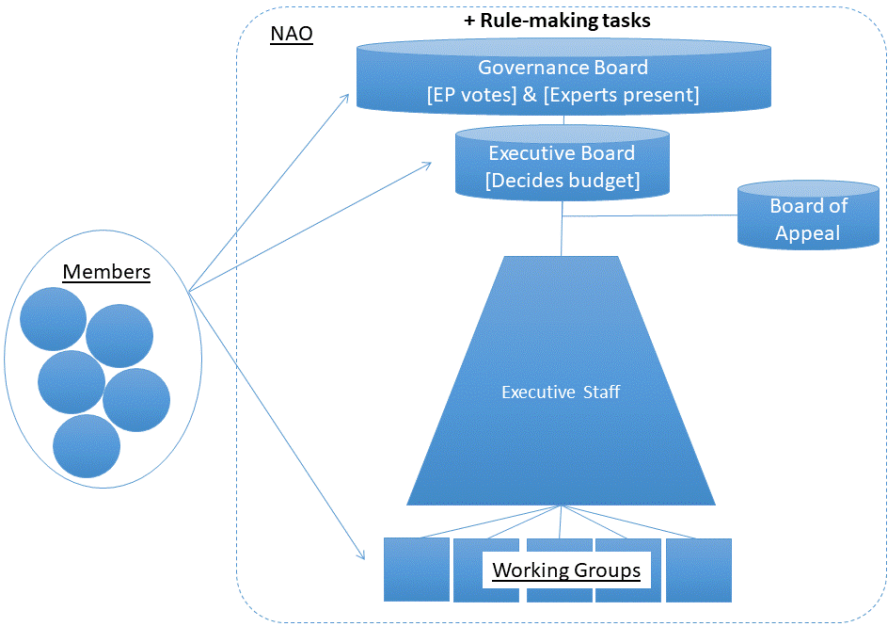
In this study, we focus on the organizational configurations that networks with rule-enforcing tasks can adopt as compared to those without this responsibility. We focus on networks with this task because it is rare that a network has such a task. In most regulatory networks, it is up to members to enforce rules. This is even more so at the international level, where implementation and enforcement are typically a matter for members to execute. Moreover, enforcement implies the highest degree of what Provan and Kenis (2008) call network-level competencies. In contrast to rule-making, which requires collective decision-making among network members, rule-enforcement requires the network to have the capacity to monitor, evaluate, and adjudicate particular cases. Importantly, while in this paper we focus on rule-enforcing networks, we do take into account whether having also rule-making tasks affects the governance structure of rule-enforcing networks. Nevertheless, we do not claim causality among the different characteristics observed. Based on previous research, we argue that

certain characteristics are interrelated and are designed interdependently during the political negotiation of the network's setup (Saz-Carranza et al. 2016).

Governance configurations of rule-enforcing networks

To study the structural configuration of rule-enforcing networks, we examine key organizational features of the different layers (plenary, board and other governance bodies) of such networks, as well as their tasks. The features we look into specifically cover network tasks, the presence of elected officials in the network plenary, the strength of the NAO's board, and whether the NAO includes independent experts via a board of appeals or include them in the network plenary (see Figure 2 where these features fall into the structural units of NAOs). These features are derived from the key structural components of the prototype shown in Figure 1 above and tested in a study by Iborra et al. (2018), who found that (i) network tasks are associated with NAO complexity and that (ii) the presence of elected officials and independent experts in the network plenary, the strength of the NAO's board, and whether the NAO includes a board of appeals or equivalent are all strong indicators of NAO complexity. Moreover, these structural features relate to different types of accountability, both in their approaches as in who is accountable to whom.

Figure 2: NAO prototype of regulatory networks



Our aim is to understand in detail the network plenary by looking at whether they include non-members such as independent experts and/or EU officials. We try to capture the second governance unit, namely the executive board—if it has one—and how powerful it is. We also look whether the network has an additional governance unit, a board of appeals, which many regulatory networks include in their design (Iborra et al. 2018). These mechanisms relate in different degrees to democratic, administrative, and legal accountability approaches. Lastly, we also explore whether the networks studied—whether with or without rule-enforcing capacities—also has rule-making powers. Together, these indicators cover all structural governance units and tasks, which are the crux of our study—Figure 3 illustrates which structural components are theoretically relevant for each accountability approach.

