Organizing a Kingdom*

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Abstract

We develop a framework that examines the organizational challenges faced by central rulers governing large territories, where administrative power needs to be delegated to local elites. We describe how economic change can motivate rulers to empower different elites and emphasize the interaction between local and nationwide institutions. The ruler's organizational choices are driven by a trade-off between elites' adaptation to local and common shocks, and the coordination of their actions across the realm. We show that rising economic potential of towns leads to local administrative power (self-governance) of urban elites. As a result, the ruler summons them to central assemblies in order to ensure effective communication and coordination between self-governing towns and the rest of the realm. This framework can explain the emergence of municipal autonomy and towns' representation in early modern European parliaments – a blueprint for Western Europe's institutional framework that promoted state-formation and economic growth in the centuries to follow. We provide empirical evidence for our core mechanisms and discuss how the model applies to other historical dynamics (ancient Rome and Spanish America), as well as to contemporary organizational problems.

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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. 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 ruler through an organizational lens. This approach provides a novel rationale to explain how different elites can gain access to political institutions. We show that as a local elite becomes economically more important, a central ruler may choose to delegate more administrative power to them. The administrative empowerment of an elite, 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 elite in general assemblies, lifting them into the circle of power-holders.

These dynamics are reflected in the institutional evolution of Western Europe following the Commercial Revolution of the 11th-13th centuries. During this period, monarchs delegated administrative control over merchant towns to urban elites, separating town jurisdictions from the influence of the landed elite (Downing, 1989; Van Zanden, Buringh, and Bosker, 2012). Concomitantly, monarchs reshaped the composition of central assemblies by including representatives from self-governing towns. This process marked 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; Angelucci, Meraglia, and Voigtländer, 2022).

Key to our analysis are the organizational challenges that centralized rulers faced in governing large 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, and thus to benefit from economic opportunities. However, administrative autonomy of local elites

can clash with the second challenge: establishing an effective system of communication to coordinate collective action and tackle external threats, 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 rationalize how rulers allocate control over local administrations and design communication structures – such as choosing whom to summon to central assemblies.

In our 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 shocks or opportunities). 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 can affect these economic decisions through rules and regulations. When delegating control over local administrations to the elites, the ruler takes into account both the economic potential of rural and urban areas, and the weight that the corresponding elites assign to the common state. A possibility available to the ruler is for one elite to govern both areas, anticipating that this elite will use its control to serve its own interests. For example, if rural 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 other possibility is for the ruler to separate jurisdictions, letting each elite govern their own areas. This improves adaptation to local shocks but reduces coordination across areas.

The ruler possesses superior information about the common state. She must decide how to share this information with the urban and landed elites in order to allow for adaptation to the common state and coordination of their decisions. The ruler communicates in a central assembly. Given the need to organize the selection of representatives and their travel to a central location, direct communication between ruler and elites in this assembly is costly. One option is to communicate solely with one elite, relying on it to inform the other elite. For example, the ruler may summon only the landed elite to assemblies and expect it to inform the merchants about a looming war. This option of "sequential communication" is less costly. 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 can engage in direct communication with both elites in an assembly, retaining control over information transmission but incurring higher costs.

Our model predicts that changes in the economic potential of urban (relative to rural) areas 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 and communicates directly only with this elite. The landed elite then informs merchants about the common state. Because the landed elite governs the town, it has no reason to manipulate the urban elite by misrepresenting this information – it can simply set regulations to influence 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 potential of towns grows, the resulting efficiency losses become more severe. For example, towns may forego significant profits from trading oriental spices if they are governed by landed elites who favor trade of their own rural products. 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 it can no longer be trusted to accurately convey information to the urban elite. For example, the landed elite may exaggerate the threat of a looming war in order to deter merchants from international trade. To restore effective communication, the ruler *directly* communicates with the urban elite by summoning it to the central assembly. As a result of this dual institutional process, the landed elite is forced to accommodate the urban elite's preferences when choosing its own actions. 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.

Beyond the economic potential of rural versus urban areas, institutional dynamics are further affected by the alignment of players' preferences regarding the common state. For instance, if the merchant elite is significantly less aligned with the ruler than the landed elite, and the ruler places high weight on the common state, then granting administrative autonomy to towns may be unattractive, despite their economic potential. This is because urban administrative autonomy would impede coordination around the common state. Shifting our focus from the medieval context to the European colonial empires of the modern era in

the Americas, this reasoning can explain why distant European rulers often concentrated a significant amount of administrative power in the colonies among few elites whose interests closely aligned with their own. This effectively excluded others, especially indigenous elites (Engerman and Sokoloff, 2002).

In an extension of our model, the ruler coordinates an action with the elites but lacks knowledge of local conditions. This analysis allows us to more fully capture the role of assemblies, namely that of transferring information not only from the center to the localities but also in the opposite direction. We show that our key mechanisms continue to hold in this modified setting: 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 their local conditions.

We highlight 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. Our model rationalizes the empirical patterns documented for medieval England by Angelucci et al. (2022), who show that towns located on trade routes (reflecting higher economic potential) were significantly more likely to attain self-governance. This administrative autonomy, in turn, boosted their odds of being summoned to Parliament. We show that, in line with our model, this mechanism was particularly strong for towns that were more closely aligned with the ruler's preferences. We then discuss our mechanism in the broader context of early modern Western Europe, and we show that our model can also rationalize institutional dynamics in colonial Spanish America and ancient Rome. In the concluding remarks, we discuss insights for the governance structures of contemporary corporations that emerge from novel features of our model, such as sequential communication. We emphasize the trade-offs in organizational decision-making about the autonomy of firm divisions and the selection of their managers to the C-Suite in order to ensure effective top-down communication.

Related Literature. Our model shows that organizational features – delegation and communication – can provide novel mechanisms that drive institutional change in response to economic shocks, emphasizing the interplay between local and nationwide institutions. In what follows, we discuss the related literatures and highlight our contribution.

We contribute to a nascent literature that introduces insights from organizational economics in the literature on political economy and institutions (see, for instance, Foarta and Ting, 2023; Snowberg and Ting, 2023). We build upon the models of coordinated-adaptation developed by Dessein and Santos (2006), 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. Our analysis goes beyond previous models by considering a scenario where (i) the ruler is not a social planner but instead acts in her self-interest; (ii) the ruler has private information about a state of nature of interest to all; (iii) the ruler can employ alternative modes of communication to share her private information, including sequential ones in which one elite acts as an intermediary; and (iv) local elites make inalienable decisions, meaning that coordination with all is always needed regardless of who controls local administrations. Our framework captures the historical institutional setting, where initially communication between the ruler and urban elites occurred through landed elites as intermediaries. In Section 6, we come full circle by discussing the relevance of our framework to the study of modern organizations.

