Organizing a Kingdom*

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Thursday 11th January, 2024

Abstract

We develop a framework that examines the organizational challenges faced by central rulers when delegating administrative authority over rural areas and towns to local elites. We highlight two key mechanisms that describe how shifts in the economy can lead to institutional change: First, as towns' economic potential grows, (e.g., due to the Commercial Revolution), their inefficient administration by outsiders (i.e., landed elites) leads to higher losses for the ruler. Thus, the ruler grants self-governance to towns, allowing urban elites to better adapt to local shocks (trade opportunities). Second, in order for self-governing towns to coordinate their choices with the ruler's interests, they need to receive reliable information about shocks to the kingdom (e.g., war threats). To ensure effective communication, the ruler informs towns directly in central assemblies. Overall, this process increases the weight given to urban elites' preferences in decisions made by all stakeholders. Our framework can explain the emergence of municipal autonomy and towns' representation in parliaments throughout Western Europe in the early modern period. We also discuss how the model applies to other historical dynamics, and to alternative organizational settings.

Keywords: institutions, administration, cities, parliament.

JEL Classification Numbers: D02, D72, D73, N43, N93, O43

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1 Introduction

Ever since the formation of centrally organized polities, competing groups have vied for influence over their political institutions. This contest for power spans from the dominance of military and landed elites in ancient and medieval times, to the rise of merchant elites in the early modern period, and later on, the prominence of financiers and industrialists during the modern age. A substantial body of research has shed light on the way elites design institutions (North, Wallis, and Weingast, 2009), and on specific mechanisms through which different groups can gain political power, such as responding to threats of revolt (Acemoglu and Robinson, 2001), or addressing the need to fund public goods (Lizzeri and Persico, 2004).

In this paper, we expand on this literature by examining the challenges faced by a central authority through an organizational lens. This approach provides a novel rationale to explain how different groups can gain access to political institutions. We show that as a group becomes economically more important, a central ruler may choose to delegate more administrative power to them, capitalizing on their economic potential. The administrative empowerment of a group, in turn, necessitates the establishment of a direct communication channel with the center in order to coordinate decision-making. This can involve the inclusion of the group's representatives in general assemblies, lifting the group into the circle of power-holders.

We illustrate these forces with the institutional dynamics that unfolded in Western Europe following the Commercial Revolution of the 11th-13th centuries. During this period, monarchs granted administrative control over merchant towns to urban elites, separating town jurisdictions from the control of the landed elite (Downing, 1989; Van Zanden, Buringh, and Bosker, 2012). At the same time, monarchs reconfigured central assemblies by summoning town representatives. This was the birth of parliaments – a blueprint for Western Europe's institutional framework that promoted state-formation and economic growth throughout the centuries to come (Acemoglu, Johnson, and Robinson, 2005; Acemoglu and Robinson, 2012; Angelucci, Meraglia, and Voigtländer, 2022).

Key to our analysis are the organizational challenges that centralized rulers faced in governing vast territories (Greif, 2008). The first challenge involves the choice to delegate administrative control over localities to specific groups. Delegating town administration to local urban elites allows them to adapt to their specific conditions and needs, fostering urban economic growth. However, the proliferation of local administrations can clash with the second challenge: establishing an effective system of communication to coordinate collective action and tackle external threats. Creating separate jurisdictions controlled by local elites has the potential to hamper overall coordination within the polity, especially when ruler and elites have heterogeneous preferences over policies. This trade-off between adaptation and coordination is at the heart of our model, allowing us to explore how rulers allocate control over local administrations to different elites and design communication structures to effectively manage interactions between the center and localities.

In the model, a ruler interacts with a rural (landed) elite and an urban elite (merchants). Each elite makes economic decisions that need to be adapted to a common state (e.g., external war threats), but also to their own local states (e.g., local economic conditions). In addition, the elites benefit from coordinating their decisions with each other. For example, merchants and nearby rural producers may agree on which commodities to specialize in – if sheep herding is important, merchants may want to trade wool. Local administrations shape these economic decisions by designing rules and regulations. When delegating control over local administrations to the elites, the ruler takes into account both the relative economic potential of each elite and the weight that they assign to the common state. A possibility available to the ruler is for one elite to govern the other's territory, anticipating that each elite will use their control to serve their own interests. For example, if landed elites govern towns, they may impose market regulations to favor the trade of local wool, even if merchants could profit more from trading wine or silk from abroad.

The ruler, who possesses superior information about the common state, must also decide how to share this information with the urban and landed elites. One option is to communicate solely with one elite, relying on them to inform the other elite. For example, the ruler may summon only the landed elite to assemblies and rely on them to inform the merchants about the common state. This option is cost-effective, for instance because it reduces the number of individuals who need to travel long distances, thus minimizing delays in decision-making. However, it poses the risk that the elite acting as an intermediary may manipulate information for their own advantage and hurt overall coordination within the polity. Alternatively, the ruler engages in direct communication with both elites, retaining control over information transmission but incurring substantial costs.[1]

[1]In the applications we are interested in, establishing an extra direct communication link with a locality could be a costly endeavor for all parties concerned. This was often due to high transportation costs, the requirement for local communities to organize the selection of representatives, and the central government's need to dispatch central officials to the localities (see,

We find that shocks impacting the relative economic importance of urban and rural elites trigger a reorganization of both local administrations and communication between the center and localities. When towns are relatively unimportant, the ruler delegates control over both rural and urban administrations to the landed elite, who acts as the only point of contact with the ruler. Because the landed elite governs the town, they have no reason to manipulate the urban elite by misrepresenting the common state – they can simply set regulations to constrain merchants' actions. This leads to a high level of alignment with the policies favored by the landed elite, at the expense of the urban elite's preferences. As the economic importance of towns grows, the resulting efficiency losses become more severe. Eventually, the ruler finds it more efficient to let the urban elite run the town administration independently. The loss of administrative control by the landed elite means they can no longer be trusted to accurately convey information to the urban elite. For example, the landed elites could exaggerate the threat associated with an upcoming war in order to deter merchants from international trade in favor of domestic wool trade. To restore effective communication, the ruler *directly* communicates with the urban elite, for instance by summoning them to a central assembly. This dual institutional process forces the landed elite to accommodate the urban elite's interests. In summary, an exogenous increase in the economic potential of towns leads to their administrative autonomy from the surrounding landed elite, direct communication with the ruler, and more influence on policy-making.

In addition to the economic importance of rural vs. urban areas, these institutional dynamics are also affected by players' preferences concerning the common state. For example, granting administrative autonomy to the urban elite can be an attractive option for the ruler when all parties place similar importance on the common state. This is because administrative autonomy does not significantly undermine coordination between local elites. Another scenario where administrative autonomy becomes tempting is when the landed elite prioritizes the common state, while the urban elite puts a high weight on local conditions. Letting the landed elite run these towns would significantly hamper the urban economy. Therefore, granting autonomy

for instance, Kleineke, 2007; Chiovelli, Fergusson, Martinez, Torres, and Valencia Caicedo, 2023). On the other hand, opting for a single elite to act as an intermediary proved to be a more economical approach. This is because the two local elites were already in frequent contact while performing various other local administrative tasks (for example, handling contractual disputes in shire courts in the case of England – see Harding, 1973). These forces were strongest in localities situated at a considerable distance from the central authority, as exemplified by 16th-century Spanish America. Evidence indicates that the Spanish crown deliberately restricted direct communication with colonial towns, favoring a mode of communication mediated by provincial officials to economize on towns' costs (Mauro, 2021). See Section 6 for further details.

to the towns can be a net-beneficial countermeasure, even if it reduces coordination with the center.[2]

In an extension, we assume that the ruler must coordinate an action with the elites but lacks knowledge of their local conditions. This analysis allows us to more fully capture the role of central assemblies, namely that of transferring information not only from the center to the localities but also in the opposite direction. Our findings closely align with the baseline model: As towns become more important, they gain administrative autonomy from the landed elite. Consequently, it becomes key for the ruler to establish direct communication channels with the urban elite to acquire more accurate information about local conditions.

Overall, this paper introduces a framework that emphasizes the impact of economic changes on the structure of local administrations and how these changes affect the ability of various groups and interests to influence central policy-making and collective action. We demonstrate the relevance of our framework by applying it to diverse historical contexts where rulers faced the challenge of organizing polities that varied in size and heterogeneity of preferences. These contexts include early modern Western Europe, colonial Spanish America, and ancient Rome. More broadly, the model we propose offers novel insights for the literature examining the various steps underpinning the complex processes of state and institution building.

Related Literature. Our paper introduces core insights from organizational economics in the literature on political economy and institutions. We build upon the organizational economics models of coordinated-adaptation developed by Alonso, Dessein, and Matouschek (2008) and Rantakari (2008), who study the optimal allocation of decision authority and design of communication structures within multi-divisional firms.[3] Our analysis contributes to theirs by considering a scenario where the center has private information about a state of nature of interest to all, and by investigating different modes of communication, some of which involve sequential information aggregation. This modified framework captures the institutional setting of interest, where central assemblies with town representatives replaced the previous system of communication that relied on landed elites acting as intermediaries between the ruler and urban elites. In Section 7, we come full circle, by discussing the relevance of our framework to the study of modern organizations.

[2] Ancient Rome provides an illustration of this scenario. There, landed and military elites were deployed to govern distant provinces. The geographic distance accentuated the differences in preferences compared to those of the local inhabitants. The officials frequently burdened local communities with substantial costs, compelling Rome to grant administrative autonomy to provincial towns (France, 2021). In line with our argument, and as discussed in Section 6, these privileged towns were allowed to send representatives to Rome to communicate with the central government (Fernoux, 2019).

[3] For a related setting, see also Dessein and Santos (2006).

We contribute to the body of work that looks at the rise of the merchant class and the associated western institutional dynamics. In the context of a city-state, Puga and Trefler (2014) document how international trade led to the ascent to political power of the Venetian merchant class. We study a similar question, but in the context of a large kingdom in which delegation of administrative power and communication between the center and the localities are key. Our emphasis on elites' local administrative power also connects our work with Barzel (1989), González de Lara, Greif, and Jha (2008), and Greif (2008). We contribute by formalizing the interplay between local administrations and 'nation-wide' institutions such as parliaments. Further, we complement Acemoglu et al. (2005), who find that the extent of merchants' political power before 1500 mattered in the context of the rise of Atlantic Trade. Our model offers a mechanism whereby merchant elites can gain nationwide political clout by controlling local administrations.

As previously highlighted, our focus on institutional change connects our research with studies exploring how various groups compete for influence over political institutions (Acemoglu and Robinson, 2001; Lizzeri and Persico, 2004; North et al., 2009). We contribute by providing a framework that emphasizes how economic changes alter the structure of local administrations, determining the inclusion of different elites in general assemblies to facilitate information sharing and collective action. In this regard, our framework sheds light on the important interplay between local and nation-wide institutions.

We also contribute to the large literature on the role played by assemblies in governing polities. In Levi (1988) and North and Weingast (1989), assemblies discipline rulers. In Myerson (2008), an assembly raises rulers' credibility by exposing them to potential collective punishments in case of opportunistic behavior.[4] Unlike in Myerson (2008), in our setting information sharing in an assembly does not act as a commitment device for rulers, but rather as a mechanism to have local administrations adapt to and coordinate on common objectives. Our argument is in line with Root (1994), Barzel and Kiser (1997), and Epstein (2000), who state that parliaments were created by monarchs to coordinate the behavior of autonomous jurisdictions.

Our work is further related to the literature that examines the functioning of assemblies and legislatures. In Weingast and Marshall (1988), assemblies enable representatives to bargain over policies. In our model, even though representatives do not hold agenda-setting authority, they accommodate each other to achieve some degree of coordination. We are especially related to the strand of this literature that highlights the

[4] For a related reasoning, see Fearon (2011).

importance of information acquisition in legislative committees (Gilligan and Krehbiel, 1987, 1989, 1990; Krehbiel, 1991; Baron, 2000; Dewan, Galeotti, Ghiglino, and Squintani, 2015). Our approach takes into consideration the interdependence between membership in the legislature and administrative control.

Finally, this paper is related to the literature on federalism (Tiebout, 1956; Oates, 1972), in particular the strand that studies the pros and cons of decentralizing government functions in emerging economies (Treisman, 1999; Bardhan and Mookherjee, 2000; Bardhan, 2002; Bardhan and Mookherjee, 2006), as well as the literature on the determinants of state capacity (e.g., Besley and Persson, 2009, 2010). In our setting, centralization is not feasible. The ruler cannot govern the localities by appointing state bureaucrats and must instead rely on local elites, who are motivated to run local administrations for their own advantage.[5] Because some elites have preferences that align more closely with those of the central ruler than others, delegating administrative authority to one elite or the other generates trade-offs that are reminiscent of centralization vs decentralization decisions. Our work is also connected to the literature on the size of nations (see Alesina and Spolaore, 1997, 2003, for early contributions), even though we take boundaries as given. Much like this body of work, in our setting greater administrative concentration can foster policy coordination. However, this concentration might also have drawbacks, particularly in potentially clashing with local preferences.

The rest of the paper is structured as follows. Section 2 describes the model, followed by its analysis in Section 3. Section 4 offers a further discussion of our modeling approach Section 5 presents an extension of the model. In Section 6, we examine our main historical application of medieval and early modern Western Europe, as well as institutional dynamics in ancient Rome and Spanish America. Section 7 concludes.

2 Model

Players and Actions. Our model consists of three players: a principal P and two agents A_i, who belong to the landed or town elite, as indicated by $i = \{L, T\}$. Given the historical context, we refer to the principal as the 'ruler' (i.e., king or queen). The two elites A_i inhabit the corresponding administrative units D_i, representing rural areas and towns, respectively. Specifically, we think of D_L as the rural part of a county, and D_T as a town within this county. Correspondingly, A_L and A_T are *local* elites. Each elite chooses an

[5] Our work is also related to Martinez-Bravo, Padró i Miquel, Qian, and Yao (2022). In their setting, allowing a local community to choose its public officials enhances the accountability of those officials. However, it also diminishes the central authority's control over policy-making. One key difference with their setting is our focus on analyzing the communication structure that arises within the polity to ensure coordination, i.e., we connect administrative autonomy to representation in central assemblies.

action a_i, reflecting their own economic activity. Moreover, to each administrative unit D_i corresponds a regulatory decision r_i, which we interpret as the administration of the unit. For example, r_T reflects market rights, adjudication of disputes, and other regulations of town business.

P allocates the right to make the regulatory decision r_i to either A_i or A_j, for $i, j \in \{L, T\}$. This includes the possibility that rural elites govern towns, and vice versa. By contrast, the local economic action a_i is inalienable. For example, the effort exerted in trading activities (a_T) is chosen by town merchants (A_T) and cannot be directly selected by landed elites (A_L). However, we will see below that if landed elites are in control of town regulation, they can use this to influence the choice of a_T by A_T. Note that our model does not allow P to directly choose the regulatory decisions in the local units. This reflects the historical reality that territories were typically too large for rulers to directly govern all areas of the realm, especially given the inefficient bureaucracies at the time. In other words, medieval and early modern rulers had no choice but to delegate administrative power. However, we do assume that the ruler can choose *which* local elite is responsible for making administrative decisions, as documented by the rich historical records of royal grants delegating administrative power (see references in Angelucci et al., 2022). Our analysis is thus relevant to situations in which a ruler has a degree of control over a sizable territory. Prominent examples include the various polities forming in Western Europe during the medieval and early modern periods (see Section 6).

Information Structure. Players care about the realization of three different, independently distributed, states of nature: θ_P, θ_L, and θ_T, with $\theta_P \sim U\left[-\overline{\theta}, \overline{\theta}\right]$ and $\theta_i \sim U\left[-\underline{\theta}, \underline{\theta}\right]$, for $i = \{L, T\}$. In our baseline model, P is privately informed about the realization of θ_P, but the realizations of θ_L and θ_T are publicly observable, i.e., known to P, A_L, and A_T. This is the simplest case of the organization-communication problem that we analyze. It implies that information flows only top-down, with the ruler informing local elites about the state of the realm θ_P. For example, rulers often possessed insider knowledge about war threats due to the intricate networks of the European nobility. In an extension, we also analyze the case where θ_L and θ_T are known to both elites but not to P, and communication occurs bottom-up. Thus, in both the baseline model and the extension, we continue with the assumption that local elites are aware of each other's local states, primarily because of their close geographical proximity (i.e., their location in the same county). For example, in 13th century England, county officials in charge of tax collection were local landholders and thus 'had personal knowledge of men and conditions [in the localities]' (Mitchell, 1951, pp. 69-70). Finally, we assume $\underline{\theta} < \overline{\theta}$ (**A1**), which simplifies our analysis of communication.

Communication. P chooses whether to set up a *direct* communication channel with A_i, for $i \in \{L, T\}$. Under direct communication, P reports *hard* evidence about θ_P at a cost. In the historical context, this reflects summoning A_i to Parliament, which was costly not only because it required extensive travel, but also because it took time, delaying decision making (see, for instance, Stasavage, 2011; Mazín, 2013; and footnote 1). Parliament was an opportunity for the ruler to present evidence on the state θ_P to representatives of the localities, who were assembled 'to hear and to do' what was revealed to them by monarch and royal officials (Mitchell, 1951, p. 226). For example, in 1346, a detailed French plan for the invasion of England fell into English hands and was read in Parliament (Harriss, 1975, p. 316).[6] This motivates our simplifying assumption that vertical (top-down) communication reports *hard* information regarding θ_P. In contrast, horizontal communication between the two elites is *soft* and thus subject to cheap talk: A_L and A_T can communicate with each other at no cost about θ_P. If P communicates directly with only one elite – i.e., only one elite is summoned to Parliament – the informed elite A_i sends a message $m_i \in \left[-\overline{\theta}, \overline{\theta}\right]$ to A_j. We assume that P cannot stop elites from communicating with each other. This captures the fact that, in practice, local elites could easily and costlessly communicate due to their close proximity. We refer to an outcome in which A_j receives information about θ_P through A_i as *indirect* communication between P and A_j.