Elected officials in the network plenary

There are various ways of distributing control among the NAO, network members, and mandating party in mandated networks (cf. Boin, Busuoic, and Groenler 2013). Yan and Gray (1994) found that joint-venture partners negotiate to determine participation in decision making in the venture's board. In regulatory networks, a hotly contested issue is whether non-members are allowed on NAO governance bodies. More specifically, as shown by Saz-Carranza et al. (2016), members of two EU regulatory networks (BEREC and ACER) tried to increase their control over the NAO's key units and roles. In one of the regulatory networks (BEREC), the members of National Regulatory Agencies (NRAs) managed to reduce the presence of EU institution representatives on governance boards, while in the other (ACER), NRAs managed to secure unique oversight over the NAO's director-general—while having to accept representatives from the European Parliament. This is a relevant accountability issue. Perhaps the most traditional accountability mechanism in public administration is the flow from civil servants to elected officials to parliament members (McGravey 2001). Thus, a democratic accountability mechanism in regulatory networks is to place legislators in the network plenary.

It is not obvious whether to expect rule-enforcing networks to adopt a democratic accountability approach. On one hand, rule-enforcing networks are expected to require higher levels of accountability due to their potential effects on the industry and the public in general. On the other, in the European tradition, rule-enforcing agencies tend to use a legal or ex-post rather than democratic

accountability approach (as for example police units, judicial branches or competition authorities) (Villard Duran 2015).

Strong executive boards and Experts in the plenary

The information load placed on the governance unit of an organization increases as the organization grows and/or becomes more complex (Henderson and Fredrickson 1996). This is because principals face more difficulties when attempting to capture and identify all the needs of the organization given their distance from operations. As Boivie et al. (2016) noted, in general, the larger a company is, the greater the powers of its board to cope with rising information-processing demands (Henderson and Fredrickson 2001). Similarly, for complex regulatory networks, the executive board—rather than the plenary—is the efficient governance structure to control the NAO because of its focus and proximity to the NAO's day-to-day activities (e.g., Zahra and Pearce 1989). Among regulatory networks, we expect those networks with rule-enforcing tasks to have strong boards. Boards of networks with increasingly complex tasks will enjoy more responsibilities to better support and monitor the NAO executive. Rule-enforcing networks may be expected to have strong executive boards, boards with relevant duties, such as budget approval capacities. In this vein, executive boards that have the power to determine the budget of the network – which has clear implications for the board's operational capacity – are expected to be more present across rule-enforcing networks. In essence, networks with wider scope and greater network-level task interdependence will rely on, among others, a principals-oriented (i.e., administrative) accountability approach, which is based on the capacity of principals to exert strong measures of control over their agents (Koliba et al. 2011).

Complex regulatory networks with rule-enforcement tasks are also likely to rely on professional and expertise-based information that cannot always be obtained in-house (Arras and Braun, 2018; Christensen and Laegreid 2007). Subsequently, networks with rule-enforcement tasks are expected to incorporate professional experts in the top decision-making bodies so as to have their view and opinion on the different topics that might be discussed. This emphasis on professionalism and expertise also relates with a subdimension of administrative accountability (see Koliba et al. 2011). More specifically, some regulatory networks incorporate independent experts—who are the ones to whom account is rendered—in the top decision-making body, namely the plenary (Braithwaite 1999). Independent board of appeals

As mentioned previously, rule-enforcing networks may be expected to incorporate an accountability mechanism to safeguard the regulatee from abuses or errors (Villard Duran 2015). Regulatory agencies often incorporate—in addition to hands-off tools such as audit reports and performance management—independent units as accountability mechanisms (McGravey 2001). The separation of power between regulation enforcer and accountability authority relates to the legal accountability mechanism in the regulatory state, where one part of the organization (auditors, environmental compliance, consumer complaints council) oversees another part (rule-enforcing units) (Westphal 1999). Given their powers, we would expect regulatory networks empowered to implement regulations to have an appeals mechanism that would protect the regulatee from abuse or error on the part of the regulator. In other words, regulatory networks with regulation-enforcing powers will tend to use a legal accountability approach.