We are related to several strands of literature in political economy. 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). Mayshar, Moav, and Neeman (2017) examine the relationship between the center and local elites in the periphery, showing that local elites are empowered by the center's imperfect information about the state of the local agriculture. We contribute by formalizing the interplay between local administrations and 'nationwide' 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 gain nationwide political clout by controlling local administrations. As highlighted above, 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). Our framework emphasizes how economic changes can alter the structure of local and nationwide institutions, determining the inclusion of different elites.

We also contribute to the 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 increases rulers' credibility by exposing them to collective punishments in case of opportunistic behavior.[1] In our setting information sharing in an assembly acts as a mechanism to have local administrations adapt to and coordinate on common objectives. Our argument is in line with Epstein (2000), who states that parliaments were created by monarchs to coordinate 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 importance of information acquisition in legislative committees.[2] Our approach emphasizes the interdependence between administrative control over localities and membership in central assemblies.

Finally, our paper is related to the literature on federalism (Tiebout, 1956; Oates, 1972), in particular the strand that studies the decentralization of government functions (Treisman, 1999; Bardhan and Mookherjee, 2000, 2006), as well as the literature on state capacity (e.g., Besley and Persson, 2010). In our setting, centralization is not feasible. The ruler cannot govern the localities by appointing bureaucrats and must instead rely on local elites, who are motivated to run local administrations for their own advantage.[3] Because some elites have preferences that align more closely with those of the central ruler, 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

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

[2] See Gilligan and Krehbiel (1987, 1989, 1990); Baron (2000), and Dewan, Galeotti, Ghiglino, and Squintani (2015).

[3] Our work is also related to Martinez-Bravo, Padró i Miquel, Qian, and Yao (2022), who show that local self-governance can enhance the accountability of local officials.

take boundaries as given. Similar to this body of work, in our setting greater administrative concentration can foster policy coordination. However, this concentration may also have drawbacks due to differences in the preferences of local elites.

The rest of the paper is structured as follows. Section 2 describes the model, followed by its analysis in Section 3 and a discussion of our modeling choices in Section 4. In Section 5, we provide historical evidence for our mechanisms in medieval and early modern Western Europe, as well as in ancient Rome and Spanish America. Section 6 concludes and discusses how our model applies to modern organizations.

2 Model

Players and Actions. Our model consists of three players: a principal P and two agents A_i, where $i = \{L, T\}$. Given our primary focus on the medieval European context, we refer to the principal as the 'ruler' (i.e., king or queen), and to the two agents as the landed (A_L) and town (A_T) 'elites'. 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 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 and market taxes, 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, town merchants (A_T) choose which commodities to trade (a_T), and this choice cannot be directly made by landed elites (A_L). However, we will see below that if landed elites are in control of town administration (i.e., they choose r_T), 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 polities forming in Western Europe during the medieval and early modern periods, as well as the colonial empires of the modern era.

Information Structure. Players care about the realization of three 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 $i = \{L, T\}$. The variable θ_p denotes the state of the realm, such as the presence or nature of external threats, while the variables θ_L and θ_T indicate conditions in rural areas and towns, respectively, like local economic shocks impacting rural and urban economies. The realization of each of these variables requires adjustments in the economic actions chosen by the two elites, as well as in the regulatory measures applied to the landed and urban areas. 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 (Online Appendix, Section C). 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). Parliament was key 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).[4] 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 in the Online Appendix we consider a scenario in which Parliament serves as a forum for elites to inform the ruler about local conditions.[5]

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 communication: 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

[4]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).

[5]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).

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.[6]

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

$$U_i(\gamma_i) = -k_i \Bigg\{ (1-\rho) \underbrace{\left[\gamma_i \theta_P + (1-\gamma_i)\theta_i - a_i\right]^2}_{\text{Adaptation to } A_i\text{'s ideal point}} \tag{1}$$

$$+\rho \left[(1-\lambda) \underbrace{(r_i - a_i)^2}_{\text{Internal Coord.}} + \lambda \underbrace{(a_j - a_i)^2}_{\text{External Coord.}} \right] \Bigg\}, \tag{2}$$

where $k_i \geq 0$ is a measure of unit D_i's economic potential. Note that the actual economic *performance* of unit D_i is also affected by the choice of a_i. 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 local wool. The parameter $\rho \in [0,1]$ represents the importance of (overall) coordination versus adaptation, and λ reflects the relevance of external vs. internal coordination.[7] As will become clear below, an elite A_i will only suffer internal coordination

[6] 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.

[7] 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.

losses when the regulation of their unit is chosen by the other elite.[8]

Further, P's ex-post payoff is:

$$U_P = -\sum_{i\in\{L,T\}} k_i \Bigg\{ (1-\rho) \underbrace{\left[\gamma_P \theta_P + (1-\gamma_P)\,\theta_i - a_i\right]^2}_{\text{Adaptation to } P\text{'s ideal point}} \tag{3}$$

$$+ \rho \left[(1-\lambda) \underbrace{(r_i - a_i)^2}_{\text{Internal Coord.}} + \lambda \underbrace{(a_j - a_i)^2}_{\text{External Coord.}} \right] \Bigg\} - F\left(C_L, C_T\right), \tag{4}$$

where $\gamma_P \in [0,1]$ denotes the weight that P attaches to the common state. Given agents' decisions r_i and a_i, P internalizes the loss generated by *both* units, weighting each by the relative economic potential 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 potential of rural versus urban areas, we make the following assumptions:

$$\textbf{A2:} \quad \gamma_P \geq \gamma_L \geq \gamma_T, \qquad \textbf{A3:} \quad k_L \geq k_T.$$

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 the ruler, as compared to the town elites' preferences. This is motivated by the fact that landed elites were medieval rulers' military force and would thus benefit (or suffer) from wars more immediately than merchants (Harriss, 1975, p. 98).[9] 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:

[8] 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).

[9] 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.

A4: $\rho = \frac{1}{2}$ and $\lambda = \frac{1}{2}$.

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.[10]

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

1. P chooses the governance structure **g**;
2. P learns θ_P. All players learn $\{\theta_L, \theta_T\}$;
3. P communicates with elites A_i in accordance with **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 **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.[11] Further, in the cheap-talk game, we focus on the most informative equilibria.

Finally, we set the cost of *direct* communication between P and any of the two elites, f, equal to $\epsilon > 0$, with ϵ taken to be arbitrarily small. This assumption greatly simplifies the presentation of the results, as it allows us to focus on environments with large scope for communication, while maintaining the idea that direct communication is costly.