As mentioned earlier, and in line with the historical records, in an extension we consider a scenario in which Parliament serves as a forum for elites to inform the ruler about local conditions.[7]

Governance Structure. P chooses the administrative and communication structure: $\mathbf{g} = \{R_L, R_T, C_L, C_T\}$, where $R_L \in \{L, T\}$ and $R_T \in \{L, T\}$ denote the identity of the elite (either A_L or A_T) to whom P delegates decision rights over local regulation r_L and r_T, respectively. For example, $R_T = L$ means that town regulations r_T are chosen by the landed elite A_L. $C_L \in \{0, 1\}$ and $C_T \in \{0, 1\}$ denote com-

[6] Often, prominent figures like high-ranking officials (for instance, those returning from military campaigns), were called upon to provide testimony regarding important issues (Harriss, 1975, p. 344).

[7] In this case, the cost to the ruler of direct communication with both elites, as opposed to communication mediated by one of the two elites, could capture in reduced form the cost associated with processing information from multiple sources (see for instance Mauro, 2021, p. 233).

munication: they take value 1 if P opens a direct communication channel with A_L or A_T, respectively. As an illustration, consider $\mathbf{g} = \{L, L, 1, 0\}$. In this configuration, A_L controls regulation in both the rural area and in the town, and L is also the sole elite to communicate directly with P. A historical example is a sheriff ("shire-reeve," who was typically part of the landed elite) being in charge of $i)$ the regulation throughout the shire, including towns, and $ii)$ communication between center and localities via shire courts.

We define as *i-Integration* the allocation of decision rights in which A_i controls regulatory decisions in both units. We define as *Separation* the allocation of decision rights such that A_i controls r_i, for $i \in \{L, T\}$ – that is, each elite chooses the regulatory decision within their own unit. The corresponding historical example is merchant towns obtaining royal grants of self-governance, effectively separating their jurisdiction from the surrounding shire and putting the merchant elites in charge of local regulations.[8]

Payoffs. The ex-post payoff of elite A_i is given by the following loss function:

$$U_i(\gamma_i) = -k_i \left\{ (1-\rho) \underbrace{[\gamma_i \theta_P + (1-\gamma_i)\theta_i - a_i]^2}_{\text{Adaptation to } A_i\text{'s ideal point}} + \rho \left[(1-\lambda) \underbrace{(r_i - a_i)^2}_{\text{Internal Coord.}} + \lambda \underbrace{(a_j - a_i)^2}_{\text{External Coord.}} \right] \right\}, \quad (1)$$

where $k_i \geq 0$ is a measure of unit D_i's economic importance. Similar to Rantakari (2008), A_i's expected loss depends $i)$ on the degree of *adaptation*, and $ii)$ on both *internal* (intra-units) and *external* (inter-units) coordination. In particular, the adaptation term captures A_i's loss when he is unable to match his economic action to his 'ideal point' $(1-\gamma_i)\theta_i + \gamma_i \theta_P$ – a weighted mix of the local state θ_i and the common state θ_P, where the parameter $\gamma_i \in [0, 1]$ denotes the weight that A_i attaches to the common state relative to the local state. This parameter differs across players, as it reflects the extent to which they are affected by shocks to the realm. Next, internal coordination reflects the loss that results if the local economic action a_i is not aligned with the local regulation r_i. For example, if market regulation in towns (r_T) imposes high taxes on silk, then choosing an economic activity a_T that relies heavily on silk trade will imply a larger loss than trading goods with low tax rates. Finally, external coordination represents the need to coordinate economic activities a_i and a_j across units. For example, if the countryside produces wool, then both elites can benefit if the town merchants trade the wool produced locally. The parameter $\rho \in [0, 1]$ represents the importance of

[8] See Angelucci et al. (2022) and references therein. In Section 4, we offer a brief discussion of an additional structure (*Cross-Separation*), in which A_i controls r_j but not r_i.

(overall) coordination versus adaptation, and λ reflects the relevance of external vs. internal coordination.[9] As will become clear below, an elite A_i will only suffer internal coordination losses when the regulation of their unit is chosen by the other elite. For example, if the landed elite runs the town administration, they can impose regulations r_T that favor the trade of their own rural produce, even if the town elite could make much higher profits by trading international goods.[10]

Further, P's ex-post payoff is:

$$U_P = -\sum_{i\in\{L,T\}} k_i \Bigg\{ (1-\rho) \underbrace{\left[\gamma_P\theta_P + (1-\gamma_P)\,\theta_i - a_i\right]^2}_{\text{Adaptation to } P\text{'s ideal point}} + \\ + \rho \left[(1-\lambda) \underbrace{(r_i - a_i)^2}_{\text{Internal Coord.}} + \lambda \underbrace{(a_j - a_i)^2}_{\text{External Coord.}} \right] \Bigg\} - F\left(C_L, C_T\right), \tag{2}$$

where $\gamma_P \in [0,1]$ denotes the weight that P attaches to the common state relative to the local state. Given agents' decisions r_i and a_i, P internalizes the loss generated by *both* units, weighting each by the relative economic importance of the unit, k_i. $F(\cdot)$ denotes the fixed cost of setting up a direct communication channel with the elites, with $F(1,1) = 2f > F(1,0) = F(0,1) = f > F(0,0) = 0$. For simplicity, the cost of communication is borne entirely by P.

Regarding the weights that different players assign to the common state, and regarding the economic importance of rural versus urban areas, we make the following assumptions:

A2: $\gamma_P \geq \gamma_L \geq \gamma_T$

A3: $k_L \geq k_T$

A2 states that, relative to elites' preferences, P is (weakly) biased in favor of the common state. This reflects the intuitive idea that rulers assign a greater weight on the common state compared to local actors. **A2** also implies that the landed elite's preferences for the common state align more closely with those of

[9] We assume for simplicity that the weights ρ and λ are identical for all players. We also note that our setting coincides with Rantakari (2008)'s when setting $\gamma_P = \gamma_L = \gamma_T = 0$ and $\lambda = 1$, meaning that players do not attach any weight to the common state nor wish to coordinate regulatory and economic actions.

[10] Internal coordination losses can also be thought of as capturing the social cost of having a community be run by outsiders. For example, towns in medieval times would frequently complain about the behavior of officials who were not townsmen (see Cam, 1963; Carpenter, 1976, for the case of medieval England).

the ruler, as compared to the town elites' preferences. This is motivated by the historical fact that landed elites were medieval rulers' military force and would thus benefit (or suffer) from wars more immediately than town merchants (Harriss, 1975, p. 98).[11] Finally, **A3** assumes that the landed economy is (weakly) more important than the urban economy. Together, **A2** and **A3** ensure that if the ruler delegates control over regulatory decisions to one elite over both units, she will opt for the landed elite.

We further assume:

$$\textbf{A4: } \rho = \tfrac{1}{2} \text{ and } \lambda = \tfrac{1}{2}.$$

A4 allows us to focus on the variables of interest – i.e., the size of the two units (k_L and k_T) and players' preferences for the common state (γ_P, γ_L and γ_T) – in determining the equilibrium governance structure.[12]

Timing. Players interact for one period. The timing of the game is as follows:

1. P chooses the governance structure $\mathbf{g}$ and incurs the associated costs of communication;
2. P learns θ_P. All players learn $\{\theta_L, \theta_T\}$;
3. P communicates with elites A_i in accordance with $\mathbf{g}$;
4. If $C_i = 1$ and $C_j = 0$, A_i sends a message m_i to A_j, for $i, j \in \{L, T\}$ and $i \neq j$;
5. The two elites simultaneously choose $\{r_i, a_i\}_{i\in\{L,T\}}$ in accordance with $\mathbf{g}$;
6. Payoffs realize.

Our solution concept is Perfect Bayesian Equilibrium. Within this set of equilibria, in the case of *i-Integration*, we focus on the equilibrium that maximizes the expected payoff of the player who controls both regulatory decisions.[13] Further, in the cheap-talk game, we focus on the most informative equilibria.

3 Analysis

To highlight the basic trade-offs between *Integration* and *Separation*, we first analyze the case in which the common state θ_P is publicly observable. Thus, P allocates regulatory control over both units $\{R_L, R_T\}$,

[11] Of course, the latter could also be influenced by wars, for example if international trade routes were affected. The more important such ramifications were, the closer is γ_T to γ_L.

[12] We are able to solve the model absent **A4**, but comparisons of expected payoffs become cumbersome, as we also have to consider comparative statics for ρ and λ.

[13] One microfoundation of this equilibrium selection is an alternative sequential timing whereby regulatory decisions are taken before elites choose their economic activity.

but she does not need to choose the communication structure $\{C_L, C_T\}$. This allows us to understand the role played by units' relative size (k_L/k_T) and players' preferences (γ_P, γ_L, and γ_T) in determining P's preferred allocation of regulatory control. We then solve the model of incomplete information and study how the allocation of decision rights over local regulations interacts with the structure of communication between P and the elites.

3.1 The Complete Information Benchmark

Suppose the common state θ_P is observable to *all* players. In this case, P's sole choice is to allocate decision rights over regulatory decisions r_T and r_L between A_L and A_T. In what follows, we separately analyze the two possible governance structures, *Integration* and *Separation*, and derive the regulatory decisions and economic actions made by the elites in equilibrium, along with the players' corresponding payoffs. We then compare P's expected payoff under these two structures to determine her preferred governance structure. The trade-offs analyzed in this benchmark are similar to those in Alonso et al. (2008) and Rantakari (2008).

Integration. Suppose P allocates control over both regulatory decisions to a single elite, A_i. Formally, P sets $\{R_L, R_T\} = \{i, i\}$, for $i \in \{L, T\}$. We compute the regulatory decisions and economic actions that the elites choose in equilibrium. Given the elites' preferences stated in (1), and ignoring for the moment the choice of the regulatory decision r_j (which, under *Integration*, is also made by A_i), the three first-order conditions (FOCs) corresponding to the elites' optimization problems are:

$$r_i\,(i,i) = a_i\,(i,i)\,, \tag{3}$$

$$a_i\,(i,i) = \frac{2}{3}\underbrace{[\gamma_i\theta_P + (1-\gamma_i)\,\theta_i]}_{A_i\text{'s ideal point}} + \frac{1}{3}\mathbb{E}_i\,(a_j)\,, \tag{4}$$

$$a_j\,(i,i) = \frac{1}{2}\underbrace{[\gamma_j\theta_P + (1-\gamma_j)\,\theta_j]}_{A_j\text{'s ideal point}} + \frac{1}{4}\mathbb{E}_j\,(a_i) + \frac{1}{4}\mathbb{E}_j\,(r_j)\,. \tag{5}$$

Equation (3) states that the elite with control over both regulatory decisions, A_i, sets his own unit's regulatory decision equal to his own economic action in order to ensure perfect internal coordination. Equations (4) and (5) state that each elite sets their economic action to target a convex combination of three elements: i) their ideal point; ii) their conjecture about the other elite's economic action; and iii) their conjecture about the regulatory decision within their own unit (which is relevant only for A_j, as A_i chooses regulation r_i himself).

In addition, A_i chooses unit D_j's regulatory decision r_j. To solve for all four decisions' equilibrium expressions, we proceed in two steps.[14] First, we solve for the optimal choices of economic actions a_i and a_j by taking r_j as given. Second, we minimize A_i's expected loss in (1) with respect to r_j, plugging in the solutions for a_i and a_j computed in the first step. It follows that, in equilibrium, elites set $r_L(\boldsymbol{g}), r_T(\boldsymbol{g}), a_L(\boldsymbol{g})$, and $a_T(\boldsymbol{g})$:[15]

$$r_i(i,i) = a_i(i,i) = a_j(i,i) = (1-\gamma_i)\,\theta_i + \gamma_i\theta_P, \tag{6}$$

$$r_j(i,i) = 3(1-\gamma_i)\,\theta_i - 2(1-\gamma_j)\,\theta_j + [3\gamma_i - 2\gamma_j]\,\theta_P, \tag{7}$$

for $i,j \in \{L,T\}$ and $i \neq j$. From (6) and (7), we see that A_i exploits his control over regulatory decisions in both units to achieve perfect *internal* and *external* coordination. Specifically, A_i designs r_j to induce A_j to choose an economic action a_j that matches A_i's ideal point. To achieve this goal, the regulation r_j puts positive weight on θ_i, a weight on θ_P that takes into account the difference in A_i and A_j's preferences towards the common state (γ_i and γ_j), and a negative weight on θ_j. By doing so, A_i obtains the highest possible payoff (i.e., zero loss: $U_i = 0$). The observation that $U_i = 0$ under *i-Integration* and complete information about θ_P will later explain why an elite who controls both regulatory decisions will have incentives to truthfully communicate θ_P to the other elite.

An *i-Integrated* governance structure implies perfect internal coordination within unit D_i and perfect external coordination between the two units around elite A_i's ideal point. Note that *i-Integration* comes with a loss for A_j, as his optimal action a_j (given the regulation r_j imposed by A_i) deviates from A_j's ideal point.

Next, we turn to the ruler's expected payoffs under *i-Integration*. Given $\text{Var}(\theta_L) = \text{Var}(\theta_T) = \frac{\theta^2}{3}$ and

[14] The procedure is equivalent to solving a sequential game in which regulatory decisions are chosen before economic actions.

[15] Throughout, we report the governance structure $\mathbf{g}$ chosen by P as an argument of the equilibrium actions set by the elites $r_L(\boldsymbol{g}), r_T(\boldsymbol{g}), a_L(\boldsymbol{g})$, and $a_T(\boldsymbol{g})$. For instance, in the complete information game, $a_T(L,L)$ denotes the equilibrium economic action chosen by A_T when $\boldsymbol{g} = \{L,L\}$ – i.e., when P chooses *L-Integration*.

$\text{Var}(\theta_P) = \frac{\bar{\theta}^2}{3}$, from (2), it follows that P's expected payoff is equal to:

$$U_P(i,i) = -\left\{\frac{k_i}{2}(\gamma_P - \gamma_i)^2 + \frac{k_j}{2}\left[3(1-\gamma_i)^2 + 2(1-\gamma_j)^2 + (1-\gamma_P)^2\right]\right\}\frac{\theta^2}{3} + \\ -\left\{\left[\frac{k_i}{2} + \frac{k_j}{2}\right](\gamma_P - \gamma_i)^2 + k_j(\gamma_i - \gamma_j)^2\right\}\frac{\bar{\theta}^2}{3}. \tag{8}$$

Finally, under *i-Integration*, which elite should the ruler choose to exert regulatory control over the other? Given our assumptions **A2** and **A3**, P (weakly) prefers to allocate regulatory authority to A_L over A_T. This occurs both because A_L is the elite whose preferences are (weakly) closer to P's and because the rural economy is at least as important as the urban economy (i.e., $k_L \geq k_T$). This statement is proven in the following lemma.

Lemma 1. *P weakly prefers L-Integration to T-Integration, $\forall k_T \leq k_L$.*

Proof. See Appendix A. □

Separation. Suppose now that P lets each elite choose their unit's regulatory decision. Formally, P sets $\{R_L, R_T\} = \{L, T\}$. The first-order conditions associated with each elite's problem are:

$$r_i(i,j) = a_i(i,j) = \frac{2}{3}(1-\gamma_i)\theta_i + \frac{2}{3}\gamma_i\theta_P + \frac{1}{3}r_j. \tag{9}$$

Thus, under *Separation*, both units achieve perfect internal coordination ($r_i = a_i$). Solving for the corresponding system of linear equations leads to the following equilibrium decisions:

$$r_i(i,j) = a_i(i,j) = \frac{3}{4}(1-\gamma_i)\theta_i + \frac{1}{4}(1-\gamma_j)\theta_j + \left[\frac{3}{4}\gamma_i + \frac{1}{4}\gamma_j\right]\theta_P. \tag{10}$$

These decisions reflect a process of adaptation (of each elite to its own ideal point) and accommodation (to the other elite's ideal point) where the latter ensures some degree of coordination across units (see Rantakari, 2008). From (2) and (10), P's expected utility is:

$$U_P(L,T) = -\left\{ \frac{k_L}{2} \left[\left((1-\gamma_P) - \frac{3}{4}(1-\gamma_L) \right)^2 + \frac{1}{16}(1-\gamma_T)^2 \right] + \right. \tag{11}$$
$$+ \frac{k_T}{2} \left[\left((1-\gamma_P) - \frac{3}{4}(1-\gamma_T) \right)^2 + \frac{1}{16}(1-\gamma_L)^2 \right] + \left(\frac{k_L}{4} + \frac{k_T}{4} \right) \frac{1}{4} \left[(1-\gamma_L)^2 + (1-\gamma_T)^2 \right] \left. \right\} \frac{\theta^2}{3}$$
$$- \left\{ \frac{k_L}{2} \left(\gamma_P - \frac{3}{4}\gamma_L - \frac{1}{4}\gamma_T \right)^2 + \frac{k_T}{2} \left(\gamma_P - \frac{3}{4}\gamma_T - \frac{1}{4}\gamma_L \right)^2 + \left(\frac{k_L}{4} + \frac{k_T}{4} \right) \frac{1}{4} (\gamma_L - \gamma_T)^2 \right\} \frac{\bar{\theta}^2}{3}.$$

We make the following additional assumption:

A5: $\gamma_P \in [\gamma_L, \min\{\overline{\gamma}, 1\}]$, with $\overline{\gamma} \equiv \frac{15\gamma_L^2 + 7\gamma_T^2 - 22\gamma_L\gamma_T}{8(\gamma_L - \gamma_T)} > \gamma_L$.

In words, **A5** states that, all else equal, the weight γ_P the ruler places on the common state is not too high. If **A5** is violated, one can always find sufficiently high values for the variance of the common state such that P benefits from choosing *L-Integration* over *Separation* even for the urban area, because it ensures that decisions in the town are tailored to the common state. **A5** is a sufficient (but not necessary) condition for the result established in the following lemma.

Lemma 2. *Given assumptions* ***A1*** *to* ***A5****, P's expected loss associated with unit D_T is weakly lower under Separation than under L-Integration.*[16]

Proof. See Appendix A. □

Lemma 2 states that P's loss from the town's economy (D_T) – i.e., ignoring P's payoff from the rural economy (D_L) – is lower when the town elite (A_T) runs the urban administration. We are now in a position to state our main proposition concerning P's preferred governance structure taking into account the payoff derived from both units, and hence exploring the trade-off when comparing *L-Integration* to *Separation*.