Figure 3. Structural components and accountability approaches

Methods

To identify different governance structures of networks, we perform an exploratory QCA facilitated by the fs/QCA software. QCA relies on set-theoretic relations rather than correlations to analyze complex relationships between different conditions and a given outcome (Fiss 2007; Ragin 2008). QCA uses Boolean algebra to combine different conditions and to identify whether the combinations of those conditions are consistently associated with an outcome (Ragin 2008). Thereby, we identify whether specific conditions are necessary and/or sufficient in configurations that are associated with the outcome of interest. QCA edges out correlation-based analyses by integrating case-based and variable-based approaches. It allows us to return to the cases, enabling us to examine the phenomenon to reveal more information about the configurations. QCA fits to our study, since this methodological approach allows us to assume and empirically explore configurational theorizing while using the tenets of causal complexity and case knowledge (Parente & Federo, 2019) to systematically understand the governance configurations of multiple regulatory networks.

QCA has been prevalently used in prior research for configurational analysis (see reviews in: management studies by Misangyi et al. 2017; public policy by Rihoux et al. 2011; and other disciplines by Rihoux et al. 2013). The public administration field has also recognized the use of this technique to analyze complex relationships (e.g., Federo and Saz-Carranza 2018; Raab et al. 2015; Verweij, et al. 2013), including network research (e.g., Raab, Lemaire, and Provan 2013). The

strength of QCA resides in three main features (Misangyi et al. 2017). First, QCA uses a conjunctural rationale by combining multiple conditions that are jointly associated to an outcome (Schneider and Wagemann 2012). As we theorize in this study that governance configurations of regulatory networks entail multiple interdependent conditions, QCA helps us explore the combinatory effect of different features that are associated to rule-enforcing EU regulatory networks. Second, QCA explores equifinality, which shows the possibility of different combinations of conditions that may be related to the same outcome (Katz and Kahn 1978). In this study, we assume that there are multiple paths (i.e., governance configuration) that may lead to the same outcome (i.e., having rule-enforcing tasks). In that respect, QCA serves our purpose of unveiling the different governance configurations of rule-enforcing EU regulatory networks. Third, QCA analyzes the possibility of asymmetry (Berg-Schlosser et al. 2009), which explores whether the inverse of the conditions in configurations that are associated to a given outcome may be related to the absence of the outcome (Misangyi et al. 2017). As we explore the governance configurations of rule-enforcing regulatory networks, QCA expands our analysis to identify also those governance configurations that are associated to regulatory networks without rule-enforcing tasks.

Sample and data collection

This paper examines 37 EU regulatory networks. This represents the complete universe of EU regulatory networks at the time when the data collection was conducted (i.e., between 2011 and 2012). Several steps were followed to obtain this list of 37 networks. First, the authors relied on Levi-Faur (2011) as well as the EU decentralized agency list (European Union, 2018) to get a complete picture of the operational regulatory networks. After excluding duplicates, we identified 86 networks, however, 17 were excluded because they were no longer operational (e.g., Committee of European Insurance and Occupational Pensions Supervisors; Committee of European Banking Supervisors; European Regulatory Group); 24 were removed because they cannot be regarded as networks following our definition, since these entities are fully controlled by the EU institutions (Parliament or Commission) and not by national regulatory members (e.g., European Asylum Support Office; European Anti-Fraud Office); finally, eight organizations were excluded because they are not regulatory in nature but rather executive and do not incorporate national regulators (e.g., Translation Centre for the Bodies of the European Union; European Centre for the Development of Vocational Training; European Global Navigation Satellite System Agency).

Two researchers reviewed the websites and the founding documents of each network (i.e., EU regulations, by-laws, and legal statutes), and coded the conditions and the outcome included in the study. To strengthen the reliability of the codes, the researchers sorted out any inconsistency in a second round of coding. Data collection was completed during the second semester of 2012 and the information used in our analysis refers to 2011. In this respect, we acknowledge that some of the governance configurations, as well as the tasks performed by some networks, may have been amended, but this does not affect the purpose of this study.

Our outcome variable is rule-enforcement task. In that respect, we assess whether the network has the capacity to authorize regulatees. As an illustration, as stated in the acts of ACER, the network can make "binding individual decisions in specific cases and under certain conditions on cross-border infrastructure issues." Similarly, the EMA produces evaluations of marketing authorization that are the basis for the authorization of medicines in Europe.[3] In contrast, other EU regulatory agencies are more focused on sharing knowledge, information, and good practices among members (e.g., European Network for Workplace Health Promotion – ENWHP), or offering services such as training to their members (e.g., European Union Agency for Law Enforcement Training – CEPOL).