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 $\{R_L, R_T\}$, 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.

[10] We are able to solve the model absent **A4**, but comparisons of expected payoffs become cumbersome.

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

3.1 The Complete Information Benchmark

Suppose θ_P is observable to *all* players. We analyze the two possible governance structures, *Integration* and *Separation*, and derive the equilibrium regulatory decisions and economic actions, along with players' 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 $i \in \{L, T\}$. Given (1), and ignoring for the moment the choice of r_j (which is also made by A_i), the three first-order conditions (FOCs) corresponding to the elites' optimization problems are:

$$r_i(i,i) = a_i(i,i), \tag{5}$$

$$a_i(i,i) = \frac{2}{3}\underbrace{[\gamma_i\theta_P + (1-\gamma_i)\theta_i]}_{A_i\text{'s ideal point}} + \frac{1}{3}\mathbb{E}_i(a_j), \tag{6}$$

$$a_j(i,i) = \frac{1}{2}\underbrace{[\gamma_j\theta_P + (1-\gamma_j)\theta_j]}_{A_j\text{'s ideal point}} + \frac{1}{4}\mathbb{E}_j(a_i) + \frac{1}{4}\mathbb{E}_j(r_j). \tag{7}$$

Equation (5) states that the elite in control of both regulatory decisions, A_i, sets his own unit's regulatory decision equal to his own economic action to ensure perfect internal coordination. Equations (6) and (7) 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 r_i himself). In addition, A_i chooses unit D_j's regulatory decision r_j. To solve for all four decisions, we proceed in two steps. First, we solve for the optimal choices of 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. It follows that, in equilibrium, elites set $r_L(\boldsymbol{g})$, $r_T(\boldsymbol{g})$, $a_L(\boldsymbol{g})$, and $a_T(\boldsymbol{g})$:[12]

$$r_i(i,i) = a_i(i,i) = a_j(i,i) = (1-\gamma_i)\theta_i + \gamma_i\theta_P, \tag{8}$$

$$r_j(i,i) = 3(1-\gamma_i)\theta_i - 2(1-\gamma_j)\theta_j + [3\gamma_i - 2\gamma_j]\theta_P, \tag{9}$$

for $i,j \in \{L,T\}$ and $i \neq j$. From (8) and (9), 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 $\text{Var}(\theta_P) = \frac{\bar{\theta}^2}{3}$, from (3), it follows that P's expected payoff is equal to:

$$U_P(i,i) = -\left\{\frac{k_i}{2}(\gamma_P - \gamma_i)^2 + \frac{k_j}{2}\left[3(1-\gamma_i)^2 + 2(1-\gamma_j)^2 + (1-\gamma_P)^2\right]\right\}\frac{\theta^2}{3} \tag{10}$$

$$-\left\{\left[\frac{k_i}{2} + \frac{k_j}{2}\right](\gamma_P - \gamma_i)^2 + k_j(\gamma_i - \gamma_j)^2\right\}\frac{\bar{\theta}^2}{3}. \tag{11}$$

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.

[12] Throughout, we report the governance structure $\mathbf{g}$ chosen by P as an argument of the equilibrium actions $r_L(\boldsymbol{g})$, $r_T(\boldsymbol{g})$, $a_L(\boldsymbol{g})$, 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*.

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:

$$r_i(i,j) = a_i(i,j) = \frac{2}{3}(1-\gamma_i)\theta_i + \frac{2}{3}\gamma_i\theta_P + \frac{1}{3}r_j. \tag{12}$$

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

$$r_i(i,j) = a_i(i,j) = \frac{3}{4}(1-\gamma_i)\theta_i + \frac{1}{4}(1-\gamma_j)\theta_j + \left[\frac{3}{4}\gamma_i + \frac{1}{4}\gamma_j\right]\theta_P. \tag{13}$$

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 (3) and (13), P's expected utility is:

$$\begin{aligned} U_P(L,T) = -\Bigg\{ & \frac{k_L}{2}\left[\left((1-\gamma_P) - \frac{3}{4}(1-\gamma_L)\right)^2 + \frac{1}{16}(1-\gamma_T)^2\right] \\ & + \frac{k_T}{2}\left[\left((1-\gamma_P) - \frac{3}{4}(1-\gamma_T)\right)^2 + \frac{1}{16}(1-\gamma_L)^2\right] \\ & + \left(\frac{k_L}{4} + \frac{k_T}{4}\right)\frac{1}{4}\left[(1-\gamma_L)^2 + (1-\gamma_T)^2\right]\Bigg\}\frac{\underline{\theta}^2}{3} \\ & - \Bigg\{\frac{k_L}{2}\left(\gamma_P - \frac{3}{4}\gamma_L - \frac{1}{4}\gamma_T\right)^2 + \frac{k_T}{2}\left(\gamma_P - \frac{3}{4}\gamma_T - \frac{1}{4}\gamma_L\right)^2 \\ & + \left(\frac{k_L}{4} + \frac{k_T}{4}\right)\frac{1}{4}(\gamma_L - \gamma_T)^2\Bigg\}\frac{\bar{\theta}^2}{3}. \end{aligned} \tag{14}$$

We make the following additional assumption:

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

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 next.

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.*[13]

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

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 θ_P. 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 grant *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.

[13] 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 $k_T \in [0, k_L]$.

Whether *Separation* prevails as the size of the urban economy grows depends on the configuration of preferences regarding θ_P. 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.[14] As a consequence, there may 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 $\text{Var}(\theta_P)$ is sufficiently large relative to $\text{Var}(\theta_i)$. 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.[15]

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

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*.[16] For each of

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

[15] If γ_T approaches γ_L (i.e., $\gamma_T \approx \gamma_L$), and, therefore, γ_P, 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.

[16] As we explain in Footnote 18, we can safely disregard the case of *T-Integration*.

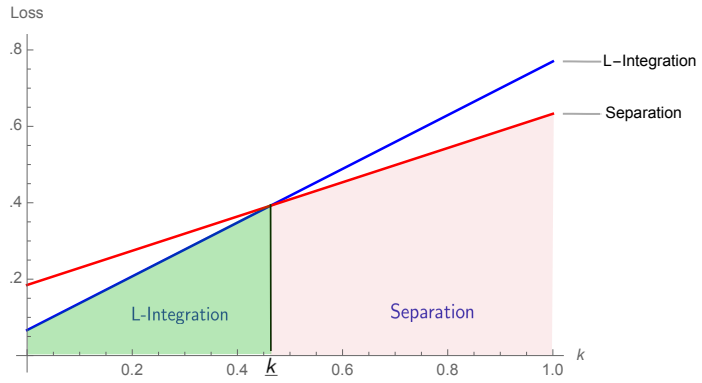


Figure 1: Trade-off between *L-Integration* and *Separation*

Note: The figure illustrates the ruler's expected losses under *L-Integration* and *Separation* as a function of k_T (the economic potential 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 $\underline{k}$. Parameters' values in the figure are: $\gamma_P = 0.9$, $\gamma_L = 0.7$, $\gamma_T = 0.3$, $\underline{\theta} = 1$, $\overline{\theta} = 3$.