Proposition 1. *In the game of complete information, there exists a threshold $\underline{k}$ for k_T, with $\underline{k}$ increasing in γ_P, such that:*

a) if $\underline{k} \le k_L$, P chooses L-Integration for $k_T \in [0, \underline{k}]$, and Separation for $k_T \in (\underline{k}, k_L]$.

[16]The result established in the Lemma may or may not hold when **A5** is violated. When Lemma 2 does not hold, P chooses *L-Integration* $\forall k_T$, with $k_T \in [0, k_L]$.

b) if $\underline{k} > k_L$, P chooses L-Integration $\forall k_T$.

Proof. See Appendix A. □

The comparison between both governance structures depends $i)$ on differences across the two units in terms of their size and $ii)$ on the configuration of players' preferences regarding the common state. For any feasible configuration of preferences, compared to *Separation*, *L-integration* prioritizes the payoff generated by unit D_L, for both the ruler and the landed elite A_L. *Integration* thus prevails when k_L is sufficiently large relative to k_T. Conversely, *Separation* allows for better adaptation to A_T's ideal point and better internal coordination in D_T, at the cost of less adaptation to A_L's ideal point in D_L. Moreover, *Separation* decreases the degree of coordination between the two units. This trade-off explains why the ruler may consider granting *Separation* when, all else equal, k_T is sufficiently large. In the context of our historical application, this result captures the wave of self-governance for merchant towns that occurred throughout Western Europe following the Commercial Revolution.

Whether *Separation* prevails as the size of the urban economy grows depends on the configuration of preferences regarding the common state. For most configurations of preferences, there exists a threshold on the size of the town such that the ruler chooses *Separation* when k_T exceeds the threshold (part a in Proposition 1). If the ruler places more importance on the common state (i.e., γ_P is larger), the threshold for choosing *Separation* over *L-Integration* increases. This is because the landed elite's preferences are closer to those of the ruler, so that having the landed elite in control results in decisions that better align with the common state.[17] However, there also exists a scenario in which *Separation* does not occur even when k_T approaches k_L (part b in Proposition 1). This corresponds to the case in which γ_P takes very high values, γ_T is neither too distant nor too close to γ_L, and Var (θ_P) is sufficiently large relative to Var (θ_i). Intuitively, this corresponds to a situation where the ruler's central aim is to have all decisions align with the common state, while agents' preferences are neither too homogeneous nor too different from each other.[18]

In summary, Proposition 1 states that, because the preferences of the landed elite are closer to the ruler's,

[17] The γ parameters enter the threshold $\underline{k}$, which defines cases $a)$ and $b)$ in Proposition 1.

[18] If agents' preferences are very similar ($\gamma_T \approx \gamma_L$), we are in case $a)$ where the ruler opts for *Separation* for sufficiently high values of k_T. This choice aims to improve adaptation around local states, while maintaining a sufficiently high degree of coordination on the common state. Similarly, if agents' preferences differ significantly, we are again in case $a)$, with the ruler also choosing *Separation* for sufficiently high values of k_T to prevent the landed elite from causing excessive internal mis-coordination in the town.

the urban economy must be significant enough for the ruler to allow the urban elite to govern the urban area. Figure 1 illustrates this trade-off by plotting the ruler's expected losses under *L-Integration* and *Separation*.

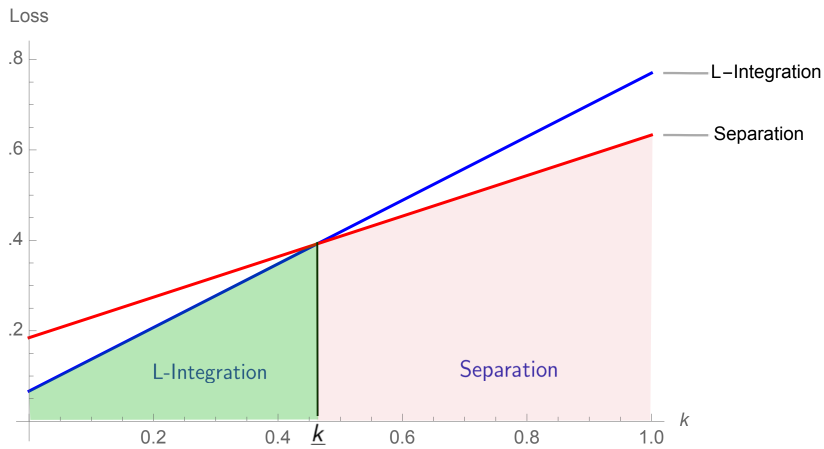


Figure 1: Trade-off between *L-Integration* and *Separation*

Note: The figure illustrates the ruler's expected losses under *L-Integration* and *Separation* as a function of k_T (the economic importance of the town), where k is defined as $\frac{k_T}{k_L}$, with k_L normalized to 1. The figure shows that the ruler's expected loss is lower under *L-Integration* (resp. *Separation*) for values of k_T lower (resp., higher) than $\underline{k}$.

3.2 The Game of Incomplete Information

In this section, we examine the general case in which P has private information about the common state θ_P. In this case, the allocation of decision rights over the regulatory decisions interacts with the selection of communication structures between the ruler and the elites, as well as between the elites. We show that the basic trade-off between *Separation* and *Integration* shown in Section 3 will carry over to the case of incomplete information, where we explore its consequences regarding the ruler's decision of whether and with whom to engage in direct communication about θ_P.

In what follows, we focus on the cases of *L-Integration* and *Separation*.[19] For each of these two cases, we distinguish between three possible communication structures: $i)$ 'no communication' with any of the two elites (i.e., $\{C_L, C_T\} = \{0, 0\}$), $ii)$ 'direct communication' with *both* elites (i.e., $\{C_L, C_T\} = \{1, 1\}$), and $iii)$ 'indirect communication', in which direct communication between P and A_i is followed by communication between elites, with A_i informing A_j about θ_P (i.e., $\{C_i, C_j\} = \{1, 0\}$). Figure 2, which we discuss in more detail below, illustrates the three communication structures.

[19]As we explain below, we can safely disregard the case of *T-Integration*.

3.2.1 L-Integration

Mirroring the complete information analysis, we first consider the case in which P allocates control over both units' regulatory decisions to the landed elite, A_L. Formally, P chooses $\{R_L, R_T\} = \{L, L\}$. As before, under *L-Integration*, the landed elite exploits its administrative control over the town to force the urban elite to coordinate their economic action on the landed elite's ideal point. However, the benefit the landed elite draws from being able to influence the urban elite via their control over the town's administration depends on what each elite knows about the common state θ_P.

No Communication. Suppose $\mathbf{g} = \{L, L, 0, 0\}$. In this instance, both A_L and A_T remain uninformed about the common state θ_P, and they have no choice but to act based on their prior belief. Because $\mathbb{E}_L(\theta_P) = \mathbb{E}_T(\theta_P) = 0$, it follows from (6) and (7) that:

$$r_L(L, L, 0, 0) = a_L(L, L, 0, 0) = a_T(L, L, 0, 0) = (1 - \gamma_L)\,\theta_L, \tag{12}$$

$$r_T(L, L, 0, 0) = 3(1 - \gamma_L)\,\theta_L - 2(1 - \gamma_T)\,\theta_T. \tag{13}$$

Plugging these decisions into P's expected utility gives:

$$\begin{aligned} U_P(L, L, 0, 0) = &- \frac{k_L}{2}(\gamma_P - \gamma_L)^2 \frac{\theta^2}{3} - \frac{k_T}{2}\left[3(1-\gamma_L)^2 + 2(1-\gamma_T)^2 + (1-\gamma_P)^2\right]\frac{\theta^2}{3} + \\ &- \left\{\left[\frac{k_L}{2} + \frac{k_T}{2}\right]\gamma_P^2\right\}\frac{\bar{\theta}^2}{3}. \end{aligned} \tag{14}$$

Comparing (14) and (8) reveals that P suffers from not communicating θ_P to the elites because it prevents A_L from being able to make decisions – or influence decisions by A_T – that are tailored to θ_P.

Direct Communication. Suppose now that P communicates with both elites. Formally, P sets $\mathbf{g} = \{L, L, 1, 1\}$. Except for the cost of communicating, this scenario is identical to the benchmark case of complete information studied above because P discloses verifiable information about θ_P. The actions chosen by the elites are given by (6) and (7), and P's expected payoff is given by (8), setting $i = L$ and $j = T$ and subtracting the cost of communication $F(1, 1) = 2f$.

Indirect Communication. Lastly, suppose that P discloses the value of θ_P to the elite in control of both regulatory decisions, A_L, who then sends a message m_L about θ_P to A_T. Formally, P sets $\mathbf{g} = \{L, L, 1, 0\}$. We first show that when A_L is in charge of both regulatory decisions, he will truthfully communicate θ_P to A_T (i.e., $m_L = \theta_P$). To see this, suppose that communication between A_L and A_T has already taken place and note that the FOCs corresponding to the elites' optimization problems are given by:

$$r_L(L, L, 1, 0) = a_L(L, L, 1, 0) = \frac{2}{3}[(1 - \gamma_L)\theta_L + \gamma_L \theta_P] + \frac{1}{3}\mathbb{E}_L(a_T), \tag{15}$$

$$a_T(L, L, 1, 0) = \frac{1}{2}[(1 - \gamma_T)\theta_T + \gamma_T \mathbb{E}_T(\theta_P \mid m_L)] + \frac{1}{4}\mathbb{E}_T(r_T \mid m_L) + \frac{1}{4}\mathbb{E}_T(a_L \mid m_L), \tag{16}$$

where $\mathbb{E}_T(\cdot \mid m_L)$ captures A_T's beliefs following the message m_L received from A_L. Moreover, A_L sets r_T so that A_T chooses a_T as close as possible to a_L.[20] If $m_L = \theta_P$, then the optimal actions are given by (6) and (7), where $i = L$ and $j = T$, which give A_L the highest possible payoff (i.e., zero loss). The following lemma formally states that A_L truthfully communicates θ_P to A_L in equilibrium.

Lemma 3. *Suppose P chooses L-Integration. Following communication between P and A_L, in the most informative equilibrium of the cheap-talk game between A_L and A_T, A_L truthfully reveals θ_P to A_T.*

Proof. The proof follows from (6) and (7), and by noting that A_L achieves his highest payoff ($U_L = 0$) by truthfully revealing θ_P. □

When in control of regulatory decisions in both units, A_L has an incentive to make A_T symmetrically informed about θ_P. By truthfully communicating the common state to A_T, A_L can better exploit his control over the regulatory decision in D_T to 'fully' steer A_T's economic action towards A_L's ideal point.

Having established that communication between A_L and A_T is truthful, it follows that P's expected payoff is given by (8), subtracting the cost of communication $F(1, 0) = f$.

Figure 2 summarizes the case of *L-Integration* by illustrating the nature of information transmission from the ruler to the elites under the three possible communication structures.

[20]Exactly as in the complete information benchmark, A_L achieves this by choosing a decision r_T that puts appropriate weights on θ_T, θ_L, and θ_P.

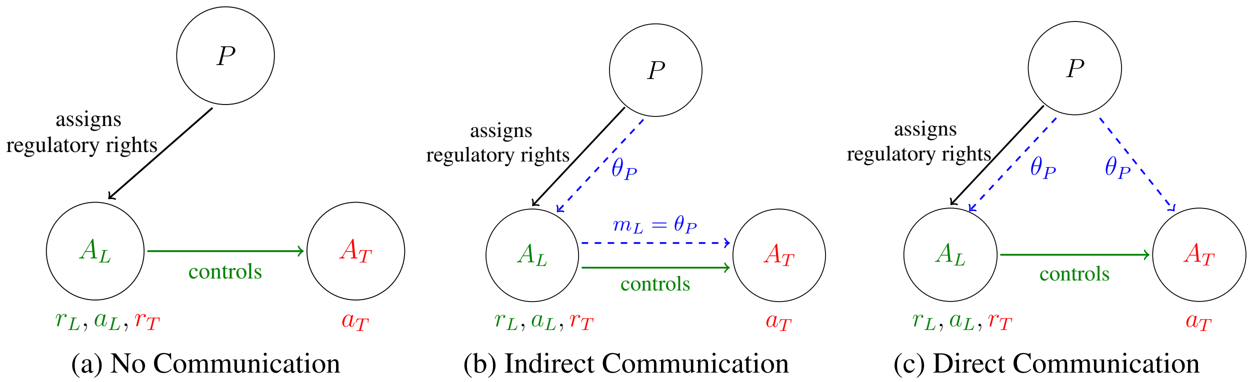


Figure 2: L-Integration: Landed Elite runs both Rural and Urban Administrations

Note: The figure depicts the three possible communication structures when the landed elite controls both the rural and the urban areas. In Figure (a), the ruler does not communicate with either elite. Therefore, elites do not communicate with each other either. In Figure (b), the ruler discloses the common state θ_P to the landed elite A_L who, in turn, communicates θ_P truthfully to the urban elite A_T. In Figure (c), the ruler discloses the common state θ_P to both the rural elite and the urban elite.

Equilibrium under L-Integration. From the analysis of communication under *L-Integration*, the following result holds:

Lemma 4. *Under L-Integration, P prefers 'indirect communication' in which A_L sends a message to A_T regarding θ_P to i) 'direct communication' with both elites and ii) 'indirect communication' in which A_T sends a message to A_L.*

Proof. See Appendix A. □

The first part of the lemma follows from Lemma 3 and the fact that 'indirect communication' is less costly than 'direct communication,' as only one agent needs to be informed by P. The second part of the lemma follows from two observations: First, given assumptions **A2** to **A4**, P wishes both elites to become informed about θ_P so that all actions adapt to and coordinate around the common state. Second, communicating exclusively with A_T – i.e., the elite without administrative control over either unit – would ultimately make A_L imperfectly informed about θ_P. This inefficient communication results because of A_T's incentives to lie about θ_P in an attempt to influence A_L's decision-making.

The following Lemma concludes our analysis of *L-Integration*.

Lemma 5. *Under L-Integration, there exists a threshold $f^\circ(\gamma_T, \cdot)$, with $f^\circ(\gamma_T, \cdot) > 0$ and increasing in γ_T, such that P chooses:*

i) $\{C_L, C_T\} = \{1, 0\}$ *('indirect communication') for* $f \leq f^\circ(\gamma_T, \cdot)$ *and*

ii) $\{C_L, C_T\} = \{0, 0\}$ *('no communication') for* $f > f^\circ(\gamma_T, \cdot)$.

Proof. See Appendix A. □

Lemma 5 states that communication between ruler and elites occurs as long as the costs involved are sufficiently low. When it occurs, it takes the form of sequential (indirect) communication, where P discloses θ_P to A_L, who then passes on this information truthfully to A_T.[21]

We end by noting that we disregarded *T-Integration* because it is dominated by *L-Integration*. To see this, suppose P sets-up *T-Integration* with 'indirect communication' in which A_T sends a message to A_L. A reasoning similar to Lemma 3 establishes that truthful information sharing occurs. Thus, the result stated in Lemma 1 (which was derived for complete information) carries over to the case of incomplete information.

3.2.2 Separation

Suppose P allocates control over regulatory decision r_i to A_i, for $i \in \{L, T\}$. Formally, $\{R_L, R_T\} = \{L, T\}$. Compared to *L-Integration*, under *Separation* A_L can no longer manipulate r_T to influence A_T's economic action a_T. Instead, the two elites must find a balance between adapting to their ideal points and accommodating each other's preferences for local and common states to achieve a degree of coordination. The elites' ability to achieve their objectives depends on their information about θ_P. Let $\mathbb{E}_i(\theta_P)$ denote A_i's expected value of θ_P. Under *Separation*, the FOCs corresponding to A_i's optimization problem are:

$$r_i(L, T) = a_i(L, T) = \frac{2}{3}\left[(1 - \gamma_i)\,\theta_i + \gamma_i \mathbb{E}_i(\theta_P)\right] + \frac{1}{3}\mathbb{E}_i(a_j), \tag{17}$$

for $i, j \in \{L, T\}$ and $i \neq j$. As in the game of complete information, both elites achieve perfect internal coordination by optimally setting their regulatory decisions and economic actions equal to each other. We again distinguish three communication scenarios (illustrated in Figure 3 and discussed in more detail below).

[21] Note that communicating θ_P to both agents increases internal mis-coordination within the urban unit relative to the scenario in which no communication occurs and both elites have an expectation about θ_P equal to zero. This internal mis-coordination results because A_L manipulates regulations in the urban area to his advantage, causing a misalignment between town regulations and the economic decisions made by the urban elite. The extent of this internal mis-coordination diminishes as γ_T approaches γ_L, explaining why the range of values for the cost f such that communication occurs widens as γ_T increases.

No Communication. Suppose $\mathbf{g} = \{L, T, 0, 0\}$, that is, no communication between P and the elites occurs. Because $\mathbb{E}_L(\theta_P) = \mathbb{E}_T(\theta_P) = 0$, from (17) we have:

$$r_i(L,T,0,0) = a_i(L,T,0,0) = \frac{3}{4}(1-\gamma_i)\theta_i + \frac{1}{4}(1-\gamma_j)\theta_j, \tag{18}$$

for $i, j = \{L, T\}$ and $i \neq j$. From (2) and (18), it follows that P's expected payoff is equal to:

$$\begin{aligned} U_P(i,j) = -\Bigg\{ & \frac{k_i}{2}\left[\left((1-\gamma_P) - \frac{3}{4}(1-\gamma_i)\right)^2 + \frac{1}{16}(1-\gamma_j)^2\right] + \\ & + \frac{k_j}{2}\left[\left((1-\gamma_P) - \frac{3}{4}(1-\gamma_j)\right)^2 + \frac{1}{16}(1-\gamma_i)^2\right] + \\ & + \left(\frac{k_i}{4} + \frac{k_j}{4}\right)\frac{1}{4}\left[(1-\gamma_i)^2 + (1-\gamma_j)^2\right]\Bigg\}\frac{\theta^2}{3} - \left\{\left[\frac{k_i}{2} + \frac{k_j}{2}\right]\gamma_P^2\right\}\frac{\bar{\theta}^2}{3}, \end{aligned} \tag{19}$$

for $i, j\ \{L, T\}$ and $i \neq j$. Comparing (11) and (19) reveals that P suffers from not communicating θ_P to the elites because they cannot target the common state.