The conditions considered in the QCA are: rule-making tasks, the importance of the executive board within the network, the presence of a board of appeals, the presence of representatives of the European Parliament with the right to vote in the plenary, and the presence of independent experts in the plenary. Based on the networks' by-laws and statutes, the conditions were coded as follows:

- The first condition (i.e., rule-making tasks) indicates whether the network has the assigned task of generating proposals and providing information that will then be used by EU institutions when developing a regulation. When any of the reviewed documents mentioned that the network has the capacity to provide support or technical assistance in the development of EU legislations, it was coded as one, and as zero when this is not mentioned. As an illustration, EIOPA's website specifically states that one of the network tasks is to "give evidence-based advice to help shape informed policies and laws at the EU level."

[3] Another example could be the European Chemicals Agency (ECHA). According to its mission, ECHA is the driving force among regulatory authorities in implementing the EU's groundbreaking chemicals legislation for the benefit of human health and the environment as well as for innovation and competitiveness.

- Second, the factor elected officials indicates whether European Parliament representatives (i.e., MEP or some of their assistants) with the right to vote in the plenary of the network. For instance, the EMCDDA has two representatives designated by the European Parliament in its main decision-making body.
- Third, the strength of the executive board within the network is measured by looking at the capacity of the board to determine the annual budget either by itself or in collaboration with the plenary meeting. For instance, the EBA executive board proposes the annual budget and also has the power to "exercise certain budgetary powers."
- The fourth condition indicates whether independent experts (i.e., individuals with expertise in the field, such as scholars or individuals with extensive professional experience) participate in the plenary of the network. As an illustration, ECHA's plenary board includes three members without voting rights appointed to represent interested parties such as people from the industry with professional experience and relevant expertise.
- Finally, the last condition merely indicates whether the network organization has a board of appeals or not.

Crisp set analysis

In line with best practices when performing QCA (Schneider and Wagemann 2012), we first analyzed for the necessity and sufficiency of each condition in configurations. Necessary conditions are those conditions that are required to be in the configurations related to an outcome, while sufficient conditions are those conditions that can be related to the outcome without the help of other conditions (Ragin 2008). A condition is considered necessary if it has a consistency score of at least 0.90 (Ragin 2006).

We then identified the sufficiency of conditions in configurations using a crisp set QCA, since our dataset consists of a binary outcome and five binary conditions. We evaluated the configurations on their consistency and frequency scores. Only those configurations that meet our consistency and frequency thresholds are taken into consideration. Consistency refers to the notion of fit between different attributes that make a configuration, in which empirical evidence supports the necessity and/or sufficiency of set theoretic relations found in the analysis (Ragin 2006). Our consistency threshold is pegged at 1.00, as we resolved contradictory configurations (Rihoux and De Meur 2008). The frequency score threshold refers to the number of cases that must be observed for

each configuration to be considered. Our frequency threshold is one case per configuration, which is acceptable for small to medium N analyses (Federo and Saz-Carranza 2018; Haxhi and Aguilera 2016).

Those configurations that meet our consistency and frequency thresholds are presented with their respective coverage in a configuration table (Fiss 2011). Coverage measures the empirical relevance of how cases are distributed over the configurations (Ragin 2006). We report the intermediate solutions in a configuration table showing presence and absence of conditions (Ragin and Sonnet 2005). Intermediate solutions are preferred when interpreting QCA results (Ragin 2008). They only account for easy counterfactuals, which are those redundant conditions added to a set of conditions that, by itself, already related to an outcome (Fiss 2011). With 37 cases, the counterfactual analysis addresses the limited diversity of observed cases. In our analysis, only 15 configurations are observed in relation to a total of 32 possible configurations.

In presenting the configurations that emerged from the analysis, we use the following notations, proposed by Ragin and Fiss (2008): "●" for the presence of the condition, "⊗" for the absence of the condition, and a blank space for "don't care" conditions that may be either present or absent (also understood as not relevant) in configurations. We also present the first and second level recipes by showing the core and peripheral conditions. Core conditions (larger circles) are those conditions that are taken from both parsimonious and intermediate solutions, and peripheral conditions (smaller circles) are those conditions that are eliminated in parsimonious solutions and thus only appear in intermediate solutions (Fiss 2011). Core conditions are considered definitive ingredients in the solutions, while peripheral conditions are contributing ingredients that can be removed from the solutions (Ragin and Fiss 2008).