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., $\{C_i, C_j\} = \{1, 0\}$).

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 A_L. 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 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 (8) and (9) that:

$$r_L(L,L,0,0) = a_L(L,L,0,0) = a_T(L,L,0,0) = (1-\gamma_L)\theta_L, \tag{15}$$

$$r_T(L,L,0,0) = 3(1-\gamma_L)\theta_L - 2(1-\gamma_T)\theta_T. \tag{16}$$

Plugging these decisions into P's expected utility gives:

$$U_P(L,L,0,0) = -\frac{k_L}{2}(\gamma_P-\gamma_L)^2\frac{\underline{\theta}^2}{3} \tag{17}$$

$$-\frac{k_T}{2}\left[3(1-\gamma_L)^2 + 2(1-\gamma_T)^2 + (1-\gamma_P)^2\right]\frac{\underline{\theta}^2}{3} - \left\{\left[\frac{k_L}{2}+\frac{k_T}{2}\right]\gamma_P^2\right\}\frac{\bar{\theta}^2}{3}. \tag{18}$$

Comparing (17) and (10) shows that P suffers from not communicating θ_P because it prevents A_L from making decisions – and influencing decisions by A_T – tailored to θ_P.

Direct Communication. Suppose that P communicates with both elites, i.e., P sets $\mathbf{g} = \{L,L,1,1\}$. Except for the cost of communication, this scenario is identical to the benchmark case of complete information because P discloses verifiable information about θ_P. The actions chosen by the elites are given by (8) and (9), and P's expected payoff is given by (10), setting $i = L$ and $j = T$ and subtracting the cost of communication 2ϵ.

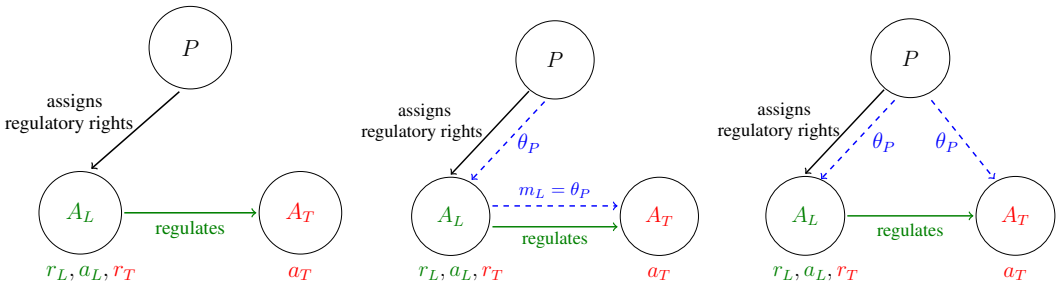
Indirect Communication. Lastly, suppose that P discloses the value of θ_P to the elite in control of both regulatory decisions, A_L, who then sends a message m_L about θ_P to A_T. Formally, P sets $\mathbf{g} = \{L,L,1,0\}$. We first show that when A_L is in charge of both regulatory decisions, he will 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:

$$r_L(L,L,1,0) = a_L(L,L,1,0) = \frac{2}{3}\left[(1-\gamma_L)\theta_L + \gamma_L\theta_P\right] + \frac{1}{3}\mathbb{E}_L(a_T), \tag{19}$$

$$a_T(L,L,1,0) = \frac{1}{2}\left[(1-\gamma_T)\theta_T + \gamma_T\mathbb{E}_T(\theta_P \mid m_L)\right] + \frac{1}{4}\mathbb{E}_T(r_T \mid m_L) + \frac{1}{4}\mathbb{E}_T(a_L \mid m_L), \tag{20}$$

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.[17] If $m_L = \theta_P$, then the optimal actions are given by (8) and (9), where $i = L$ and $j = T$, which give A_L

[17] 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.



(a) No Communication (b) Indirect Communication (c) Direct Communication

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.

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 (8) and (9), 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. In contrast, if communication is imperfect, A_L would suffer from A_T's inability to perfectly adapt to the urban regulatory decisions set by A_L, thereby preventing A_L from reaching their ideal point. Having established that communication between A_L and A_T is truthful, it follows that P's expected payoff is given by (10), subtracting the cost of communication ϵ.

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.

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

Lemma 4. *Under L-Integration, P chooses $\{C_L, C_T\} = \{1, 0\}$ ('indirect communication').*

Proof. See Appendix A. □

Under *L-Integration*, communication 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. First, P favors this pattern of communication to 'direct communication' because of the lower cost of communication involved and because A_L can be trusted to convey information truthfully to A_T. Second, P prefers to rely on A_L rather than A_T to act as her intermediary because 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 would arise because of A_T's incentives to lie about θ_P in an attempt to influence A_L's decision-making. Finally, given the low cost of communication, P does not choose 'no communication' because she wishes both elites to become informed about θ_P so that all actions adapt to and coordinate around the common state.[18]

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*, 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:

$$r_i(L,T) = a_i(L,T) = \frac{2}{3}\left[(1-\gamma_i)\theta_i + \gamma_i \mathbb{E}_i(\theta_P)\right] + \frac{1}{3}\mathbb{E}_i(a_j), \tag{21}$$

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

[18] 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.

actions equal to each other. We again distinguish three communication scenarios.

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 (21) we have:

$$r_i(L, T, 0, 0) = a_i(L, T, 0, 0) = \frac{3}{4}(1 - \gamma_i)\theta_i + \frac{1}{4}(1 - \gamma_j)\theta_j, \tag{22}$$

for $i, j = \{L, T\}$ and $i \neq j$. From (3) and (22), it follows that P's expected payoff is:

$$U_P(i, j) = -\left\{\frac{k_i}{2}\left[\left((1 - \gamma_P) - \frac{3}{4}(1 - \gamma_i)\right)^2 + \frac{1}{16}(1 - \gamma_j)^2\right]\right. \tag{23}$$

$$+ \frac{k_j}{2}\left[\left((1 - \gamma_P) - \frac{3}{4}(1 - \gamma_j)\right)^2 + \frac{1}{16}(1 - \gamma_i)^2\right] \tag{24}$$

$$\left. + \left(\frac{k_i}{4} + \frac{k_j}{4}\right)\frac{1}{4}\left[(1 - \gamma_i)^2 + (1 - \gamma_j)^2\right]\right\}\frac{\underline{\theta}^2}{3} - \left\{\left[\frac{k_i}{2} + \frac{k_j}{2}\right]\gamma_P^2\right\}\frac{\bar{\theta}^2}{3}, \tag{25}$$

for $i, j\,\{L, T\}$ and $i \neq j$. Comparing (14) and (23) 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 (13), and P's expected payoff is given by (14), subtracting the cost of communication 2ϵ.