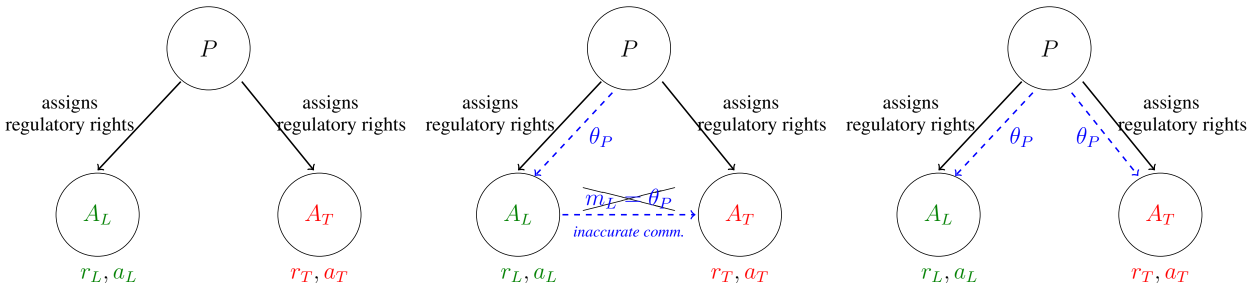
Direct Communication. Suppose $\mathbf{g} = \{L, T, 1, 1\}$, that is, P communicates directly with both elites. Except for the cost of communicating, this scenario is identical to the benchmark case of complete information because we assume that P discloses verifiable information about θ_P. The choices made by the elites are given by (10), and P's expected payoff is given by (11), subtracting the cost of communication $F(1,1) = 2f$.

Indirect Communication. Lastly, suppose $\mathbf{g} = \{L, T, 1, 0\}$, that is, P discloses the value of θ_P to A_L, who then sends a message m_L about θ_P to A_T.[22] From (17), because $\mathbb{E}_L(\theta_P) = \theta_P$, the FOCs corresponding to the elites' optimization problems are given by:

$$\begin{aligned} r_L(L,T,1,0) = a_L(L,T,1,0) = & \frac{3}{4}(1-\gamma_L)\theta_L + \frac{1}{4}(1-\gamma_T)\theta_T + \\ & + \frac{2}{3}\gamma_L\theta_P + \left[\frac{\gamma_T}{4} + \frac{\gamma_L}{12}\right]\mathbb{E}_T(\theta_P \mid m_L), \end{aligned} \tag{20}$$

$$\begin{aligned} r_T(L,T,1,0) = a_T(L,T,1,0) = & \frac{3}{4}(1-\gamma_T)\theta_T + \frac{1}{4}(1-\gamma_L)\theta_L + \\ & + \left[\frac{3}{4}\gamma_T + \frac{1}{4}\gamma_L\right]\mathbb{E}_T(\theta_P \mid m_L), \end{aligned} \tag{21}$$

[22] We anticipate that, given **A2**, the alternative scenario in which P discloses the value of θ_P only to A_T is dominated by alternative structures. This is formally proven in Lemma 7 below.



(a) No Communication (b) $R \to A_L$ Communication (c) $R \to A_L, A_T$ Communication

Figure 3: Separation: Each Elite runs its own Administration

Note: The figure depicts the three possible equilibrium communication structures when each elite runs their unit's local administration. In Figure (a), the ruler does not communicate with either elite. Therefore, elites do not communicate with each other either. In Figure (b), the ruler discloses the common state θ_P to the landed elite A_L who, in turn, imperfectly communicates θ_P to the urban elite A_T. In Figure (c), the ruler discloses the common state θ_P to both the rural elite and the urban elite.

where $\mathbb{E}_T(\cdot \mid m_L)$ captures A_T's beliefs following the message m_L received from A_L.

To compute P's expected payoff, we first solve for the equilibrium of the cheap-talk game between elites that occurs in stage 4. The following lemma states its main features.

Lemma 6. *Under Separation and 'indirect communication' – i.e.,* $\mathbf{g} = \{L, T, 1, 0\}$ *– there does not exist an equilibrium in which* $m_L = \theta_T$, $\forall \theta_T \in [\underline{\theta}, \overline{\theta}]$.

Proof. See Appendix A. □

As elites face different local conditions (i.e., $\theta_L \neq \theta_T$) and assign different weights to the common state, A_L has an incentive to misrepresent the value of θ_P in order to induce A_T to select an economic action that better aligns with A_L's own ideal point. Accordingly, and as can be derived using the expressions provided in the proof, the quality of communication improves (but never reaches perfection) as γ_T tends to γ_L. Figure 3 summarizes the case of *Separation* by illustrating the nature of information transmission from the ruler to the elites under the three possible communication structures.

The computation of P's expected payoff is somewhat involved, as it requires plugging in the optimal decisions and the equilibrium messages sent by A_L. Lemma B1 in Appendix B states its value. Comparing equation (B.29) in Lemma B1 with (11), and ignoring the costs of communication, reveals that the imperfect communication that happens between the elites is detrimental to P.

Equilibrium under Separation. Before we characterize P's preferred communication structure, we define three thresholds for the cost of communication: $\hat{f}$, $\tilde{f}$ and f^*, all strictly greater than zero. We derive the first threshold by comparing P's expected losses under 'direct communication' and 'no communication.' Specifically, P's expected loss from 'direct communication' is lower than that from 'no communication' if and only if $f \leq \hat{f}$. Similarly, we derive the second threshold by comparing P's expected losses under 'direct communication' and 'indirect communication,' with P's expected loss from 'direct communication' being lower than that from 'indirect communication' if and only if $f \leq \tilde{f}$. Finally, we derive the third threshold by comparing P's expected losses under 'indirect communication' and 'no communication,' with P's expected loss from 'indirect communication' being lower than that from 'no communication' if and only if $f \leq f^*$. The following lemma states P's preferred communication structure under *Separation*.

Lemma 7. *Under Separation:*

i) if $\hat{f} \leq \tilde{f}$, P chooses:

a) $\{C_L, C_T\} = \{1, 1\}$ ('direct communication') for $f \leq \hat{f}$;

b) $\{C_L, C_T\} = \{0, 0\}$ ('no communication') for $f > \hat{f}$.

ii) if $\hat{f} > \tilde{f}$, P chooses:

a) $\{C_L, C_T\} = \{1, 1\}$ ('direct communication') for $f \leq \tilde{f}$;

b) $\{C_L, C_T\} = \{1, 0\}$ ('indirect communication') for $\tilde{f} < f \leq f^*$.

c) $\{C_L, C_T\} = \{0, 0\}$ ('no communication') for $f > f^*$.

Proof. See Appendix A. □

Parts $i.a$ and $ii.a$ in the lemma establish that P discloses θ_P *directly* to both elites when communication costs are sufficiently low. This occurs because the benefit of 'direct communication' over 'indirect communication' – i.e., preventing A_L from manipulating information and causing mis-adaptation to and mis-coordination on the common state by both elites – exceeds the cost of opening an additional direct communication channel. On the other hand, parts $i.b$ and $ii.c$ state that P does not communicate with any of the two elites if the cost of communication is too high. An intermediate case can exist in which P communicates with A_L, and A_L subsequently communicates with A_T (part $ii.b$). This case arises when the benefit of 'indirect communication' – saving the cost f – outweighs the inefficiency resulting from imperfect communication between elites. Specifically, this scenario can occur when, all else equal, γ_T is sufficiently close to γ_L, leading to improved communication quality between the elites (see the proof of Lemma 7 in Appendix A).

Importantly, comparing Lemma 5 to Lemma 7 implies that 'direct communication' between the ruler and the urban elite can only emerge when the urban elite controls the town administration. This finding represents a cornerstone of the institutional dynamics that we study.

3.2.3 Equilibrium Governance Structure

We now study P's preferred allocation of administrative control *and* communication structure for different configurations of parameters. In line with our leading application, we mainly focus on the effect of $\{k_L, k_T\}$ on P's preferred governance structure.

To limit the number of cases to consider, we perform this comparison for low communication costs f. Specifically, we assume $f = \epsilon$, with $\epsilon > 0$ as small as one likes (**A6**). This approach simplifies the analysis and is sufficient to establish our main result of interest. Under **A6**, there exists large scope for communication. As a result, from Lemma 5, P's preferred communication structure under $L-Integration$ involves 'indirect communication.' In contrast, from Lemma 7, P's preferred structure under *Separation* involves 'direct communication' with both elites. The following proposition states our main result.

Proposition 2. *In the game of incomplete information, there exists a threshold $\tilde{k}$ for k_T, such that:*

a) if $\min\left\{\tilde{k}, k_L\right\} = \tilde{k}$, P chooses L-Integration with 'indirect communication' for $k_T \in \left[0, \tilde{k}\right]$, and Separation with 'direct communication' for $k_T \in \left(\tilde{k}, k_L\right]$.

b) if $\min\left\{\tilde{k}, k_L\right\} = k_L$, P chooses L-Integration and 'indirect communication' $\forall k_T$.

Compared to the case of complete information, $\underline{k} < \tilde{k}$.

Proof. See Appendix A. □

Proposition 2 states the equilibrium allocation of decision rights over regulatory actions and communication structure as a function of the size of the urban economy compared to the rural economy. In a manner similar to Proposition 1, part a in Proposition 2 establishes that P allocates control over the town to the urban elite when the urban economy is sufficiently important. Under incomplete information, a change in the allocation of decision rights results in a corresponding adjustment in the communication structure. Under *L-Integration*, P relies on a system of 'indirect communication' to convey *perfect* information to both elites regarding the realization of the common state. In contrast, when *Separation* prevails, P engages in direct communication with both the urban and landed elites to prevent the landed elite from manipulating information. By doing so, the newly empowered urban elite becomes well-informed about the common state. The shift in decision rights allocation, transitioning from *L-Integration* to *Separation*, and the alteration in the communication structure between the ruler and the urban elite, moving from 'indirect' to 'direct' communication, reinforce each other to lead to *all* actions assigning more weight to the preferences of the urban elite. Figure 4 illustrates these trade-offs by comparing the ruler's expected losses under *L-Integration* and *Separation*, with further distinction between 'indirect' and 'direct' communication in the *Separation* scenario.

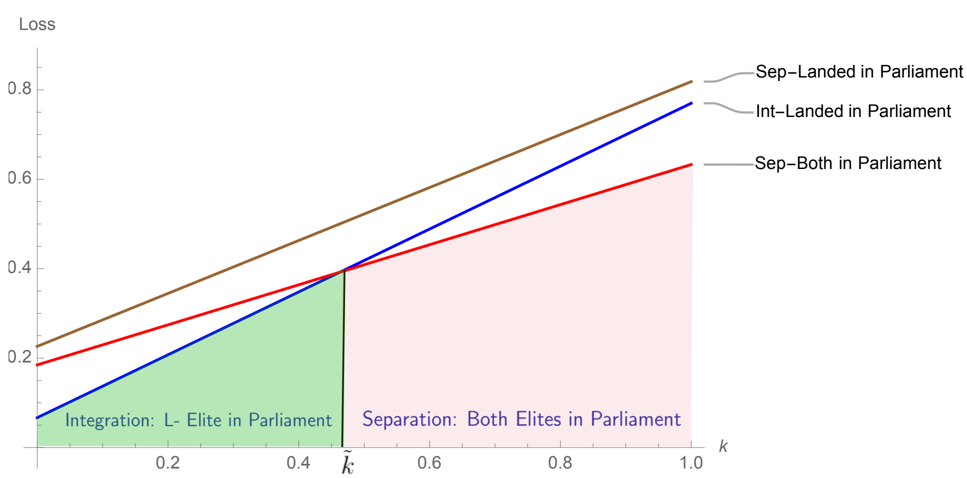


Figure 4: Trade-off between *L-Integration* and *Separation*

Note: The figure illustrates the ruler's expected losses under *L-Integration* and *Separation* as a function of k_T, where k is defined as $\frac{k_T}{k_L}$, with k_L normalized to 1. The figure shows that, as k_T grows sufficiently large, the ruler transitions from *L-Integration* with 'indirect communication' to *Separation* with 'direct communication' with both elites.

Similarly to Proposition 1, the threshold value $\tilde{k}$ in Proposition 2 is a function of the players' preferences.

Specifically, employing a reasoning analogous to that used in Proposition 1, there exists a scenario where *Separation* does not occur, even as k_T approaches k_L (part b in Proposition 2). This situation arises when γ_P attains very high values, γ_T is neither too distant nor too close to γ_L, and Var (θ_P) is sufficiently large relative to Var (θ_i). In contrast to Proposition 1, the threshold value $\tilde{k}$ in Proposition 2 additionally depends on the communication cost f. This accounts for the condition $\underline{k} < \tilde{k}$.

In the broader historical context, the result stated in Proposition 2 captures the significant shift in the composition of medieval and early modern institutions that occurred throughout Western Europe. Following the Commercial Revolution, merchant towns obtained self-governance, and therefore had to be persuaded into contributing to common projects (e.g., war effort). As highlighted by Harriss (1975, pp. 41-2), in England the traditional assembly of landed elites saw a diminishing influence over the decision-making processes of these towns, prompting the monarch into initiating direct communication with urban representatives in parliament. We further discuss this in Section 6.

4 Discussion of Modeling Choices

In this section, we contrast some of our main modeling choices in our baseline setup (presented in Sections 2 and 3) with alternative approaches.

Information about local states. We assume that local elites know each other's states due to their geographical proximity. Also, they can communicate freely and without incurring any costs. Complete information about *local* states allows us to focus on the organization of the communication between ruler and local elites regarding the *common* state. Alternatively, we could have considered the scenario of two geographically distant elites, each privately informed about their local conditions, communicating with each other at a cost (e.g., within a central assembly). In this context, the ruler faces a potential loss when convening elites, as they might communicate about and coordinate on local states instead of the common state (for an example of these dynamics, see Hernández, 2020, pp. 356-8). Our framework could be extended to study these dynamics. We choose to focus our attention on geographically close elites, because our primary interest is in the ruler's decision regarding the delegation of administrative control and the resulting implications for the design of communication channels.

Incentives to learn the common state. In the model, we assume that the cost of communication is entirely borne by P, and elites have no choice but to listen to P. Alternatively, we could have assumed that elites also bear a cost from listening to P, allowing them to choose whether to remain ignorant about the realization of the common state by deciding not to incur this cost. In this context, it can be shown that an elite has a stronger incentive to engage in communication with P when in control of the administration of a given area than when not. Specifically, A_T benefits more from learning θ_P under *Separation* than under *L-Integration*. This difference arises because A_T can more effectively exploit information to target his own ideal point under *Separation*. This observation underscores a complementary mechanism by which the transition from *L-Integration* to *Separation* promotes the emergence of 'direct communication.' Online Appendix A offers a more detailed discussion.

Voting. In our model, the assembly serves as a forum for players to exchange information. Its function is deliberative, meaning that it does not reach a binding decision through mechanisms such as majority voting. This aligns with significant historical examples, like medieval and early modern parliaments that coordinated efforts by localities to meet war threats (see, for instance, Mitchell, 1951, p. 226). It also corresponds to modern organizational settings, such as inter-divisional meetings where headquarters and divisional leaders communicate to coordinate decision-making in response to changes in their environment, (e.g., in cases of hostile takeovers).

Alternative governance structure. We have ignored the governance structure in which the ruler 'cross-delegates' control over regulatory decisions in the urban area to the rural elite and in the rural area to the urban elite. We exclude this allocation of decision rights for historical reasons. Our focus centers on a period characterized by administrations led by elites whose authority is based on the control of their own territories, which they leverage to govern immediately-surrounding areas. For instance, in order for the landed elite to effectively govern the urban area, they must maintain control over their foundational power base in the countryside.

Monetary transfers. Another notable feature of our model is the lack of monetary transfers and the inability of the players to enter agreements with each other. This assumption captures the idea that it is difficult to enforce complex contracts that would make the institutional setup irrelevant (see Acemoglu, 2003). However, the economic actions made by the elites can be interpreted as the allocation of resources, including money, to different goals, such as contributing to the war effort or improving local infrastructure.

5 Bottom-up Communication

We explore an alternative informational environment that has received significant attention in the historical literature on assemblies (see Section 6). Specifically, we examine a scenario where assemblies function as a forum for the ruler to acquire information about conditions in the localities. We modify our main set-up $i)$ by making θ_P publicly observable, $ii)$ by making θ_T unobservable to P (but observable to A_L), and $iii)$ by having P take an action a_P. To illustrate, in the context of a war threat, the action a_P could be understood as P's military decision. Point $i)$ eliminates the need for P to communicate the common state.[23] In contrast, points $ii)$ and $iii)$ create the need for P to learn θ_T. To maintain simplicity, we retain the assumption that θ_L is publicly observable.

We now describe the players' payoffs. A_i's ex-post payoff is:

$$\begin{aligned} U_i(\gamma_i) = -k_i \Bigg(& (1-\rho)\left[\gamma_i\theta_P + (1-\gamma_i)\theta_i - a_i\right]^2 + \\ & + \rho\left[(1-\lambda-\eta)(r_i-a_i)^2 + \lambda(a_j-a_i)^2 + \eta\underbrace{(a_P-a_i)^2}_{\text{Coord. P-Elite}}\right]\Bigg), \end{aligned} \tag{22}$$

where $\eta \in [0,1]$. Compared to (1), A_i benefits from (*externally*) coordinating his economic action a_i with the action a_P chosen by P. Further, P's ex-post payoff is:

$$\begin{aligned} U_P = -\sum_{i\in\{L,T\}} k_i \Bigg(& (1-\rho)\left[\gamma_P\theta_P + (1-\gamma_P)\theta_i - a_i\right]^2 + \\ & + \rho\left[(1-\lambda-\eta)(r_i-a_i)^2 + \lambda(a_j-a_i)^2 + \eta\underbrace{(a_P-a_i)^2}_{\text{Coord. P-Elite}}\right]\Bigg) - F(C_L, C_T), \end{aligned} \tag{23}$$

where, $F(\cdot)$ is the cost of establishing a *direct* communication channel with the elites regarding the realization of θ_T. From (23), P has an incentive to coordinate her action with both elites' economic actions. Therefore, each elite has incentives to manipulate both P's action and that of the other elite, and a way to do so is to exploit the information about θ_T provided to P.