Results

In line with the conjunctural rationale, we found no sufficient condition that by itself is always related to the presence of rule-enforcement tasks. There is also no necessary condition in the configurations. Four configurations of NAO structure for rule-enforcing networks emerged from the analysis. The solutions have an overall consistency of 1.00 and overall coverage of 1.00 (see Table 1).

Three configurations of NAO structure have the presence of a board of appeals as a core condition (see solutions 1, 2, and 3 in Table 1). As they share a common core condition, the

configurations are considered as neutral permutations, which means that they differ only on contributing conditions that equally are associated with the same outcome (Fiss 2011). On the one hand, solution 1 (consistency score of 1.00 and unique coverage score of 0.22)[4] includes the presence of rule-making capacities, absence of budgetary decision-making capacities, and absence of EP voting in the plenary to complete the configuration.

On the other hand, solutions 2 and 3 (consistency scores of 1.00 and unique coverage scores of 0.11) both include the presence of board budgetary decision-making capacities and presence of experts in the plenary. Moreover, solution 2 includes the absence of EP voting in the plenary and rule-making capacities is a "don't care" condition; whereas, solution 3 includes the presence of rule-making capacities and EP voting in the plenary is a "don't care" condition. Meanwhile, solution 4 (consistency score of 1.00 and unique coverage of 0.11) does not have a board of appeals in the configuration. The solution has rule-making capacities and EP vote as core conditions. The presence of experts in the plenary and absence of board budgetary decision-making capacities complete the configuration.

[4] Unique score of 0.22 means that 22% of the cases exemplify this configuration.

Table 1. QCA results for rule-enforcing networks

	Rule-enforcing networks			
Configurations	**1**	**2**	**3**	**4**
	Legal	**Legal-Administrative**		**Democratic**
(1) Network has rule-making capacities	●		●	●
(2) EP has a vote at the plenary	⊗	⊗		●
(3) The ExB determines the budget	⊗	●	●	⊗
(4) There are experts in the plenary		●	●	●
(5) The NAO has a board of appeals	●	●	●	⊗
Consistency	1.00	1.00	1.00	1.00
Raw coverage	0.22	0.56	0.56	0.11
Unique coverage	0.22	0.11	0.11	0.11
Solution consistency		1.00		
Solution coverage		1.00		
Cases*	CPVO EASA	ESMA EBA EIOPA ACER OHIM	ESMA EBA EIOPA ECHA	EMA

● - presence of a condition; ⊗ - absence of a condition; "blank space" - don't care condition
(large circles are core conditions; small circles are peripheral conditions)
* Sample cases showing the configurations

We also present in Table 2 the configurations of NAOs of networks without rule-enforcement tasks. As per the concept of asymmetry, NAO structures of networks without rule-enforcement tasks do not necessarily have the inverse of the conditions of NAOs of rule-enforcing networks. We found one necessary condition in all NAO configurations of networks without rule-enforcement tasks: the absence of a board of appeals (consistency score of 1.00). Five configurations emerged from the analysis with an overall consistency score of 1.00 and overall coverage score of 1.00. The configurations are divided into two groups: those that do not have EP voting in the plenary and those that do.

The core conditions of those NAO configurations (see Table 2, solutions 1, 2, and 3) of networks that do not have rule-enforcement tasks are the absence of EP voting in the plenary and the absence of a board of appeals. Solution 1 (consistency score of 1.00 and unique coverage score of 0.36) includes the absence of budgetary decision-making capacities and absence of experts in the plenary as contributing conditions to complete the configuration. Being a rule-making network is a "don't care" condition. Solution 2 (consistency score of 1.00 and unique coverage score of 0.36) includes the absence of rule-making network tasks and the presence of a board with budgetary decision-making capacities as contributing conditions to complete the configuration. The presence of experts in the plenary is a "don't care" condition. Solution 3 (consistency score of 1.00 and unique coverage score of 0.18) includes the presence of rule-making network tasks and presence of experts in the plenary as contributing conditions to complete the configuration. The presence of board budgetary decision-making capacities is a "don't care" condition.