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.[19] From (21), because $\mathbb{E}_L(\theta_P) = \theta_P$, the FOCs corresponding to the elites' optimization problems are given by:

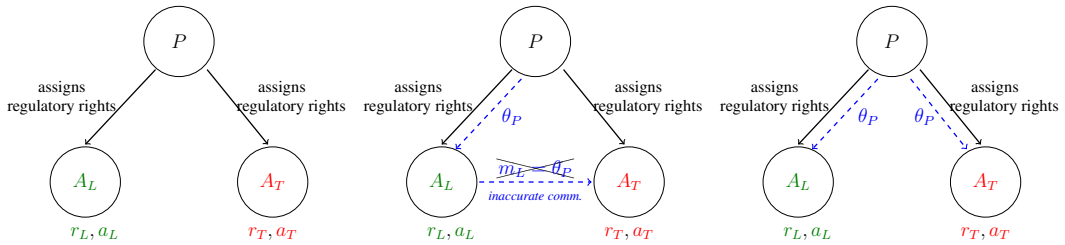
$$r_L(L, T, 1, 0) = a_L(L, T, 1, 0) = \frac{3}{4}(1 - \gamma_L)\theta_L + \frac{1}{4}(1 - \gamma_T)\theta_T \tag{26}$$

$$+ \frac{2}{3}\gamma_L\theta_P + \left[\frac{\gamma_T}{4} + \frac{\gamma_L}{12}\right]\mathbb{E}_T(\theta_P \mid m_L),$$

$$r_T(L, T, 1, 0) = a_T(L, T, 1, 0) = \frac{3}{4}(1 - \gamma_T)\theta_T + \frac{1}{4}(1 - \gamma_L)\theta_L \tag{27}$$

$$+ \left[\frac{3}{4}\gamma_T + \frac{1}{4}\gamma_L\right]\mathbb{E}_T(\theta_P \mid m_L),$$

[19] 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 6 below.



(a) No Communication (b) Indirect Communication (c) Direct 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 5. *Under Separation and 'indirect communication' – i.e.,* $\boldsymbol{g} = \{L, T, 1, 0\}$ *– there does not exist an equilibrium in which* $m_L = \theta_T$, $\forall \theta_T \in \left[\underline{\theta}, \overline{\theta}\right]$.

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. Appendix B states its value. Comparing equation (56) in Appendix B with (14), and ignoring the costs of communication, reveals that the imperfect communication that happens between the elites is detrimental to P.

Equilibrium under Separation. The following lemma states P's preferred communication structure under *Separation*.

Lemma 6. *Under Separation, P chooses $\{C_L, C_T\} = \{1, 1\}$ ('direct communication').*

Proof. See Appendix A. □

P opts to disclose θ_P *directly* to both elites rather than to engage in 'indirect communication' via A_L in order to prevent A_L from manipulating information and causing mis-adaptation to and mis-coordination on the common state by both elites. Furthermore, as in the case of *L-Integration*, and given the low communication costs, P opts to inform both elites about θ_P rather than forgoing communication with either elite. Finally, comparing Lemma 4 to Lemma 6 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. The following proposition states our main result.

Proposition 2. *In the game of incomplete information, there exists a threshold $\tilde{k}$ for k_T, with $\tilde{k}$ increasing in γ_P, 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' $\forall k_T$.

Proof. See Appendix A. □

Proposition 2 states the equilibrium allocation of decision rights over regulatory actions and communication structure as a function of the relative size of the urban economy. Similar to Proposition 1, part a 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 an 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.

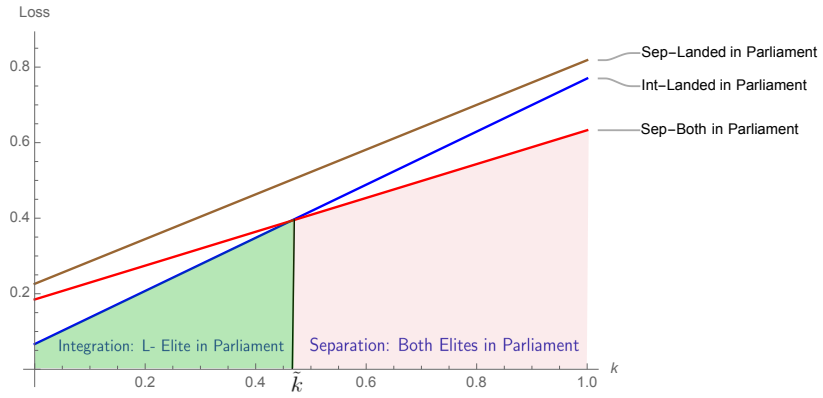


Figure 4: Trade-off between *L-Integration* and *Separation*

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. Parameters' values in the figure are: $\gamma_P = 0.9$, $\gamma_L = 0.7$, $\gamma_T = 0.3$, $\underline{\theta} = 1$, $\overline{\theta} = 3$.

Similarly to Proposition 1, the threshold value $\tilde{k}$ in Proposition 2 is a function of the players' preferences. Employing a reasoning analogous to that used in Proposition 1, the threshold is increasing in γ_P: As the ruler places higher weight on θ_P, the urban economy must exhibit greater economic potential for the urban elite to be given control over the town. Further, 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).

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 these institutional dynamics in Section 5.

4 Discussion of Modeling Choices and Extensions

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. In our baseline setup, complete information about local states allows us to focus on top-down ruler-elite communication regarding the common state. In Online Appendix C, we explore an alternative scenario where assemblies serve as bottom-up information-gathering forums for rulers. Our modified setup makes the common state and rural conditions public, while town conditions remain known only to urban and landed elites. We introduce a ruler's action requiring coordination with elites' decisions and allow the ruler to choose between learning town conditions via landed or urban elites. As in the main analysis, we find that as towns gain importance, they achieve self-governance and are summoned to assemblies, as landed elites become unreliable intermediaries.