[23] As will become clear, assuming that θ_P is private information (as in Sections 2 and 3) can only strengthen our findings.

For simplicity, we assign equal weights to the *adaptation* and *coordination* components in players' utilities. Moreover, all coordination motives are weighted equally. Specifically, we assume:

A7: $\rho = \frac{1}{2}, \lambda = \frac{1}{3}, \eta = \frac{1}{3}$.

Complete Information. In Appendix C, we solve the benchmark case of complete information. As in the main analysis of Section 3, under *L-Integration*, the landed elite exploits their control over the urban area to have the urban elite target the ideal point of the landed elite. As a result, P also chooses an action aligned with the landed elite's ideal point. It follows that, under *L-Integration*, all actions are independent of local conditions θ_T. Under *Separation*, the two elites strike a balance between adaptation and coordination motives, leading P to select an action that aligns with these considerations. Because P wishes to coordinate with both elites, all actions are a function of the relative sizes of the units (k_L and k_T). This feature introduces greater nuance when determining P's preferred allocation of decision rights over regulatory decisions. Nonetheless, Proposition C.1 in Appendix C shows that, all else equal, P opts for *L-Integration* when the urban area is small relative to the rural area, and *Separation* when the urban area becomes sufficiently large relative to the rural area.

Incomplete Information. Consider the scenario in which P lacks information about θ_T. P can gather information in two ways. One option is to communicate with A_T ('direct communication'). Opening a direct communication channel comes at a cost f, and it enables P to acquire hard evidence regarding θ_T. For example, direct communication with A_T allows access to documentation and other forms of evidence related to the state of the urban economy. Alternatively, P can rely on A_L's cheap-talk message m_L^R ('indirect communication'), and we assume that this communication channel is costless. This assumption reflects a situation where P and A_L already communicate for reasons not explicitly modeled.[24] Next, we examine the optimal communication structures under integration and under separation.

Under *L-Integration*, P's action is independent of θ_T (see Appendix C.1). This implies that incomplete

[24] In a more general version, θ_L would also be unobservable to P (but observable to A_T, as in the baseline framework), and communication between P and A_L would also involve a cost. In this version, P would have two ways of gathering information about each local state: 'direct communication' with both elites at a cost of $2f$ or 'direct' with one elite and 'indirect' with the other, at a cost of f. Making θ_L publicly observable and communication between P and A_L costless allows us to simplify the analysis while retaining the same trade-offs present in this more general version.

information is inconsequential, and all actions and payoffs are identical to those in the complete information benchmark. The lemma that follows is a direct result of this reasoning.

Lemma 8. *Under L-Integration, P does not engage in 'direct communication' with A_T.*

Proof. Because a_P is independent of θ_T, no 'direct communication' occurs to save on cost f. □

When comparing the main framework discussed in Sections 2 and 3 to the framework examined here, we observe that Lemma 4 and Lemma 8 lead to similar outcomes, albeit for different reasons. In the main framework, when A_L has control over D_T, P can effectively utilize A_L as a reliable intermediary to convey information about θ_P to A_T. This is possible because A_L can better exploit his control over D_T when both elites have symmetric information. Here, A_L's control over D_T renders P's action independent of the conditions prevailing in D_T, thereby eliminating the necessity for communication concerning θ_T. In both cases, an integrated structure implies that direct communication between P and the 'controlled' elite (A_T) is unnecessary.

Under *Separation*, P's information regarding θ_T affects all players' equilibrium actions. This is formally shown in (A.26), (A.27) and (A.28) in Appendix A. Given these actions, the following lemma states that P can only obtain coarse information about θ_T when relying on the message sent by A_L.

Lemma 9. *Under Separation, when P communicates solely with A_L ('indirect communication'), there does not exist an equilibrium in which $m_L^R = \theta_T$, $\forall \theta_T \in [\underline{\theta}, \overline{\theta}]$.*

Proof. The result follows from observing that the expected utilities of P and A_L differ from each other. □

Intuitively, when A_L lacks control over D_T, he has an incentive to misrepresent local conditions θ_T in order to sway P's action and, ultimately, that of A_T towards his own ideal point.

To characterize P's preferred communication structure under *Separation*, we ask whether P gains from gathering better information about θ_T by communicating directly with A_T. On the one hand, more accurate information improves coordination between P and A_T. On the other hand, it results in actions that are closer to A_T's ideal point, which $i)$ may cause a bigger expected loss if γ_P and γ_T are very different, and $ii)$ leads to higher expected losses from unit D_L. This latter concern is particularly pronounced when $k_L >> k_T$. The following lemma states (sufficient) conditions under which P finds it profitable to learn θ_T. In what follows, and in accordance with our analysis in Section 3, we assume $f = \epsilon$, with $\epsilon > 0$ as small as one likes.[25]

Lemma 10. *Under Separation, P communicates directly with A_T for both sufficiently high values of k_T and sufficiently homogeneous values of γ_P, γ_L and γ_T.*

Proof. See Appendix A. □

Intuitively, as the two units become more similar in size and as elites' preferences tend to coincide with those of P, the latter has an incentive to gather accurate information about local conditions to ensure better adaptation in D_T and better coordination both between localities and between center and localities.

We now leverage the findings established in Lemma 8 through Lemma 10 to examine P's preferred allocation of administrative control over local units *and* communication structure. Following the result established in Lemma 10, we focus on the case of interest in which players' preferences are sufficiently homogeneous, creating incentives for P to learn θ_T.

Proposition 3. *Suppose players have sufficiently homogeneous preferences regarding the common state. Under incomplete information, P chooses:*

a) L-Integration and 'no communication' with A_T for $k_T \in [0, \min\{\underline{k}^*, k_L\}]$;

b) Separation and 'direct communication' with A_T for $k_T \in \left(\min\left\{\overline{k}^*, k_L\right\}, k_L\right]$.

Proof. See Appendix A. □

Proposition 3 complements the result established in Proposition 2 for our baseline framework. Irrespective of whether information flows from the ruler to the elites (Sections 2 and 3) or viceversa (Section 5), the increasing economic significance of a particular unit (the town) leads to the local (urban) elite assuming administrative control within that unit. This administrative change triggers alterations in the communication structure between center and localities. Elites vested with administrative control over a specific unit gain direct access to the center, enabling them to gather (from the ruler) and relay (to the ruler) firsthand information about common and local states. Direct access serves as a safeguard against intermediaries manipulating

[25]This assumption allows us to focus on the main case of interest in which there is large scope for communication.

information to influence decisions that are no longer under their control. As a result, the establishment of direct communication channels between the central ruler and the elites in control of local administrations enhances the overall organizational response to both common and local shocks.

6 Historical Applications

Our framework sheds light on the process of urban self-governance, whereby local urban elites – mainly composed of merchants but also, depending on the context, including craftsmen, religious and military leaders – secured administrative control over towns and direct access to central authorities. Ultimately, this institutional shift enabled a broader spectrum of interests to influence policies across the larger polity.

These dynamics played out in different historical and geographic contexts. In this section, we first discuss medieval and early modern Western Europe, focusing on the economic and political rise of the merchant class and the creation of parliaments. We then move on to the cases of Spanish America and ancient Rome.

Western Europe: In the medieval period, before the Commercial Revolution, control over both rural and urban areas across Western Europe rested predominantly in the hands of (military) landed elites. These elites assumed positions as county officials, wielding extensive jurisdictional authority over towns and their merchant elites.[26] As a result, assemblies where monarchs sought contributions from their subjects for war efforts convened with the participation of landed elites, sidelining merchants from these deliberations. Landed elites were key in facilitating administrative coordination across the realm: They reported on local conditions to the monarch and disseminated information about the policies agreed upon in the assembly to towns through a network of local courts, ensuring a speedy collection of taxes (see Harding, 1973, for the case of England). Based on our model's logic, this system proved effective because the landed elite occupied key positions within both rural and urban administrations, allowing them to enforce policies in alignment with their preferences. Correspondingly, the landed elite had no incentives to misrepresent information to the towns under their control.

The Commercial Revolution brought about a significant increase in the economic potential of trading towns. Beginning in the 12th century, central rulers entrusted merchant elites with control of urban admin-

[26] For the case of England, see Mitchell (1951). For the case of France and Spain, see Sanz (1994), Ladero Quesada (1994), and Hilton (1995).

istrations, recognizing the opportunity for maximizing gains. The wave of municipal autonomy weakened the influence of landed elites over municipal governance and consequently their ability to coordinate towns' decisions with the rest of the polity. In England, the Crown no longer required autonomous towns to attend county courts to conduct administrative business and exchange information, establishing instead direct communication channels with urban elites (Mitchell, 1951; Carpenter, 1996). In our model's logic, mediation by the landed elite was abandoned because they could no longer be trusted to act as reliable information intermediaries between the center and the towns. By the 13th century, central rulers across Western Europe requested representatives of autonomous towns to participate in regional and central assemblies, providing urban elites with voice and ears on matters concerning the entire polity (Marongiu, 1968). These changes influenced economic and institutional dynamics for the centuries to come inside and outside Western Europe – such as the financing of colonial enterprises, trade policies, and the gradual extension of the franchise and introduction of checks and balances on the executive (Acemoglu et al., 2005; Angelucci et al., 2022).

Spanish America: Our analysis also applies to the case of 16-18C Spanish America. In the 16th century, the Spanish crown organized the recently conquered territories into several vice-royalties, each comprising provinces headed by tribunals (*audiencias*) who had oversight over provincial-level officials (governors, *corregidores* and *alcaldes mayores*). At the local level, Spanish settlers established municipalities with a governance structure akin to that of Castilian towns. In particular, the municipal governing body (*cabildo*) consisted of mayors and aldermen (*alcaldes ordinarios* and *regidores*) along with other minor officials. Initially, the *cabildos* were predominantly dominated by local producers who exploited indigenous labor (*encomenderos*), with merchants playing a minor role (Garfias and Sellars, 2021). The *cabildo* underwent annual renewal through a system of co-optation, with provincial governors holding sway over these appointments. Likewise, officials at the provincial level, consistently drawn from the regional landed (and mining) elites, held jurisdiction over towns, including trade-related matters (Morales, 1979; Alvarez, 1991; Domínguez-Guerrero and López Villalba, 2018). In accordance with our model, during this early phase provincial-level officials engaged in direct communication with the central government – either the council in Madrid or the viceroy. In contrast, there is scant evidence of direct communication between the central government and municipal bodies, with such communication being primarily mediated by the provincial governors to economize on costs (Mazín, 2013; Alarcón Olivos, 2017; Amadori, 2023).

By the end of the 16th century, the profits from colonial trade accruing to the Spanish crown had grown significantly compared to those derived from mining activities and production (Hernández, 2020, pp. 72-3, 105). Moreover, in the first half of the 17th century, the Spanish crown encountered threats to its American dominions from rival European powers. In response to these challenges, the crown sought to increase contributions from its colonial subjects to finance the defense of the American possessions, exemplified by initiatives like the *Union de Armas*. In this context, merchants secured entry into the municipal *cabildos*. Concomitantly, these councils obtained a higher degree of self-governance from the crown, thereby securing increased jurisdictional power relative to the provincial-level officials (Escamilla, 2008).[27] Consistent with our model, the crown established direct channels of communication with self-governing municipalities, bypassing the mediation of provincial-level officials (Calvo and Gaudin, 2023; Mauro, 2021). In the first half of the 17th century, the consultations with colonial towns resulted in the implementation of trade taxes (e.g., *alcabala*) effectively administered by the municipalities – a practice referred to as *encabezamiento* (Arias, 2013).[28] Notably, to prevent colonial towns from acting collectively, the Spanish monarchs prohibited towns from assembling and engaging in group communication (Lohmann Villena, 1947). Instead, the crown established a framework of bilateral direct communication to manage colonial affairs. Overall, urban elites exerted substantial influence on policy-making (Lynch, 1992; Grafe and Irigoin, 2012).[29]

Ancient Rome: One further application of our setting concerns the organization of the provinces under Roman rule that emerged during the first century BC. The Roman dominion, as it expanded through conquests across Western and Eastern Europe, introduced a relatively homogeneous administrative structure wherein these newly acquired territories were partitioned into provinces, each ruled by officials appointed by the center.[30] Within these provinces, the task of tax collection in towns was largely entrusted to outsiders who acted as tax farmers (*publicani*), while the local urban elites exercised limited influence over urban administrative affairs. The channels of direct communication between the provincial urban elites and Rome were at best

[27] See Morales (1979) and Barriera (2012) for the cases of Mexico City and Buenos Aires.

[28] In Mexico City and Lima, taxes on local and international trade were often administered by the *consulados de comercio* (merchant guilds). See, for instance, Hernández (2020, p. 110)

[29] In the latter half of the 18th century, the Bourbon monarchs initiated reforms aimed at diminishing the influence of local (creole) elites in the provincial government, replacing them with central bureaucrats (*intendants*). These reforms met with the resistance of the local elites, a process that arguably prompted the formation of independence movements, as highlighted by Chiovelli et al. (2023).

[30] For the organization of the provinces see the contributions in Barrandon and Kirbihler (2019) and France (2021, pp. 105-9, 119-20, 151-5, 327-8).

infrequent, and indirect communication through provincial assemblies likely played a more important role.[31] During the II and I centuries BC, as provincial towns grew economically vital (France, 2021, pp. 232-3), Rome restructured local governance, entrusting urban elites with administrative control over selected towns. In line with our framework, these changes were driven by a desire to empower towns to better adapt to local contingencies and curb local discontent. At the same time, this surge in self-governance aggravated coordination challenges between center and localities, leading Rome to establish more direct ties with the autonomous urban elites (see Fernoux, 2019; France, 2021, pp. 327-9, 375-6). This policy was enacted in two ways: increasing towns' participation in provincial assemblies and allowing them to dispatch representatives to Rome. This process increased towns' influence over policies (France, 2021, pp. 401-2).

7 Conclusions

We presented a model that explains how economic changes affect the optimal governance structure from the perspective of a central ruler. A prominent application of our framework is the rise of urban merchant elites in Western Europe during the Medieval and Early Modern periods. We focus on the interplay between local and central institutions, showing how urban elites first gain control over urban administrations from the landed elite. This shift allows them to implement specialized regulations, benefiting both themselves and the central ruler. The ruler also establishes direct communication with self-governed towns to inform them about shocks to the realm, enhancing coordination. Overall, these developments in the structure of local administration and representation result in policies more aligned with the preferences of the merchant class.

Over six decades after James March encouraged political scientists to apply their frameworks to contemporary organizations like firms (March, 1962), our paper adopts a reverse approach. Our model is anchored in the principles of organizational economics, especially drawing from the literature on the governance of multi-divisional firms. Within this structure, we have incorporated several key elements to analyze the organizational challenges faced by historical central states. In the spirit of March's call, we believe the insights gained from our model can also be pertinent to the study of modern organizations.

In our framework, elites make inalienable decisions affecting the whole polity. For instance, urban

[31] Much like the case of Medieval England, the instances of direct communication between Rome and delegates of provincial towns often revolved around grievances pertaining to the conduct of tax farmers. It must be noted that very little information survives regarding the extent of participation within the provincial assemblies for towns under the jurisdiction of centrally-appointed magistrates (France, 2021, pp. 133-4, 142-3, 279-81, 290-8).

elites control commerce even if they do not run town administrations, contrasting with the usual assumption of fully transferable decision rights. Analogous to a corporate setting, where a division like engineering might oversee marketing, the decisions and information flow within the marketing division remain essential. Such dynamics are likely important in determining the overall organizational structure, including whether engineering should indeed oversee marketing.

Our model, with inalienable decision rights and an unknown common state, places greater focus on the communication network among all players compared to existing research. It explores whether an elite should directly interact with a central authority, like through a general assembly, or communicate via another elite, balancing factors like communication costs and the reliability of intermediaries. This parallels modern organizations, contemplating executive team composition or choosing between extensive town-halls versus focused committee gatherings with subsequent relay to the wider organization.

Lastly, our model emphasizes coalition dynamics. While models typically focus on headquarters' prioritization of divisions based on their importance, we add another layer: the central authority, who has her own preferences regarding the decisions elites make but lacks the power to simply impose her will, considers variations in preferences among herself and elites. This preference diversity influences the optimal administrative structure. In contemporary enterprises, both central and divisional leaders frequently hold contrasting perspectives on firm decisions. Integrating our approach to modeling coalition dynamics to the study of corporate organizational design promises novel insights.