The second group of configurations (see Table 2, solutions 4 and 5) includes the presence of EP voting in the plenary as a contributing condition. Solutions 4 and 5 are neutral permutations, in which they share the absence of board of appeals and not being a rule-making network as core conditions. The absence of board budgetary decision-making capacities and presence of experts in the plenary substitute for each other in configurations of networks that do not have rule-enforcement tasks.

Table 2. QCA Results for non-rule-enforcing networks

	Non-rule-enforcing networks				
Configurations	1	2	3	4	5
(1) Network has rule-making capacities		⊗	●	⊗	⊗
(2) EP has a vote at the plenary	⊗	⊗	⊗	●	●
(3) The ExB determines the budget	⊗	●		⊗	
(4) There are experts in the plenary	⊗		●		●
(5) The NAO has a board appeals	⊗	⊗	⊗	⊗	⊗
Consistency	1.00	1.00	1.00	1.00	1.00
Raw coverage	0.36	0.36	0.18	0.07	0.07
Unique coverage	0.36	0.36	0.18	0.04	0.04
Solution consistency			1.00		
Solution coverage			1.00		

Cases*	ENWHP	CEER	EMSA	EMCDDA	EMCDDA
	FRONTEX	BEREC	ENISA	EEA	ECDC
	ECAC	IRG	EUROJUST		
	EPA	IMPEL	EU-OSHA		
	EEAC	EFCA	ERA		
	ERGP	EUROFOU			
	HMA	ND			
	EUCPN	EIGE			
	CEPOL	FRA			
	EUROPOL	EJN			

● - presence of a condition; ⊗ - absence of a condition; "blank space" - don't care condition (large circles are core conditions; small circles are peripheral conditions)
* Sample cases showing the configurations

Solution 4 (consistency score of 1.00 and unique coverage score of 0.04) includes the absence of board budgetary decision-making capacities as another contributing condition to complete the configuration. The presence of experts in the plenary is a "don't care" condition. Solution 5 (consistency score of 1.00 and unique coverage score of 0.04) includes the presence of experts in the plenary as a contributing condition to complete the configuration. The presence of budgetary decision-making condition is a "don't care" condition.

Discussion: tasks and accountability

In this article, we examined the relationship between network governance configurations and being vested with rule-enforcement tasks. We find three main configurations which are unique to rule-enforcing networks. Each one of the configurations follows a different accountability approach, however, they are all more likely to have rule-making capacities. This points to the cumulative nature of regulatory tasks, where the type of tasks that networks execute accumulate incrementally from information-sharing, to rule-making, through rule-enforcing (Slaughter 2004).

The three accountability approaches are: democratic, where elected officials vote in the network's plenary; pure legal, when NAOs include only a board of appeals; and legal-administrative, where—in addition to having a board of appeals—the network's plenary includes experts and the NAO's executive reports to a strong board. In addition, we find: democratic accountability in rule-enforcing networks for whom setting rules is a core condition; pure legal accountability in rule-enforcing networks that set rules too (but not as a core condition); and legal-administrative accountability in rule-enforcing networks that may or may not include rule-making capacities .

Interestingly, the democratic configuration (which is only represented by European Medicines Agency) is the only one among rule-enforcing networks to include rule-making as core condition. Networks with rule-making capacities require democratic oversight, since democratic accountability is specifically suitable when creating new laws and norms (Koliba et al. 2011). The other two configurations include networks that do not have rule-setting tasks as a core condition but having a board of appeals is core, hence imply, at a minimum, a legal accountability approach (McGravey 2001; Koliba et al. 2011). Rule-enforcing is about applying rules, which requires impartiality, and networks which primarily and mostly execute such tasks adopt ex-post legal accountability (Villard Duran 2015). The difference between these two configurations is that the third type also includes an element of the administrative accountability approach (i.e. a strong board and experts in the plenary), thus its name: legal-administrative. Perhaps the most important distinction of this configuration is that the three main financial (i.e., insurances, banks, and securities) regulatory networks adopt it (in addition to the chemical regulatory agency ECHA). Two possible explanations are (a) that isomorphism occurred among the three of them as they were designed in parallel (DiMaggio and Powell 1991) or (b) that the financial sector requires the board to make a greater effort to cope with organizational complexity and risks that are more critical. Finance tends to stand out as a sector requiring greater oversight boards (Federo and Saz-Carranza 2018).