Our baseline model assumes that local elites know each other's states due to geographical proximity and can communicate without cost. Alternatively, we could have considered distant elites privately informed about their local conditions, communicating with each other at a cost within a central assembly (if both are summoned), and bottom-up with the ruler. In this scenario, the ruler would risk elites coordinating on local states instead of the common state when summoned (see Hernández, 2020, pp. 356-8). With these additional dynamics at play, the transition to town autonomy and representation in assemblies would only occur at a higher economic potential. However, our core qualitative results would remain the same.

Incentives to learn the common state. 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 B 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.

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.

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 Historical Applications

Our framework sheds light on the process of urban self-governance, whereby local urban elites obtained administrative control over towns and representation in central assemblies. 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 Western Europe and present empirical evidence for medieval England, focusing on the rise of the merchant class and the creation of parliaments. We then move on to the cases of Spanish America and ancient Rome.

5.1 Western Europe and Empirical Evidence for England

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.[20] Central assemblies convened with the participation of landed elites, sidelining merchants. 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. This information dissemination through landed elites was possible because they were in frequent contact with towns, performing various local administrative tasks such as tax collection and handling contractual disputes in shire courts (see Harding, 1973, for the case of England). Based on our model's logic, this system proved effective because the landed elite could influence merchant decisions through regulations and did not have to fall back on biased communication.

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 administrations, 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

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

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).

Empirical Evidence for England: In what follows, we confront some of the core mechanisms in our model with historical data. We leverage the dataset assembled by Angelucci et al. (2022) for England after the Norman Conquest in 1066. We examine the period until the Black Death in 1348, which saw the Commercial Revolution in England. We focus on the 141 towns in the royal demesne of England, where the crown had direct decision power over self-governance. These royal boroughs were relatively evenly distributed throughout England (see Figure 1 in Angelucci et al., 2022).

We begin with the prediction from Propositions 1 and 2 that rising economic potential of towns (high k_T) leads to administrative separation, i.e., self-governance. We use exposure to trade as a proxy for towns' economic potential during the Commercial Revolution. Those are towns located on the sea coast, on a navigable river, or on an ancient Roman road (which regained importance when trade expanded after the Dark Ages). In accordance with Angelucci et al. (2022), Panel A in Figure 5 shows that our model prediction is strongly borne out in the data: Trade towns were about three times more likely to receive self-governance before 1348 than other royal towns, and this difference is statistically highly significant. Next, we test another feature of our model: Towns whose preferences were more closely aligned with the crown should have been more likely to receive self-governance. This is because self-governance results in a smaller loss in coordination to the crown when the town's preferences are more aligned. As a proxy for the alignment of preferences we use an indirect measure: Whether a town received a Murage grant from the crown by 1348. These grants gave towns the right to collect taxes to maintain city walls –

a crucial feature in defending the realm. Murage grants were therefore typically bestowed upon towns situated near the Welsh and Scottish borders, where strategic concerns dictated that the crown placed very high weight on the common state (i.e., γ_P took high values). In these configurations, our model predicts that a town is more likely to receive a Farm Grant if it also assigns a high value to the common state, compared to one that assigns only moderate weight to it.[21] Because city walls could ultimately insulate towns from royal power, Murage grants were arguably a sign that the crown trusted these towns not to abuse their empowered position, i.e., γ_T was also high and close to γ_P. Panel B in Figure 5 shows that, indeed, Murage towns were much more likely to receive self-governance.[22]

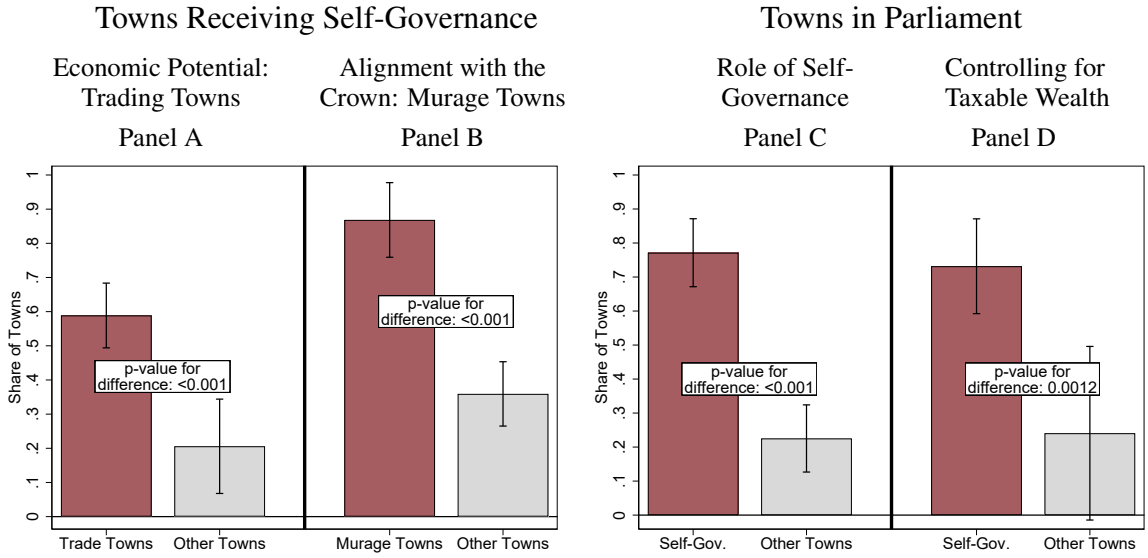


Figure 5: Testing Model Predictions in Medieval England

Note: The figure illustrates that central predictions of our model hold in the data for medieval England. Panel A shows that towns with trade geography (located on the sea coast, on a navigable river, or on an ancient Roman road) were significantly more likely to receive self-governance. Panel B shows that the same is true for towns whose preference were more closely aligned with the crown (as proxied by Murage grants – the rights to repair and maintain city walls, which was crucial for defense). Panel C provides evidence for the prediction that self-governing towns will be summoned to Parliament for direct communication with the Crown. Panel D shows that this holds also when balancing the sample with respect to town-level taxable wealth in 1086.

[21] See the discussion following Proposition 1, as well as the reasoning provided in footnote 15.

[22] Of course, this result has to be interpreted with caution, as it may also reflect unobserved organizational capacity of towns, leading to both Murage grants and self-governance. Similarly, it could be driven by trade (economic importance) driving both variables. However, this is unlikely: When restricting the sample to the 107 royal towns with trade geography, the proportions are very similar (89.2% of Murage towns obtaining self-governance, as compared to 42.8% of the remaining towns).