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A Proofs of Lemmas and Propositions

Proof of Lemma 1. Given **A2**, **A3**, and **A4**, the results follow from comparing (8) under $\{R_L, R_T\} = \{L, L\}$ to (8) under $\{R_L, R_T\} = \{T, T\}$. More specifically, suppose $k_L = k_T$. From (6) and (7), given **A2**, P's expected loss in (8) is lower under *L-Integration* than under *T-Integration*. This occurs because a_L and a_T are closer in expectation to P's preferred policy under *L-Integration* than under *T-Integration*. It follows that P prefers *L-Integration* to *T-Integration* for any $k_T \leq k_L$. ■

Proof of Lemma 2. From (8), P's expected loss from unit D_T under *L-Integration* is equal to:

$$k_T \left\{ \left[\frac{1}{2} \left[(1-\gamma_P)^2 + (1-\gamma_L)^2 \right] + \left[(1-\gamma_L)^2 + (1-\gamma_T)^2 \right] \right] \frac{\theta^2}{3} + \left[\frac{1}{2} (\gamma_P - \gamma_L)^2 + (\gamma_L - \gamma_T)^2 \right] \frac{\bar{\theta}^2}{3} \right\}. \quad \text{(A.1)}$$

From (11), P's expected loss from unit D_T under *Separation* is equal to:

$$\begin{aligned} &k_T \left\{ \frac{1}{2} \left[\left(1 - \gamma_P - \frac{3}{4}(1-\gamma_T) \right)^2 + \frac{1}{16}(1-\gamma_L)^2 \right] + \frac{1}{16} \left[(1-\gamma_L)^2 + (1-\gamma_T)^2 \right] \right\} \frac{\theta^2}{3} + \\ &+ k_T \left\{ \frac{1}{2} \left(\gamma_P - \frac{3\gamma_T + \gamma_L}{4} \right)^2 + \frac{(\gamma_L - \gamma_T)^2}{16} \right\} \frac{\bar{\theta}^2}{3}. \end{aligned} \quad \text{(A.2)}$$

First, note that the term in the component multiplied by $\frac{\theta^2}{3}$ in (A.1) is greater than the corresponding term in (A.2). It is therefore sufficient for the result stated in the Lemma to hold that the component multiplied by $\frac{\bar{\theta}^2}{3}$ in (A.1) be greater than the corresponding component in (A.2). This second comparison can be written as:

$$\frac{1}{2} \left(\gamma_P - \frac{1}{4}\gamma_L - \frac{3}{4}\gamma_T \right)^2 + \frac{1}{16}(\gamma_L - \gamma_T)^2 \leq \frac{1}{2}(\gamma_P - \gamma_L)^2 + (\gamma_L - \gamma_T)^2, \quad \text{(A.3)}$$

which holds under **A5**. ■

Proof of Proposition 1. From Lemma 1, we have that P prefers *L-Integration* to *T-Integration*. In what follows, we can therefore disregard *T-Integration*. Consider the case in which $k_T = 0$. From (8) and (11), and given **A2**, we have that P prefers *L-Integration* to *Separation*. As k_T increases, P's expected loss from unit D_L remains unaffected under both *L-Integration* and *Separation*. By contrast, P's expected loss from unit D_T increases under both governance structures. From Lemma 2, we have that, for any $k_T \in (0, k_L]$, P's expected loss from unit D_T is lower under *Separation* than under *L-Integration*. Therefore, there must exist a threshold $\underline{k}$ such that, if $\min\{\underline{k}, k_L\} = \underline{k}$, P chooses *Separation* (respectively, *L-Integration*) for $k_T \in (\underline{k}, k_L]$ (respectively, $k_T \in [0, \underline{k}]$). If $\min\{\underline{k}, k_L\} = k_L$, P chooses *L-Integration* for all values of k_T.

Finally, from (8) and (11), as γ_P increases, P's expected payoff from *Separation* decreases at a faster rate than the expected payoff from *L-Integration*. This observation establishes that $\underline{k}$ increases with γ_P. ■

Proof of Lemma 4. The proof for part i) follows from Lemma 3 and from 'direct communication' being more costly than ‘indirect communication’ – i.e., $F(1,1) > F(1,0)$.

To prove part ii), suppose P sets $\{C_L, C_T\} = \{0,1\}$. Then, note that for all but one realization of $\boldsymbol{\theta} = \{\theta_P, \theta_L, \theta_T\}$, truthtelling is not an equilibrium of the cheap-talk game between elites.[32] Specifically, given $\gamma_P \geq \gamma_L \geq \gamma_T$, A_T has an incentive to lie about the realization of θ_P, which results in an inaccurate message sent to A_L. As a consequence, elites' economic actions would not be able to perfectly target θ_P, leading to a higher expected loss for P relative to $\{C_L, C_T\} = \{1,0\}$.[33] ■

Proof of Lemma 5. From Lemma 4, P compares $\boldsymbol{g} = \{L, L, 1, 0\}$ (‘indirect communication’ in which P discloses θ_P to A_L) to $\boldsymbol{g} = \{L, L, 0, 0\}$ (‘no communication’). From the analysis in Section 3.2.1, P's expected payoff under *L-Integration* and ‘indirect communication’ is:

$$U_P(L,L) = -\left\{\frac{k_L}{2}(\gamma_P-\gamma_L)^2 + \frac{k_T}{2}\left[3(1-\gamma_L)^2 + 2(1-\gamma_T)^2 + (1-\gamma_P)^2\right]\right\}\frac{\underline{\theta}^2}{3} + \\ -\left\{\left[\frac{k_L}{2}+\frac{k_T}{2}\right](\gamma_P-\gamma_L)^2 + k_T(\gamma_L-\gamma_T)^2\right\}\frac{\bar{\theta}^2}{3} - F(1,0). \tag{A.4}$$

From (14) and (A.4), we have that P's expected payoff from ‘indirect communication’ decreases with f, whereas P's expected payoff from ‘no communication’ is independent of f. Also, for $f = 0$, from **A2-A3**, P's expected payoff is higher under ‘indirect communication’ than under ‘no communication’. This establishes the existence of the threshold $f^\circ(\gamma_T, \cdot)$. By comparing the components linked to the variance of θ_P in (14) and (A.4) as γ_T increases, we have that P's expected loss from ‘indirect communication’ increases at a faster rate than her expected payoff from ‘no communication’.[34] This establishes that $f^\circ(\gamma_T, \cdot)$ increases with γ_T. ■

Proof of Lemma 6. We denote a generic cutoff of the partitions by $\theta_{P,n}$, for $n \in \{-\infty, ..., +\infty\}$. We make the following technical assumption:

A8: $\gamma_T \in [0, \underline{\gamma}]$, with $\underline{\gamma} = \frac{\bar{\theta}-\underline{\theta}}{\bar{\theta}+\underline{\theta}}\gamma_L$.

A8 (joint with **A1**) simplifies our setting by ensuring that, for any $\{\theta_L, \theta_T\}$, there exists a realization of θ_P such that A_L truthfully reports θ_P to A_T. Define θ_P^M as the state on the boundary between two partitions, $[\theta_{P,n-2}, \theta_{P,n-1})$ and $[\theta_{P,n-1}, \theta_{P,n}]$, with $\theta_P^M = \theta_{P,n-1}$. A_L sends a message m_L^l (resp., m_L^h) when $\theta_P \in$

[32] The solution to the cheap talk-game can be derived by following the procedure shown in the proof of Lemma 6.

[33] This statement relies on the fact that, ignoring the cost of communication, P prefers to deliver the most accurate information regarding θ_P to the elites. In the proof to Lemma 5, we formally establish that, under *L-Integration*, P prefers perfect communication to no communication.

[34] To establish this result, we need to compare the components linked to the variance of θ_P in (14) and (A.4), because all other components are identical across the two different communication structures.

$[\theta_{P,n-2}, \theta_{P,n-1})$ (resp., $[\theta_{P,n-1}, \theta_{P,n}]$). We write A_L's incentive constraint (IC) at the communication stage:

$$
\begin{aligned}
&-k_L \Bigg\{ \frac{1}{2} \Bigg[(1-\gamma_L)\,\theta_L + \gamma_L \theta_P^M - \frac{3}{4}(1-\gamma_L)\,\theta_L - \frac{1}{4}(1-\gamma_T)\,\theta_T - \frac{2}{3}\gamma_L \theta_P^M - \frac{3\gamma_T+\gamma_L}{12}\mathbb{E}_T\left(\theta_P \mid m_L^l\right) \Bigg]^2 + \\
&\quad + \frac{1}{4} \Bigg[\frac{3}{4}(1-\gamma_T)\,\theta_T + \frac{1}{4}(1-\gamma_L)\,\theta_L + \frac{3\gamma_T+\gamma_L}{4}\mathbb{E}_T\left(\theta_P \mid m_L^l\right) - \frac{3}{4}(1-\gamma_L)\,\theta_L - \frac{1}{4}(1-\gamma_T)\,\theta_T + \\
&\quad - \frac{2}{3}\gamma_L \theta_P^M - \frac{3\gamma_T+\gamma_L}{12}\mathbb{E}_T\left(\theta_P \mid m_L^l\right) \Bigg]^2 \Bigg\} = \\
&-k_L \Bigg\{ \frac{1}{2} \Bigg[(1-\gamma_L)\,\theta_L + \gamma_L \theta_P^M - \frac{3}{4}(1-\gamma_L)\,\theta_L - \frac{1}{4}(1-\gamma_T)\,\theta_T - \frac{2}{3}\gamma_L \theta_P^M - \frac{3\gamma_T+\gamma_L}{12}\mathbb{E}_T\left(\theta_P \mid m_L^h\right) \Bigg]^2 + \\
&\quad + \frac{1}{4} \Bigg[\frac{3}{4}(1-\gamma_T)\,\theta_T + \frac{1}{4}(1-\gamma_L)\,\theta_L + \frac{3\gamma_T+\gamma_L}{4}\mathbb{E}_T\left(\theta_P \mid m_L^h\right) - \frac{3}{4}(1-\gamma_L)\,\theta_L - \frac{1}{4}(1-\gamma_T)\,\theta_T + \\
&\quad - \frac{2}{3}\gamma_L \theta_P^M - \frac{3\gamma_T+\gamma_L}{12}\mathbb{E}_T\left(\theta_P \mid m_L^h\right) \Bigg]^2 \Bigg\}.
\end{aligned}
\tag{A.5}
$$

According to (A.5), when the realized state of nature is on the boundary between two partitions, A_L must be indifferent between communicating $m_L = m_L^l$ and $m_L = m_L^h$. We can rewrite (A.5):

$$
\begin{aligned}
&-\Bigg\{ \frac{1}{4} \left[\frac{3}{4}\left((1-\gamma_L)\,\theta_L - (1-\gamma_T)\,\theta_T\right) + \gamma_L \theta_P^M - B\mathbb{E}_T\left(\theta_P \mid m_L^l\right) \right]^2 \\
&\quad + \frac{1}{2} \left[\frac{3}{4}\left((1-\gamma_T)\,\theta_T - (1-\gamma_L)\,\theta_L\right) - \gamma_L \theta_P^M + B\mathbb{E}_T\left(\theta_P \mid m_L^l\right) \right]^2 \Bigg\} = \\
&\Bigg\{ \frac{1}{4} \left[\frac{3}{4}\left((1-\gamma_L)\,\theta_L - (1-\gamma_T)\,\theta_T\right) + \gamma_L \theta_P^M - B\mathbb{E}_T\left(\theta_P \mid m_L^h\right) \right]^2 \\
&\quad + \frac{1}{2} \left[\frac{3}{4}\left((1-\gamma_T)\,\theta_T - (1-\gamma_L)\,\theta_L\right) - \gamma_L \theta_P^M + B\mathbb{E}_T\left(\theta_P \mid m_L^h\right) \right]^2 \Bigg\},
\end{aligned}
\tag{A.6}
$$

with $B \equiv \frac{3\gamma_T+\gamma_L}{4}$.

Consider three cutoffs $\{\theta_{P,n}; \theta_{P,n-1}; \theta_{P,n-2}\}$. Hence,

$$
\begin{aligned}
\mathbb{E}_T\left(\theta_P \mid m_L^l\right) &= \frac{\theta_{P,n-2} + \theta_{P,n-1}}{2}, \\
\mathbb{E}_T\left(\theta_P \mid m_P^h\right) &= \frac{\theta_{P,n-1} + \theta_{P,n}}{2}.
\end{aligned}
$$

After replacing $\theta_{P,n-1}$ for θ_P^M, and given that θ_L, θ_T and θ_P are independently distributed, we write (A.6) as:

$$
\begin{aligned}
&-\frac{1}{4}\left[B^2\left(\frac{\theta_{P,n-2}+\theta_{P,n-1}}{2}\right)^2-2B\left(\frac{3}{4}\left(\left(1-\gamma_L\right)\theta_L-\left(1-\gamma_T\right)\theta_T\right)+\gamma_L\theta_{P,n-1}\right)\left(\frac{\theta_{P,n-2}+\theta_{P,n-1}}{2}\right)\right]\\
&-\frac{1}{2}\left[B^2\left(\frac{\theta_{P,n-2}+\theta_{P,n-1}}{2}\right)^2+2B\left(\frac{3}{4}\left(\left(1-\gamma_T\right)\theta_T-\left(1-\gamma_L\right)\theta_L\right)-\gamma_L\theta_{P,n-1}\right)\left(\frac{\theta_{P,n-2}+\theta_{P,n-1}}{2}\right)\right]\\
&=-\frac{1}{4}\left[B^2\left(\frac{\theta_{P,n-1}+\theta_{P,n}}{2}\right)^2-2B\left(\frac{3}{4}\left(\left(1-\gamma_L\right)\theta_L-\left(1-\gamma_T\right)\theta_T\right)+\gamma_L\theta_{P,n-1}\right)\left(\frac{\theta_{P,n-1}+\theta_{P,n}}{2}\right)\right]\\
&-\frac{1}{2}\left[B^2\left(\frac{\theta_{P,n-1}+\theta_{P,n}}{2}\right)^2+2B\left(\frac{3}{4}\left(\left(1-\gamma_T\right)\theta_T-\left(1-\gamma_L\right)\theta_L\right)-\gamma_L\theta_{P,n-1}\right)\left(\frac{\theta_{P,n-1}+\theta_{P,n}}{2}\right)\right].
\end{aligned}
\tag{A.7}
$$

After some manipulation, because $\theta_{P,n}^2-\theta_{P,n-2}^2=\left(\theta_{P,n}-\theta_{P,n-2}\right)\left(\theta_{P,n}+\theta_{P,n-2}\right)$ we obtain the following non-homogeneous difference equation:

$$\theta_{P,n}-2\left(\frac{2\gamma_L-B}{B}\right)\theta_{P,n-1}+\theta_{P,n-2}=4\frac{T}{B}, \tag{A.8}$$

with $T\equiv\frac{3}{4}\left(\left(1-\gamma_L\right)\theta_L-\left(1-\gamma_T\right)\theta_T\right)$. We look for the general solution to (A.8). As a first step, we consider the homogeneous difference equation:

$$\theta_{P,n}-2\left(\frac{2\gamma_L-B}{B}\right)\theta_{P,n-1}+\theta_{P,n-2}=0. \tag{A.9}$$

Suppose $\theta_{P,n}=Aw^n$. Then, from (A.9), we obtain:

$$w^2-2\left(\frac{2\gamma_L-B}{B}\right)w2+1=0 \quad\rightarrow\quad w=\frac{1}{B}\left[2\gamma_L-B\pm2\sqrt{\gamma_L\left(\gamma_L-B\right)}\right], \tag{A.10}$$

which gives us two distinct real roots. The general solution to the homogeneous difference equation is:

$$\theta_{P,n}=A_1\left\{\frac{1}{B}\left[2\gamma_L-B+2\sqrt{\gamma_L\left(\gamma_L-B\right)}\right]\right\}^n+A_2\left\{\frac{1}{B}\left[2\gamma_L-B-2\sqrt{\gamma_L\left(\gamma_L-B\right)}\right]\right\}^n, \tag{A.11}$$

where A_1 and A_2 are two generic constants.

As a second step, we find a particular solution to the non-homogeneous difference equation in (A.8). Because the term on the right-hand side (RHS) is a constant, we have:

$$\theta_{P,n}=\frac{4\frac{T}{B}}{1-2\left(\frac{2\gamma_L-B}{B}\right)+1} \quad\rightarrow\quad \theta_{P,n}=\frac{T}{B-\gamma_L}. \tag{A.12}$$

Therefore, from (A.11) and (A.12), the general solution to (A.8) is:

$$\theta_{P,n}=A_1\left\{\frac{1}{B}\left[2\gamma_L-B+2\sqrt{\gamma_L\left(\gamma_L-B\right)}\right]\right\}^n+A_2\left\{\frac{1}{B}\left[2\gamma_L-B-2\sqrt{\gamma_L\left(\gamma_L-B\right)}\right]\right\}^n+\frac{T}{B-\gamma_L}, \tag{A.13}$$

where A_1 and A_2 are two generic constants. In order to find values for these constants, we impose the following condition:

$$\theta_{P,0} = \frac{T}{B-\gamma_L} \quad \rightarrow \quad A_1 + A_2 = 0 \quad \rightarrow \quad A_1 = -A_2. \tag{A.14}$$

The equality in (A.14) holds because A_L has no incentive to lie when $\theta_P = \frac{T}{B-\gamma_L}$. The second equality we exploit to find the solution to our difference equation is:

$$\theta_{P,1} = A_1 \left\{ \frac{1}{B} \left[2\gamma_L - B + 2\sqrt{\gamma_L (\gamma_L - B)} \right] \right\} + A_2 \left\{ \frac{1}{B} \left[2\gamma_L - B - 2\sqrt{\gamma_L (\gamma_L - B)} \right] \right\} + \frac{T}{B-\gamma_L}, \tag{A.15}$$

After substituting $A_1 = -A_2$ in (A.15), we obtain:

$$A_1 = \frac{B}{4\sqrt{\gamma_L (\gamma_L - B)}} \left(\theta_{P,1} + \frac{T}{\gamma_L - B} \right), \quad A_2 = -\frac{B}{4\sqrt{\gamma_L (\gamma_L - B)}} \left(\theta_{P,1} + \frac{T}{\gamma_L - B} \right). \tag{A.16}$$

From (A.16), we can rewrite (A.13):

$$\begin{aligned} \theta_{P,n} + \frac{T}{\gamma_L - B} = & \frac{B\left(\theta_{P,1} + \frac{T}{\gamma_L - B}\right)}{4\sqrt{\gamma_L (\gamma_L - B)}} \left\{ \frac{1}{B} \left[2\gamma_L - B + 2\sqrt{\gamma_L (\gamma_L - B)} \right] \right\}^n + \\ & \frac{B\left(\theta_{P,1} + \frac{T}{\gamma_L - B}\right)}{4\sqrt{\gamma_L (\gamma_L - B)}} \left\{ \frac{1}{B} \left[2\gamma_L - B - 2\sqrt{\gamma_L (\gamma_L - B)} \right] \right\}^n . \end{aligned} \tag{A.17}$$

Consider two cutoffs, $n - x$ and n. Define $Q = -T \equiv \frac{1-\tilde{r}_T}{1-\tilde{r}_L\tilde{r}_T} \left((1-\gamma_T)\,\theta_T - (1-\gamma_L)\,\theta_L \right)$. Then, $\frac{\theta_{P,n-x} - \frac{Q}{\gamma_L - B}}{\theta_{P,n} - \frac{Q}{\gamma_l - B}} =$

$$= \frac{\frac{B\left(\theta_{P,1} + \frac{T}{\gamma_L - B}\right)}{4\sqrt{\gamma_L(\gamma_L - B)}} \left\{ \left[\frac{1}{B} \left(2\gamma_L - B + 2\sqrt{\gamma_L (\gamma_L - B)} \right) \right]^{n-x} - \left\{ \frac{1}{B} \left[2\gamma_L - B - 2\sqrt{\gamma_L (\gamma_L - B)} \right] \right]^{n-x} \right\}}{\frac{B\left(\theta_{P,1} + \frac{T}{\gamma_L - B}\right)}{4\sqrt{\gamma_L(\gamma_L - B)}} \left\{ \left[\frac{1}{B} \left(2\gamma_L - B + 2\sqrt{\gamma_L (\gamma_L - B)} \right) \right]^{n} - \left\{ \frac{1}{B} \left[2\gamma_L - B - 2\sqrt{\gamma_L (\gamma_L - B)} \right] \right]^{n} \right\}}. \tag{A.18}$$

As we let n go to infinity to solve for the most informative partition, we obtain:

$$\frac{\theta_{P,n-x} - \frac{Q}{\gamma_L - B}}{\bar{\theta} - \frac{Q}{\gamma_l - B}} = \left[\frac{2\gamma_L - B + 2\sqrt{\gamma_L (\gamma_L - B)}}{B} \right]^{n-x} \left[\frac{B}{2\gamma_L - B + 2\sqrt{\gamma_L (\gamma_L - B)}} \right]^{n}, \tag{A.19}$$

because

$$\lim_{n \to \infty} \left[\frac{2\gamma_L - B - 2\sqrt{\gamma_L (\gamma_L - B)}}{B} \right]^{n-x} = 0. \tag{A.20}$$

From (A.19), we obtain:

$$\theta_{P,n-x} - \frac{Q}{\gamma_L - B} = \left[\frac{B}{2\gamma_L - B + 2\sqrt{\gamma_L(\gamma_L - B)}}\right]^x \left(\bar{\theta} - \frac{Q}{\gamma_L - B}\right), \tag{A.21}$$

which gives the cutoffs of the finest incentive-compatible partitions:

$$\theta_{P,n} - \frac{Q}{\gamma_L - B} = (\alpha_L)^{|n|}\left(\bar{\theta} - \frac{Q}{\gamma_L - B}\right), \quad with \quad n \in \{-\infty, ..., +\infty\}, \tag{A.22}$$

where $\alpha_L = \frac{B}{2\gamma_L - B + 2\sqrt{\gamma_L(\gamma_L - B)}} \in [0,1]$, with $B \equiv \frac{3}{4}\gamma_T + \frac{1}{4}\gamma_L$ and $Q \equiv \frac{3}{4}\left((1-\gamma_T)\theta_T - (1-\gamma_L)\theta_L\right)$.