In comparison to networks that are not tasked to enforce rules, our findings point to the fact that, overall, rule-enforcing networks have more elaborate governance structures. For example, rule-enforcing network configurations involve, as core condition, having a board of appeals, or having parliamentary representatives on the plenary. Configurations of networks without rule-enforcing capacities all involve the absence of a board of appeals, and those that are not setting rules also do not have parliamentary representatives on the plenary.

We believe that this paper is one of the first studies to explore the particular governance configuration of EU regulatory networks in detail, precisely from a network perspective. This we believe is important for network scholarship (Isett et al. 2011), as well as for EU regulation scholarship (Blauberger and Rittberger 2014; Coen and Thatcher 2008; Tarrant and Kelemen 2017). We complement the former by further focusing on NAOs and the specifics of network governance and accountability, particularly on how tasks relate to accountability and structural governance mechanisms. In relation to the EU regulation literature, we complement it with a more micro approach. In particular, the effectiveness and impact of EU regulatory harmonization efforts may not

only have to do with member centrality (Maggetti and Gilardi 2011) or inter-dependencies among members (Van Boetzelaer and Princen 2012) but may also have to do with the tasks and governance structure of the regulatory network. Additionally, we open an avenue for new research on how network governance structure and tasks may affect member (i.e. NRA) autonomy (e.g. see Bach, Ruffing, and Yesilkagit 2015).

The main limitation of this paper is that it does not unpack causality. Indeed, the design and logic of this research does not allow to detail causality. Other main limitations include its regional focus on EU networks, its sectoral focus on regulatory (not executive) networks, and the fact that the methodology used is incapable of saying anything about the effect size of the relationships found. These limitations then point to future research possibilities: unravel causality, explore non-European trans-governmental networks, explore other types of public networks (beyond regulatory), and use different methodologies to study EU public networks. Notwithstanding, there is still plenty to learn about how networks deliver results in a globalized and fragmented world.

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APPENDICES

Table A1. Presence of rule-enforcement tasks

Conditions					Outcome		Consistency		Cases
1	**2**	**3**	**4**	**5**	**Present**	**Number**	**Raw**	**PRI**	
1	0	1	1	1	1	4	1	1	ACER, ESMA, EBA, EIOPA
1	0	0	1	0	1	1	1	1	CPVO
1	1	0	0	1	1	1	1	1	EMA
1	0	0	1	1	1	1	1	1	EASA
0	0	1	1	1	1	1	1	1	OHIM
1	1	1	1	1	1	1	1	1	ECHA
0	0	0	0	0	0	9	0	0	ENWHP, FRONTEX, ECAC, EPA, EEAC, ERGP, HMA, EUCPN, CEPOL
0	0	1	0	1	0	8	0	0	CEER, BEREC, IRG, IMPEL, EUROFOUND, FRA, EJN, EPRA
1	0	0	0	1	0	4	0	0	EU-OSHA, ERA, ENISA, EUROJUST
0	0	1	0	0	0	2	0	0	EFCA, EIGE
1	0	0	0	0	0	1	0	0	EUROPOL
0	1	0	0	0	0	1	0	0	EEA
0	1	0	0	1	0	1	0	0	EMCDDA
1	0	1	0	1	0	1	0	0	EMSA
0	1	1	0	1	0	1	0	0	ECDC

Table A2. Absence of rule-enforcement tasks

Conditions					Outcome		Consistency		Cases
1	**2**	**3**	**4**	**5**	**Absent**	**Number**	**Raw**	**PRI**	
0	0	0	0	0	1	9	1	1	ENWHP, FRONTEX, ECAC, EPA, EEAC, ERGP, HMA, EUCPN, CEPOL
0	0	1	0	1	1	8	1	1	CEER, BEREC, IRG, IMPEL, EUROFOUND, FRA, EJN, EPRA
1	0	0	0	1	1	4	1	1	EU-OSHA, ERA, ENISA, EUROJUST
0	0	1	0	0	1	2	1	1	EFCA, EIGE
1	0	0	0	0	1	1	1	1	EUROPOL
0	1	0	0	0	1	1	1	1	EEA
0	1	0	0	1	1	1	1	1	EMCDDA
1	0	1	0	1	1	1	1	1	EMSA
0	1	1	0	1	1	1	1	1	ECDC
1	0	1	1	1	0	4	0	0	ACER, ESMA, EBA, EIOPA
1	0	0	1	0	0	1	0	0	CPVO
1	1	0	0	1	0	1	0	0	EMA
1	0	0	1	1	0	1	0	0	EASA
0	0	1	1	1	0	1	0	0	OHIM
1	1	1	1	1	0	1	0	0	ECHA