Next, we turn to Proposition 2:[23] That self-governing towns will be summoned to Parliament for direct communication with the ruler. Reflecting the findings of Angelucci et al. (2022), Panel C in Figure 5 shows that 77% of self-governing towns were represented in Parliament by 1348, as compared to only 22% of all other royal towns. A possible concern is that economic importance (towns' bargaining power) may have led directly to both self-governance and representation in Parliament.[24] Panel D addresses this concern by balancing town with and without self-governance in terms of their taxable wealth in 1086.[25] The relationship between self-governance and representation in Parliament is equally strong in the balanced sample, implying that towns' wealth (or bargaining power) are unlikely to confound our results.

Overall, the historical record for England strongly supports the key mechanisms in our model. We now discuss qualitative evidence for similar dynamics in other historical settings.

5.2 Qualitative Evidence for Mechanisms in other Regions

Spanish America: Our analysis also applies to 16-18C Spanish America. In the 16th century, the Spanish crown organized conquered territories into vice-royalties, each with provinces headed by tribunals (*audiencias*) overseeing provincial officials (governors, *corregidores* and *alcaldes mayores*). Spanish settlers established municipalities in the colonies with a governance structure similar to Castilian towns, featuring a municipal governing body (*cabildo*) consisting of mayors, aldermen (*alcaldes ordinarios* and *regidores*), and other minor officials.[26] Initially, the *cabildos* were dominated by local producers who exploited indigenous labor (*encomenderos*), with merchants playing a minor role (Garfias and Sellars, 2021). The *cabildo* was annually renewed through co-optation, with provincial governors influencing these appointments. Similarly, provincial officials, consistently drawn from regional

[23] This prediction also follows from Proposition C.2 in Online Appendix C, where communication is bottom-up rather than top-down.

[24] For example, one may worry that economically more important towns bought or demanded seats – although this contradicts the historical record, as representation in Parliament only became desirable for English towns after 1500 (Pasquet, 1964; Angelucci et al., 2022).

[25] We use entropy balancing, which creates balanced samples by reweighing the observations without self-governance to match the mean and variance of taxable wealth in royal towns with self-governance. Taxable wealth is from the Domesday Book. See Angelucci et al. (2022) for data sources.

[26] This discussion focuses on Spanish settlers and institutions that largely excluded indigenous elites. Our framework can explain this setting by reinterpreting the two elites in the model as the Spanish elite and the indigenous elite. Indigenous elites would then not receive local administrative control if their preferences differed substantially from those of the Spanish crown.

landed and mining elites, held jurisdiction over towns, including trade matters (Morales, 1979; Alvarez, 1991; Domínguez-Guerrero and López Villalba, 2018). In the terminology of our framework, this early phase was characterized by low economic potential of the urban merchant elite (k_T) relative to that of the landed (and mining) elite (k_L). As a consequence, local administrative power was concentrated in the hands of the latter (i.e., *L-Integration*). Consistent with our model, provincial officials directly communicated with the central government (the council in Madrid or the viceroy), while communication between the central government and municipal bodies was primarily mediated by provincial governors (i.e., $\{C_L, C_T\} = \{1, 0\}$) to reduce costs (Mazín, 2013; Alarcón Olivos, 2017; Amadori, 2023).

By the late 16th century, the Spanish crown's profits from colonial trade had grown significantly compared to those from mining and production (Hernández, 2020, pp. 72-3, 105) – i.e., k_T grew relative to k_L. Moreover, during the first half of the 17th century, the Spanish crown encountered threats to its American dominions from rival European powers. In response, 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*. Simultaneously, these councils gained more self-governance from the crown, securing increased jurisdictional power compared to provincial-level officials (Escamilla, 2008) – i.e., merchant towns achieved *Separation*.[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) – that is $\{C_L, C_T\} = \{1, 1\}$. 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). Notably, to prevent collective action by colonial towns, the Spanish monarchs prohibited them from assembling and communicating as a group (Lohmann Villena, 1947). Instead, they 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).[28]

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

[28] 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 a new corp of provincial governors (*intendants*). These reforms met with resistance from the local elites, a process that arguably prompted the formation of independence movements, as highlighted by Chiovelli, Fergusson, Martinez, Tor-

Ancient Rome: A further application of our model is the organization of Roman provinces during the first century BC. As the Roman dominion expanded across Europe, it introduced a relatively homogeneous administrative structure, partitioning newly acquired territories into provinces ruled by centrally appointed officials.[29] In these provinces, tax collection in towns was primarily handled by outsiders (*publicani*), while local urban elites had limited influence over town administrations. Direct communication between provincial urban elites and Rome was infrequent, with indirect communication through provincial assemblies likely playing a more significant role.[30] During the 2nd and 1st centuries BC, as provincial towns grew economically vital (France, 2021, pp. 232-3), Rome restructured local governance, granting urban elites administrative control over selected towns. In line with our framework, these changes aimed to empower towns to adapt to local contingencies and curb discontent. However, the increased self-governance exacerbated coordination challenges, prompting Rome to establish direct ties with autonomous urban elites (see Fernoux, 2019; France, 2021, pp. 327-9, 375-6). This policy was implemented by increasing towns' participation in provincial assemblies and allowing them to send representatives to Rome, enhancing their influence over policies (France, 2021, pp. 401-2).

6 Conclusion

Over six decades after James March (1962) encouraged applying political science frameworks to firms, our paper takes a reverse approach. Anchored in organizational economics and the literature on multi-divisional firms, our model incorporates key elements to analyze the organizational challenges of historical central states.

In the spirit of March's call, our framework is also relevant to the study of modern organizations. In our framework, elites make inalienable decisions affecting the whole polity. For instance, urban elites control commerce even if they do not run town administrations,

res, and Valencia Caicedo (2023). Our model's emphasis on the importance of heterogeneity of preferences between the center (Madrid) and various elites operating in the distant colonies (*intendants* and *creole* elites) in shaping the governance structure, especially in the wake of military shocks primarily concerning the center (i.e., wars in Europe), helps rationalize their findings.

[29] 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).

[30] Instances of direct communication between Rome and delegates of provincial towns often revolved around grievances pertaining to the conduct of tax farmers. Little information survived about the participation of towns in provincial assemblies under the jurisdiction of centrally-appointed magistrates (France, 2021, pp. 133-4, 142-3, 279-81, 290-8).

contrasting with the usual assumption of fully transferable decision rights. Analogous to a corporate setting, where a division like engineering might hold sway over product design, the decisions and information flow within the product design team remain essential. Our model shows that such dynamics are important in determining the overall organizational structure, including whether engineering should indeed control product design, or whether the latter should become a separate division within the firm.

Our model also emphasizes the role of the communication network among all players. It explores whether an elite should directly interact with a central authority, or communicate via another elite, balancing factors such as communication costs and the reliability of intermediaries. This parallels modern organizations contemplating executive team composition. For the specific example above, our model suggests that if product design gains autonomy, it should be directly represented in the executive team to prevent information distortion by other divisions seeking to manipulate product design decisions in their favor.