Finally, note that the quality of communication improves (i.e. α_L approaches 1) as γ_T tends to γ_L. ■

Proof of Lemma 7. We start the proof by assuming away the communication structure by which P sets-up 'indirect communication' with A_T acting as an intermediary. We prove that this communication structure is dominated at the end of this proof.

First, we report P's expected payoff under *Separation* and 'direct communication' (i.e., $\mathbf{g} = \{L, T, 1, 1\}$). From the analysis in Section 3.2.2, we have:

$$\begin{aligned} U_P(i,j) = &-\Bigg\{\frac{k_i}{2}\left[\left((1-\gamma_P) - \frac{3}{4}(1-\gamma_i)\right)^2 + \frac{1}{16}(1-\gamma_j)^2\right] + \\ &+ \frac{k_j}{2}\left[\left((1-\gamma_P) - \frac{3}{4}(1-\gamma_j)\right)^2 + \frac{1}{16}(1-\gamma_i)^2\right] + \left(\frac{k_i}{4} + \frac{k_j}{4}\right)\frac{1}{4}\left[(1-\gamma_i)^2 + (1-\gamma_j)^2\right]\Bigg\}\frac{\theta^2}{3} + \\ &- \left\{\frac{k_i}{2}\left(\gamma_P - \frac{3}{4}\gamma_i - \frac{1}{4}\gamma_j\right)^2 + \frac{k_j}{2}\left(\gamma_P - \frac{3}{4}\gamma_j - \frac{1}{4}\gamma_i\right)^2 + \left(\frac{k_i}{4} + \frac{k_j}{4}\right)\frac{1}{4}(\gamma_i - \gamma_j)^2\right\}\frac{\bar{\theta}^2}{3} - 2f, \end{aligned} \tag{A.23}$$

for $i, j \, \{L, T\}$ and $i \neq j$.

To establish parts $i.a)$ and $ii.a)$, note that, for $f = 0$, from (19)-(A.23)-(B.29), P prefers 'direct communication' to 'indirect communication' and 'no communication'. In particular, when comparing the expected payoffs to P from 'direct' and 'indirect' communication – as given by (A.23) and (B.29) – we have that, for $f = 0$, the information loss caused by 'indirect communication' negatively affects P's payoff from both units. To prove that P incurs a loss from D_T, note that the information loss implied by 'indirect communication' generates both less adaptation and less external coordination within this unit. To prove that P incurs a loss from D_L, note that 1) $\mathbb{E}\left((\mathbb{E}\theta_P)^2\right) \leq \frac{\bar{\theta}^2}{3}$, 2) the term that multiplies $\mathbb{E}\left((\mathbb{E}\theta_P)^2\right)$ in (B.29) is negative when $k_T = 0$, and 3) the sum of the two terms that multiply $\mathbb{E}\left((\mathbb{E}\theta_P)^2\right)$ and $\frac{\bar{\theta}^2}{3}$ in (B.29) is equal to the term that multiplies $\frac{\bar{\theta}^2}{3}$ in (A.23). We can therefore conclude that there must exist a threshold such that P prefers 'direct communication' to any of the alternative communication structures for sufficiently low values of f.

To establish parts $i.b)$ and $ii.c)$, we simply note that, as the cost of communication goes to infinity,

P's expected loss from establishing any communication channel – either 'direct' or 'indirect' – increases, whereas P's expected loss from 'no communication' does not vary. We can therefore conclude that there must exist a threshold such that P prefers 'no communication' to any of the alternative communication structures for sufficiently high values of f.

To complete the proof with point $ii.b$), note that as f increases, P's expected loss from 'indirect communication' (with A_L acting as an intermediary) increases at a slower rate than P's expected loss from 'direct communication' (see (A.23) and (B.29)). Therefore:

a) there exists a threshold $\hat{f}$ such that P prefers $\{C_L, C_T\} = \{1, 1\}$ ('direct communication') to $\{C_L, C_T\} = \{0, 0\}$ ('no communication') for $f \leq \hat{f}$, and viceversa for $f > \hat{f}$. From (19) and (A.23), as γ_T increases, P's expected loss from 'direct communication' decreases at a faster rate than P's expected loss from 'no communication'. Therefore, $\hat{f}(\gamma_T, \cdot)$ increases with γ_T;

b) there exists a threshold $\tilde{f}$ such that P prefers $\{C_L, C_T\} = \{1, 1\}$ ('direct communication') to $\{C_L, C_T\} = \{1, 0\}$ ('indirect communication') for $f \leq \tilde{f}$, and viceversa for $f > \tilde{f}$. As γ_T increases, from (A.23) and (B.29), all else equal P's expected payoff from 'indirect communication' varies at a faster rate than P's expected payoff from 'direct communication', with the two payoffs converging: This occurs because $\mathbb{E}\left(\mathbb{E}_T(\theta_P)^2\right) \geq \frac{\bar{\theta}^2}{3}$, where $\mathbb{E}\left(\mathbb{E}_T(\theta_P)^2\right)$ in (B.39) decreases with γ_T. Therefore, $\tilde{f}(\gamma_T, \cdot)$ decreases with γ_T;

c) there exists a threshold f^* such that P prefers $\{C_L, C_T\} = \{1, 0\}$ ('indirect communication') to $\{C_L, C_T\} = \{0, 0\}$ ('no communication') for $f \leq f^*$, and viceversa for $f > f^*$.

We can now offer a full characterization of P's preferred communication structure under *Separation*. Suppose first that $\hat{f} \leq \tilde{f}$. This implies that, at $f = \hat{f}$, P's expected loss under 'indirect communication' is higher than under the two alternative communication structures, which further implies $f^* < \hat{f}$. Therefore, P prefers $\{C_L, C_T\} = \{1, 1\}$ for $f \leq \hat{f}$, and $\{C_L, C_T\} = \{0, 0\}$ for $f > \hat{f}$. Suppose now that $\hat{f} > \tilde{f}$, meaning that P's expected loss under 'no communication' is higher than the two alternative communication structures at $f = \tilde{f}$. Because P's expected loss from 'direct communication' increases at a faster rate than that from 'indirect communication' as f increases, we have that $f^* > \hat{f}$. Therefore, in this case, P prefers $\{C_L, C_T\} = \{1, 1\}$ for $f \leq \tilde{f}$, $\{C_L, C_T\} = \{1, 0\}$ for $\tilde{f} < f \leq f^*$, and $\{C_L, C_T\} = \{L, T, 0, 0\}$ for $f > f^*$. Finally, note that because the threshold $\hat{f}$ increases with γ_T, whereas the threshold $\tilde{f}$ decreases with γ_T, there may exist a threshold for γ_T such that the condition $\hat{f} \leq \tilde{f}$ holds for sufficiently low values of γ_T, and vice versa.[35]

We conclude the proof by establishing that P prefers 'indirect communication' with A_L rather than A_T acting as an intermediary, that is, $\boldsymbol{g} = \{L, T, 1, 0\} \succeq_P \boldsymbol{g} = \{L, T, 0, 1\}$. Under $\boldsymbol{g} = \{L, T, 0, 1\}$, elites'

[35]Given our assumption $\gamma_T \leq \gamma_L$ (**A2**), whether such a threshold on γ_T belongs to the admissible set $[0, \gamma_L]$ depends on the values of γ_L and γ_P.

regulatory decisions and economic actions are:

$$r_L(L,T,1,0) = a_L(L,T,1,0) = \frac{3}{4}(1-\gamma_L)\theta_L + \frac{1}{4}(1-\gamma_T)\theta_T + \frac{3\gamma_L+\gamma_T}{4}\mathbb{E}_L(\theta_P|m_T), \tag{A.24}$$

$$r_T(L,T,1,0) = a_T(L,T,1,0) = \frac{3}{4}(1-\gamma_T)\theta_T + \frac{1}{4}(1-\gamma_L)\theta_L + \frac{2}{3}\gamma_T\theta_P + \frac{3\gamma_L+\gamma_T}{12}\mathbb{E}_L(\theta_P|m_T), \tag{A.25}$$

where m_T denotes the cheap-talk message sent by A_T to A_L. Equilibrium messages can be computed by following the procedure shown in Lemma 6. From α_L (as defined in the proof of Lemma 6) and $\gamma_L \geq \gamma_T$, we have that the quality of communication between elites is higher under $\boldsymbol{g} = \{L,T,1,0\}$ than $\boldsymbol{g} = \{L,T,0,1\}$.[36] Because the elite who attaches the higher value to θ_P – i.e., the elite with preferences closer to those of P – is the least informed, and because quality of communication decreases, we have that P's expected loss is larger under $\boldsymbol{g} = \{L,T,0,1\}$ than under $\boldsymbol{g} = \{L,T,1,0\}$. ■

Proof of Proposition 2. The proof for statements $a)$ and $b)$ follows from Lemma 5, Lemma 7, and Proposition 1. Also, note that the threshold $\tilde{k}$ is computed by comparing P's expected payoff under *L-Integration* with 'indirect communication' to P's expected payoff under *Separation* with 'direct communication'. The computation of this threshold differs from that of $\underline{k}$ in the proof of Proposition 1 only in that P's expected payoffs under incomplete information include the cost of communication. The inclusion of this cost (equal to f under *L-Integration* and equal to $2f$ under *Separation*) implies that $\underline{k} < \tilde{k}$. ■

Proof of Lemma 10. We begin the proof by reporting players' equilibrium actions under *Separation*. Specifically, we have:

$$\begin{aligned} a_P(L,T) &= \frac{5k_L+k_T}{6(k_L+k_T)}(1-\gamma_L)\theta_L + \frac{k_L+5k_T}{6(k_L+k_T)}(1-\gamma_T)\mathbb{E}_P(\theta_T) \\ &\quad + \frac{(5k_L+k_T)\gamma_L + (k_L+5k_T)\gamma_T}{6(k_L+k_T)}\theta_P, \end{aligned} \tag{A.26}$$

$$\begin{aligned} r_L(L,T) = a_L(L,T) &= \frac{5k_L+4k_T}{6(k_L+k_T)}(1-\gamma_L)\theta_L + \frac{1}{8}(1-\gamma_T)\theta_T \\ &\quad + \frac{5k_L+k_T}{24(k_L+k_T)}(1-\gamma_T)\mathbb{E}_P(\theta_T) + \frac{(5k_L+4k_T)\gamma_L + (k_L+2k_T)\gamma_T}{6(k_L+k_T)}\theta_P, \end{aligned} \tag{A.27}$$

$$\begin{aligned} r_T(L,T) = a_T(L,T) &= \frac{5}{8}(1-\gamma_T)\theta_T + \frac{5k_T+k_L}{6(k_L+k_T)}(1-\gamma_T)\mathbb{E}_P(\theta_T) \\ &\quad + \frac{2k_L+k_T}{6(k_L+k_T)}(1-\gamma_L)\theta_L + \frac{(5k_T+4k_L)\gamma_T + (k_T+2k_L)\gamma_L}{6(k_L+k_T)}\theta_P, \end{aligned} \tag{A.28}$$

[36] It is enough to invert L and T in the formula for α_L to obtain this result. Also, note that **A8** still ensures that there exists a value of θ_P that induces truthful revelation.

where $\mathbb{E}_P(\theta_T)$ denotes P's expectation about θ_T, which varies depending on the communication between ruler and elites. Three possible cases can arise. First, if there is no communication between ruler and elites, $\mathbb{E}_P(\theta_T) = 0$. Second, if P communicates directly with A_T, $\mathbb{E}_P(\theta_T) = \theta_T$ because information is verifiable. Finally, when P communicates with A_L, she forms beliefs $\mathbb{E}_P\left(\theta_T \mid m_L^R\right)$.

To prove the result, assume $k_L = k_T$ and $\gamma_P = \gamma_L = \gamma_T$. We proceed in two steps.

First, we compute P's expected loss $i)$ when $\mathbb{E}_P(\theta_T) = 0$ (i.e., 'no communication') and $ii)$ when $\mathbb{E}_P(\theta_T) = \theta_T$ (i.e., 'direct communication' with A_T). In case $i)$, equilibrium actions are given by (A.26)-(A.27)-(A.28), with $\mathbb{E}_P(\theta_T) = 0$. In case $ii)$, actions are given by (C.43) and (C.44). For both cases, we plug the relevant actions in P's utility given by (23). A comparison of the two expected utilities reveals that P incurs a smaller loss in expectation when perfectly informed about θ_T. By continuity, we have that P prefers to acquire accurate information to no information for sufficiently high values of k_T and sufficiently homogeneous values of γ_P, γ_L, and γ_T.

Second, we compare P's expected loss under *direct communication* with A_T to that she would incur when she learns θ_T *indirectly*, i.e., via communication with A_L. In the latter case, Lemma 9 establishes that the most informative equilibrium of the cheap-talk game played between A_L and P does not result in truthful information revelation. Given $\tilde{f} = \epsilon$, this information loss in turn implies that P's expected payoff lies in between that of 'no communication' and 'direct communication', which finally proves the lemma. ■

Proof of Proposition 3. Consider first the case in which P chooses *L-Integration*. From Lemma 8, we have that no direct communication is established between P and A_T. Also, in this case players' actions and payoffs are identical to the case of complete information.

Second, consider the case in which P chooses *Separation*. Because we focus on the case in which players' preferences are sufficiently homogeneous, from Lemma 10, we have that P's preferred communication structure involves direct communication with A_T for sufficiently high values of k_T. In this case, players' actions and payoffs are also equal to those in the complete information game, but for the extra-cost $\tilde{f} = \epsilon$ incurred by P.

Therefore, the result follows from Proposition C.1 (see Section C.1 in the appendix). ■

B Lemmas

Lemma B1. *Given* $\mathbf{g} = \{L, T, 1, 0\}$*, P's expected loss is:*

$$
\begin{aligned}
U_P(L,T,1,0) = -\Bigg\{ & \frac{k_L}{2}\left[\left((1-\gamma_P)-\frac{3}{4}(1-\gamma_L)\right)^2+\frac{1}{16}(1-\gamma_T)^2\right] \\
& + \frac{k_T}{2}\left[\left((1-\gamma_P)-\frac{3}{4}(1-\gamma_T)\right)^2+\frac{1}{16}(1-\gamma_L)^2\right] \\
& + \left(\frac{k_L}{4}+\frac{k_T}{4}\right)\frac{1}{4}\left[(1-\gamma_L)^2+(1-\gamma_T)^2\right]\Bigg\}\frac{\underline{\theta}^2}{3} \\
& - \left\{\frac{k_L}{2}\left(\gamma_P-\frac{2}{3}\gamma_L\right)^2+\frac{k_T}{2}\gamma_P^2+\left(\frac{k_L}{4}+\frac{k_T}{4}\right)\frac{4}{9}\gamma_L^2\right\}\frac{\bar{\theta}^2}{3} \\
& - \mathbb{E}\Big(\mathbb{E}_T(\theta_P)\Big)^2\Bigg\{\left(\frac{k_L}{18}+\frac{k_T}{2}\right)\left(\frac{3}{4}\gamma_T+\frac{1}{4}\gamma_L\right)^2 \\
& + \left(\frac{k_L}{4}+\frac{k_T}{4}\right)\frac{4}{9}\left(\frac{3}{4}\gamma_T+\frac{1}{4}\gamma_L\right)^2 \\
& - 2\left(\frac{3}{4}\gamma_T+\frac{1}{4}\gamma_L\right)\Bigg[\frac{k_L}{6}\left(\gamma_P-\frac{2}{3}\gamma_L\right)+\frac{k_T}{2}\gamma_P \\
& + \left(\frac{k_L}{4}+\frac{k_T}{4}\right)\frac{4}{9}\gamma_L\Bigg]\Bigg\} - f,
\end{aligned}
\tag{B.29}
$$

where

$$
\begin{aligned}
\mathbb{E}\left(\left(\mathbb{E}_T\theta_P\right)^2\right) = & \frac{1}{4}\Bigg[\left(1+\frac{\alpha_L(1-\alpha_L)}{1-\alpha_L^3}\right)\bar{\theta}_P^2 \\
& - \left(1-\frac{3\alpha_L(1-\alpha_L)}{1-\alpha_L^3}\right)\left(\frac{\underline{\theta}}{\gamma_L-\gamma_T}\right)^2 \\
& \times\left(\frac{(1-\gamma_L)^2}{3}+\frac{(1-\gamma_T)^2}{3}-\frac{(1-\gamma_L)(1-\gamma_T)}{2}\right)\Bigg],
\end{aligned}
\tag{B.30}
$$

with α_L defined in the proof of Lemma 6.