Table A3. Networks Included in the Analysis

Sector	Networks	Year of initial collaboration	Year of Establishment	Staff	Budget 2011 (€)	Mandated / Voluntary
Economy & Finance	European Banking Authority (EBA)	2004	2009	100	12683000	Mandated
	European Insurance and Occupational Pensions Authority (EIOPA)	2003	2010	46	10667000	Mandated
	European Securities and Markets Authority (ESMA)	2001	2009	101	16962000	Mandated
	Office for Harmonization in the Internal Market (Trade Marks and Designs) (OHIM)		1994	730	50000000	Mandated
Employment, Social affairs & Culture	European Foundation for the Improvement of Living and Working Conditions (EUROFOUND)	1975	1975	113	20440000	Mandated
	European Institute for Gender Equality (EIGE)	2006	2006	23	5819800	Mandated
Energy & Transport	Agency for the Cooperation of Energy Regulators (ACER)	2000	2009	40	5119000	Mandated
	Council of European Energy Regulators (CEER)	2000	2000	150	1025000	Voluntary
	European Aviation Safety Agency (EASA)	1955	2002	600	139554113	Mandated
	European Civil Aviation Conference (ECAC)	1955	1993	14	2200000	Voluntary
	European Railway Agency – promoting safe and compatible rail systems (ERA)	2004	2004	500	25983000	Mandated
Environment	European Environment Agency (EEA)	1990	1990	217	50330092	Mandated
	European Environmental and Sustainable Development Advisory Councils (EEAC)	1990	1993	n/a	n/a	Voluntary
	Community Plant Variety Office (CPVO)	1995	1995	43	12000000	Mandated
	European Fisheries Control Agency (EFCA)	2005	2005	56	11013000	Mandated
	European Maritime Safety Agency (EMSA)	2002	2009	101	16962000	Mandated
	European Union Network for the Implementation and Enforcement of Environmental Law (IMPEL)	1990	1992	1	726000	Voluntary
	Network of the Heads of Environment Protection Agencies (EPA)		2003	1	n/a	Voluntary
Health	European Agency for Safety and Health at Work (EU-OSHA)	1994	1994	70	15372768	Mandated
	European Network for Workplace Health Promotion (ENWHP)	1996	1996	6	1085155	Voluntary
	European Medicines Agency (EMA)	1995	2002	600	208863000	Mandated

	Heads of Medicines Agencies (HMA)	1996	1996	n/a	n/a	Voluntary
	European Monitoring Centre for Drugs and Drug Addiction (EMCDDA)	1993	1993	100	15400000	Mandated
	European Centre for Disease Prevention and Control (ECDC)	2004	2004	270	58107183	Mandated
	European Chemicals Agency (ECHA)	2006	2006	129	86481700	Mandated
Justice & Law	The European Union's Judicial Cooperation Unit (EUROJUST)	2000	2002	186	31700000	Mandated
	European Judicial Network (EJN)	1998	2001	5	522000	Voluntary
	European Agency for the Management of Operational Cooperation at the External Borders (FRONTEX)	2004	2004	272	88410000	Mandated
	European Crime Prevention Network (EUCPN)	2001	2001	3	296552	Voluntary
	European Police College (CEPOL)	2005	2005	32	8300000	Mandated
	European Police Office (EUROPOL)	1995	1995	700	83949000	Mandated
	European Union Agency for Fundamental Rights (FRA)	2007	2007	7	20000000	Mandated
Services	Body of European Regulators for Electronic Communications (BEREC)	1997	2009	18	5500000	Mandated
	Independent Regulators Group (IRG)	1997	1997	2	472500	Voluntary
	European Network and Information Security Agency (ENISA)	2004	2004	47	8102920	Mandated
	European Platform of Regulatory Authorities (EPRA)	1995	1995	n/a	n/a	Voluntary
	European Regulators Group for Postal Services (ERGP)	2010	2010	2	n/a	Mandated