Proof. In order to define $\mathbb{E}\left((\mathbb{E}_T(\theta_P))^2\right)$, we first compute the following components:

(a) *Probabilities:*

$$
\begin{aligned}
Pr\left(\theta_P \in \left[\theta_{P,k-1},\theta_{P,k}\right]\right) & = \frac{1}{\frac{2\bar{\theta}_P}{\left(\bar{\theta}_P-\frac{Q}{\gamma_L-B}\right)\left(\alpha_L^{k-1}-\alpha_L^k\right)}} \\
& = \frac{\left(\bar{\theta}_P-\frac{Q}{\gamma_L-B}\right)}{2}\left(\alpha_L^{k-1}-\alpha_L^k\right), \ \text{ if } \ \theta_P > \frac{Q}{\gamma_L-B};
\end{aligned}
\tag{B.31}
$$

$$Pr\left(\theta_{_P}\in\left[\theta_{_{P,-k}},\theta_{_{P,-(k-1)}}\right]\right)=\frac{1}{\frac{2\bar{\theta}_P}{\left(\bar{\theta}_P+\frac{Q}{\gamma_L-B}\right)\left(-\alpha_L^k+\alpha_L^{k-1}\right)}}$$

$$=\frac{\left(\bar{\theta}_P+\frac{Q}{\gamma_L-B}\right)}{2}\left(\alpha_L^{k-1}-\alpha_L^k\right),\ \text{ if }\ \theta_{_P}<\frac{Q}{\gamma_L-B}. \tag{B.32}$$

(b) *Conditional Expectations:* The cutoffs of the partitions are:

$$\theta_{P,k}=\frac{Q}{\gamma_L-B}+\alpha_L^{k-1}\left(\bar{\theta}_P+\frac{Q}{\gamma_L-B}\right),\ \text{ if }\ \theta_{_P}>\frac{Q}{\gamma_L-B}, \tag{B.33}$$

$$\theta_{P,k}=\frac{Q}{\gamma_L-B}-\alpha_L^{k-1}\left(\bar{\theta}_P+\frac{Q}{\gamma_L-B}\right),\ \text{ if }\ \theta_{_P}<\frac{Q}{\gamma_L-B}. \tag{B.34}$$

Therefore, conditional expectations are:

$$\mathbb{E}_{_T}\left(\theta_{_P}\mid m_{_{L,k}}\right)=\frac{Q}{\gamma_L-B}+\frac{\alpha_L^{k-1}\left(1+\alpha_L\right)}{2}\left(\bar{\theta}_P-\frac{Q}{\gamma_L-B}\right),$$
$$\text{if }\ \theta_{_P}>\frac{Q}{\gamma_L-B}; \tag{B.35}$$

$$\mathbb{E}_{_T}\left(\theta_{_P}\mid m_{_{L,k}}\right)=\frac{Q}{\gamma_L-B}-\frac{\alpha_L^{k-1}\left(1+\alpha_L\right)}{2}\left(\bar{\theta}_P+\frac{Q}{\gamma_L-B}\right),$$
$$\text{if }\ \theta_{_P}<\frac{Q}{\gamma_L-B}; \tag{B.36}$$

(c) *Ex ante Expectations and Variances:*

$$\begin{aligned}\mathbb{E}\left(\mathbb{E}_{_T}\theta_{_P}\right)^2=&\int_{-\underline{\theta}}^{\underline{\theta}}\int_{-\underline{\theta}}^{\underline{\theta}}\left\{\sum_{k=1}^{\infty}\left[\frac{\left(\bar{\theta}_P-\frac{Q}{\gamma_L-B}\right)}{2}\left(\alpha_L^{k-1}-\alpha_L^k\right)\times\right.\right.\\&\left.\times\left(\frac{Q}{\gamma_L-B}+\frac{\alpha_L^{k-1}\left(1+\alpha_L\right)}{2}\left(\bar{\theta}_P-\frac{Q}{\gamma_L-B}\right)\right)^2\right]+\\&+\sum_{k=1}^{\infty}\left[\frac{\left(\bar{\theta}_P+\frac{Q}{\gamma_L-B}\right)}{2}\left(\alpha_L^{k-1}-\alpha_L^k\right)\times\right.\\&\left.\left.\times\left(\frac{Q}{\gamma_L-B}-\frac{\alpha_L^{k-1}\left(1+\alpha_L\right)}{2}\left(\bar{\theta}_P+\frac{Q}{\gamma_L-B}\right)\right)^2\right]\right\}\times\\&\times\frac{1}{2\underline{\theta}}\frac{1}{2\underline{\theta}}d\theta_Ld\theta_T,\end{aligned} \tag{B.37}$$

where expectations must be taken with respect to the realizations of θ_L and θ_T, because $i)$ Q depends on the realizations of the local states, and $ii)$ P is uninformed about these realizations when selecting the structure of vertical communication. (B.37) can be rewritten as:

$$\begin{aligned}\mathbb{E}\left(\left(\mathbb{E}_T\theta_P\right)^2\right) = \int_{-\underline{\theta}}^{\underline{\theta}}\int_{-\underline{\theta}}^{\underline{\theta}} \Bigg\{ \frac{1}{4}\Bigg[&\left(1+\frac{\alpha_L\left(1-\alpha_L\right)}{1-\alpha_L^3}\right)\bar{\theta}_P^2 \\ &-\left(1-\frac{3\alpha_L\left(1-\alpha_L\right)}{1-\alpha_L^3}\right)\left(\frac{Q}{\gamma_L-B}\right)^2\Bigg]\Bigg\}\times \\ &\times\frac{1}{2\underline{\theta}}\frac{1}{2\underline{\theta}}d\theta_L d\theta_T,\end{aligned} \tag{B.38}$$

which gives:

$$\begin{aligned}\mathbb{E}\left(\left(\mathbb{E}_T\theta_P\right)^2\right) =&\frac{1}{4}\Bigg[\left(1+\frac{\alpha_L\left(1-\alpha_L\right)}{1-\alpha_L^3}\right)\bar{\theta}_P^2 \\ &-\left(1-\frac{3\alpha_L\left(1-\alpha_L\right)}{1-\alpha_L^3}\right)\left(\frac{\underline{\theta}}{\gamma_L-\gamma_T}\right)^2 \\ &\times\left(\frac{\left(1-\gamma_L\right)^2}{3}+\frac{\left(1-\gamma_T\right)^2}{3}-\frac{\left(1-\gamma_L\right)\left(1-\gamma_T\right)}{2}\right)\Bigg].\end{aligned} \tag{B.39}$$

Finally, (B.29) follows from (B.39), $\mathbb{E}\left(\theta_L^2\right) = \mathbb{E}\left(\theta_T^2\right) = \frac{\underline{\theta}^2}{3}$, $\mathbb{E}\left(\theta_P^2\right) = \frac{\bar{\theta}^2}{3}$, and $\mathbb{E}\left(\theta_P\mathbb{E}_T\left(\theta_P\right)\right) = \mathbb{E}\left(\left(\mathbb{E}_T\left(\theta_P\right)\right)^2\right)$. □

C Bottom-Up Communication

C.1 Complete Information: Analysis

We start by first considering the case in which $\{\theta_P, \theta_L, \theta_T\}$ are common knowledge.

Integration. Suppose A_i sets regulatory decisions in both D_i and D_j, for $i, j = \{L, T\}$ and $i \neq j$. Equilibrium choices are given by (6) and:

$$a_P\left(i,i\right) = \left(1-\gamma_i\right)\theta_i + \gamma_i\theta_P, \tag{C.40}$$

$$r_j\left(i,i\right) = 4\left(1-\gamma_i\right)\theta_i - 3\left(1-\gamma_j\right)\theta_j + \left(4\gamma_i-3\gamma_j\right)\theta_P. \tag{C.41}$$

As in the main analysis, A_i exploits his administrative control over D_j to achieve perfect internal and external coordination around his ideal point. This, in turn, induces P to also select an action that matches A_i's ideal point. As a result, P's action is independent of θ_j.

From (23), (6), (C.40) and (C.41), P's expected payoff is:

$$U_P(i,i) = -\left\{\frac{k_i}{2}(\gamma_P - \gamma_i)^2 + k_j\left[(1-\gamma_i)^2 + \frac{3}{2}(1-\gamma_j)^2 + \frac{(1-\gamma_P)^2}{2}\right]\right\}\frac{\theta^2}{3} + \\ -\left\{\frac{k_i}{2}(\gamma_P - \gamma_i)^2 + k_j\left[\frac{(\gamma_P-\gamma_i)^2}{2} + \frac{3}{2}(\gamma_i - \gamma_j)^2\right]\right\}\frac{\bar{\theta}^2}{3}. \tag{C.42}$$

In line with the result we derived in Lemma 1 for the baseline model, the following lemma states that P prefers an integrated structure led by A_L (*L-Integration*) to one led by A_T (*T-Integration*). Intuitively, the result follows from **A2-A3**.

Lemma C1. *Under complete information, P weakly prefers L-Integration to T-Integration.*

Proof. Given (6) and (C.40), the proof follows that of Lemma 1. □

Separation. Elites optimally set $r_i(L,T) = a_i(L,T)$ and players' equilibrium choices are:

$$a_P(L,T) = \frac{5k_L + k_T}{6(k_L+k_T)}(1-\gamma_L)\theta_L + \frac{k_L + 5k_T}{6(k_L+k_T)}(1-\gamma_T)\theta_T \\ + \frac{(5k_L+k_T)\gamma_L + (k_L+5k_T)\gamma_T}{6(k_L+k_T)}\theta_P, \tag{C.43}$$

$$r_i(L,T) = a_i(L,T) = \frac{5k_i + 4k_j}{6(k_i+k_j)}(1-\gamma_i)\theta_i + \frac{k_i + 2k_j}{6(k_i+k_j)}(1-\gamma_j)\theta_j \\ + \frac{(5k_i+4k_j)\gamma_i + (k_i+2k_j)\gamma_j}{6(k_i+k_j)}\theta_P, \tag{C.44}$$

for $i, j \in \{L,T\}$ and $i \neq j$, where (C.44) is identical to (10) for $k_L = k_T$. Unlike the baseline analysis, elites' choices now incorporate the economic significance of each unit. This characteristic arises due to the incentive elites possess to align their economic actions with the action taken by P, who, in turn, takes into account the relative sizes of the units. As a result, a larger value of k_i relative to that of k_j leads to actions that are closer to A_i's ideal point.

Building on this logic, the next lemma asserts that, from P's perspective, *Separation* results in a greater loss associated with unit D_L compared to *L-Integration*.

Lemma C2. *Under complete information, P's expected loss associated with unit D_L (i) is lower under L-Integration than under Separation, and (ii) is independent of (resp., increasing in) k_T under L-Integration (resp., Separation).*

Proof. See Appendix C.2. □

Taken together, Lemmas C1 and C2 imply that P's preferred allocation of decision rights is *L-Integration* for sufficiently low values of k_T. The following lemma describes P's expected loss associated to unit D_T when k_T takes the largest possible value.

Lemma C3. *Under complete information, P's expected loss associated with unit D_T is lower under Separation than under L-Integration for $k_T = k_L$.*

Proof. See Appendix C.2. □

We can now derive the equilibrium governance structure in the complete information game.

Proposition C.1. *Under complete information, there exists a threshold $\underline{k}^E$ such that P chooses L-Integration for $k_T \in \left[0, \min\left\{\underline{k}^E, k_L\right\}\right]$. Also, there exists a threshold $\overline{k}^E$ such that P chooses Separation for $k_T \in \left(\min\left\{\overline{k}^E, k_L\right\}, k_L\right]$.*

Proof. See Appendix C.2. □

Proposition C.1 mirrors the findings established for the main model (see Section 3.1), whereby P optimally allocates administrative autonomy to the urban elite as the economic importance of the town grows sufficiently large relative to that of the rural area.[37]

C.2 Complete Information: Proofs

Proof of Lemma C2. The proof of point $i)$ follows from (6)-(C.40)-(C.41) and (C.44)-(C.43). In particular, $\forall k_T$, compared to the case of *L-Integration*, P incurs a bigger loss from D_L under *Separation* due to $a)$ worse adaptation (given **A2**) and $b)$ worse *overall* coordination (both internal and external).

Concerning point $ii)$ in the Lemma, first note that equilibrium choices under *L-Integration* are independent of k_T. This proves that P's payoff associated to unit D_L is independent of k_T. Under *Separation*, equilibrium actions (C.44)-(C.43) depend on k_T. By substituting (C.44)-(C.43) in (22), we have that the only components affected by k_T are the adaptation component and the coordination component between a_P and a_L. From (C.44)-(C.43), as k_T increases, all actions attach a higher weight to the components $(1-\gamma_T)\,\theta_T$ and $\gamma_T\theta_P$. At the same time, all actions attach a lower weight to the components $(1-\gamma_L)\,\theta_L$ and $\gamma_L\theta_P$. Also, a_P varies more than a_L at equilibrium. These effects result in both greater mis-adaptation within D_L and less coordination between P's action and A_L's action, which finally proves point $ii)$. ■

Proof of Lemma C3. Suppose $k_T = k_L$. Then, (C.44) is identical to (10). We proceed by comparing the extended model introduced in Section 5 to the baseline model analysed in Sections 2 and 3.

After substituting equilibrium actions in P's expected loss functions, we have that compared to the baseline model, P's expected loss under *L-Integration* in the extended model increases by:

$$\frac{k_T}{2}\left[(1-\gamma_L)^2\,\frac{\theta^2}{2} + (1-\gamma_T)^2\,\frac{\theta^2}{2} + (\gamma_L-\gamma_T)^2\,\frac{\overline{\theta}^2}{2}\right]. \tag{C.45}$$

[37] Note that Proposition C.1 does not fully characterize the solution as $\underline{k}^E$ and $\overline{k}^E$ may not be equal to each other. This indeterminacy is due to the non-linearity of decisions with respect to $\{k_L, k_T\}$ under *Separation*.

Likewise, compared to the baseline model, P's expected loss under *Separation* in the extended model increases by:

$$\frac{k_T}{24}\left[(1-\gamma_L)^2\frac{\theta^2}{2}+(1-\gamma_T)^2\frac{\theta^2}{2}+(\gamma_L-\gamma_T)^2\frac{\overline{\theta}^2}{2}\right]. \tag{C.46}$$

Because (C.45) is larger than (C.46), we can conclude that **A5** is sufficient to ensure that P expects a lower loss from D_T under *Separation* than under *L-Integration* in the extended model as well. ■

Proof of Proposition C.1. To establish points $i)$ and $ii)$, consider first the case in which $k_T = 0$. Lemmas C1 and C2 establish that P prefers *L-Integration* to any alternative governance structure. By continuity, all else equal, *L-Integration* is P's preferred governance structure for sufficiently low values of k_T.

Consider now the case in which $k_T = k_L$. Lemmas C2 and C3 establish that, when moving from *L-Integration* to *Separation*, P expects to incur an additional loss from D_L and an additional gain on D_T. Provided the expected gain from D_T is greater than the expected loss from D_L, P prefers *Separation* to *L-Integration* for $k_L = k_T$. By continuity, all else equal, *Separation* is P's preferred governance structure for sufficiently large values of k_T. In this case, we can therefore conclude that there must exist at least one threshold for k_T, such that P's chooses *L-Integration* for $k_T \in \left[0, \underline{k}^E\right]$, where $\underline{k}^E$ denotes the smallest possible threshold. Likewise, there must exist at least one threshold for k_T, such that P's chooses *Separation* for $k_T \in \left(\overline{k}^E, k_L\right]$, where $\overline{k}^E$ denotes the largest possible threshold, with $\overline{k}^E \geq \underline{k}^E$. ■

Online Appendix

Organizing a Kingdom

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A Discussion: Incentives to Learn the Common State

In the context of our main model (Sections 2 and 3), we briefly discuss the elites' incentives to learn the realization of the common state. In the model, for simplicity we assume that elites have no choice but to listen to either P or the other elite. However, learning θ_P comes with potential costs for the urban elite, whose preferences are the least aligned with those of the ruler. As an example, consider the *L-Integration* scenario in which the landed elite knows θ_P and passes the information to the urban elite. In this case, learning θ_P can be either beneficial or detrimental to A_T, depending on the relative weight he and A_L assign to the common state. If A_T places a high enough weight on the common state and this weight is not significantly different from that of A_L, then A_T experiences gains from learning θ_P. Conversely, if the weights the elites attach to the common state differ greatly, with γ_T being low, A_T may suffer a loss from learning θ_P. This is because common knowledge about θ_P leads to actions by the landed elite that move further away from the urban elite's ideal point and generate more internal mis-coordination in the town.

Importantly, in our model A_T's benefit from learning θ_P is amplified as they gain control over the regulatory decision in their own unit.[1] This occurs because, relative to *L-Integration*, A_T can better exploit the newly acquired information to target their own ideal point. This observation underscores a complementary mechanism by which the transition from *L-Integration* to *Separation* promotes the emergence of 'direct communication'. Referring back to our main application, the ruler not only seeks to establish direct communication with administratively autonomous towns but also urban elites from these towns have strong incentives to participate in central assemblies.

[1] Formally, suppose A_T expects A_L to be informed about θ_P. Then, A_T's expected gain (resp., loss) from perfectly learning θ_P is higher (resp., lower) under *Separation* than under *L-Integration*.