Lastly, our model emphasizes coalition dynamics, in line with Cyert and March (1963) who state that "our impression is that most actual managers devote much more time and energy to the problems of managing their [internal] coalition than they do to the problems of dealing with the outside world" (as cited by Gibbons, 2023). While models typically focus on headquarters' prioritization of divisions based on their importance, we add another layer: the central authority considers variations in preferences among herself and elites when designing the administrative structure. Likewise, in firms, the CEO and the various divisional leaders frequently hold contrasting perspectives. In this context, adapting our approach of modeling coalition dynamics to the study of corporate organizational design promises novel insights.

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Appendix A Proofs of Lemmas and Propositions

Proof of Lemma 1. Given **A2**, **A3**, and **A4**, the results follow from comparing (10) under $\{R_L, R_T\} = \{L, L\}$ to (10) under $\{R_L, R_T\} = \{T, T\}$. More specifically, suppose $k_L = k_T$. From (8) and (9), given **A2**, P's expected loss in (10) 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 (10), P's expected loss from unit D_T under *L-Integration* equals:

$$k_T \Bigg\{ \left[\frac{1}{2} \left[(1-\gamma_P)^2 + (1-\gamma_L)^2 \right] + \left[(1-\gamma_L)^2 + (1-\gamma_T)^2 \right] \right] \frac{\underline{\theta}^2}{3} \tag{28}$$

$$+ \left[\frac{1}{2} (\gamma_P - \gamma_L)^2 + (\gamma_L - \gamma_T)^2 \right] \frac{\bar{\theta}^2}{3} \Bigg\}. \tag{29}$$

From (14), P's expected loss from unit D_T under *Separation* is equal to:

$$k_T\left\{\frac{1}{2}\left[\left(1-\gamma_P-\frac{3}{4}\left(1-\gamma_T\right)\right)^2+\frac{1}{16}\left(1-\gamma_L\right)^2\right]+\frac{1}{16}\left[\left(1-\gamma_L\right)^2+\left(1-\gamma_T\right)^2\right]\right\}\frac{\underline{\theta}^2}{3} \tag{30}$$

$$+k_T\left\{\frac{1}{2}\left(\gamma_P-\frac{3\gamma_T+\gamma_L}{4}\right)^2+\frac{\left(\gamma_L-\gamma_T\right)^2}{16}\right\}\frac{\bar{\theta}^2}{3}. \tag{31}$$

The component multiplied by $\frac{\underline{\theta}^2}{3}$ in (28) is greater than the corresponding term in (30). It is therefore sufficient for the result stated in the Lemma to hold that the component multiplied by $\frac{\bar{\theta}^2}{3}$ in (28) be greater than the corresponding component in (30), that is:

$$\frac{1}{2}\left(\gamma_P-\frac{1}{4}\gamma_L-\frac{3}{4}\gamma_T\right)^2+\frac{1}{16}\left(\gamma_L-\gamma_T\right)^2\leq\frac{1}{2}\left(\gamma_P-\gamma_L\right)^2+\left(\gamma_L-\gamma_T\right)^2, \tag{32}$$

which holds under **A5**. ■

Proof of Proposition 1. We disregard *T-Integration* given Lemma 1. Consider the case in which $k_T=0$. From (10) and (14), 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 (10) and (14), 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. First, from Lemma 3 and $F(1,1)>F(1,0)$, we have that P prefers $\{C_L,C_T\}=\{1,0\}$ to $\{C_L,C_T\}=\{1,1\}$. Second, we prove that P prefers $\{C_L,C_T\}=\{1,0\}$ to $\{C_L,C_T\}=\{0,1\}$. Suppose P sets $\{C_L,C_T\}=\{0,1\}$. Then, given $\{\gamma_P,\gamma_L,\gamma_T\}$ and $\{\theta_L,\theta_T\}$, for all but one realization of θ_P, truthtelling is not an equilibrium of the cheap-talk game between elites.[31] 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 $\{C_L,C_T\}=\{1,0\}$.Finally, P compares $\{C_L,C_T\}=\{1,0\}$ to $\{C_L,C_T\}=\{0,0\}$. From Section 3.2.1,

[31]The solution to the cheap talk-game is derived by following the procedure in the proof of Lemma 5.

P's expected payoff under *L-Integration* and 'indirect communication' is:

$$U_P(L,L) = -\left\{\frac{k_L}{2}(\gamma_P-\gamma_L)^2 + \frac{k_T}{2}\left[3(1-\gamma_L)^2 + 2(1-\gamma_T)^2 + (1-\gamma_P)^2\right]\right\}\frac{\underline{\theta}^2}{3} \tag{33}$$

$$-\left\{\left[\frac{k_L}{2}+\frac{k_T}{2}\right](\gamma_P-\gamma_L)^2 + k_T(\gamma_L-\gamma_T)^2\right\}\frac{\bar{\theta}^2}{3} - \epsilon. \tag{34}$$

From (17) and (33), if we ignore ϵ in (33), **A2**-**A3** imply that P's expected payoff is higher under 'indirect communication' than under 'no communication'. Therefore, for ϵ arbitrarily small, P prefers 'indirect communication' to 'no communication'. ■

Proof of Lemma 5. We denote a generic cutoff of the partitions by $\theta_{P,n}$, for $n \in \{-\infty, ..., +\infty\}$. We make the following technical assumption:

$$\textbf{A7}\text{: } \gamma_T \in \left[0, \underline{\gamma}\right], \text{ with } \underline{\gamma} = \frac{\bar{\theta}-\underline{\theta}}{\bar{\theta}+\underline{\theta}}\gamma_L.$$

A7 (joint with **A1**) ensures 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 $\theta_P \in [\theta_{P,n-2}, \theta_{P,n-1})$ (resp., $[\theta_{P,n-1}, \theta_{P,n}]$). 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 therefore write A_L's incentive constraint (IC) at the communication stage as follows (where $B \equiv \frac{3\gamma_T+\gamma_L}{4}$ and $T \equiv \frac{3}{4}\left((1-\gamma_L)\theta_L - (1-\gamma_T)\theta_T\right)$):

$$\left\{\left[T + \gamma_L\theta_P^M - B\mathbb{E}_T\left(\theta_P \mid m_L^l\right)\right]^2 + \frac{1}{4}\left[-T - \gamma_L\theta_P^M + B\mathbb{E}_T\left(\theta_P \mid m_L^l\right)\right]^2\right\} = \tag{35}$$

$$\left\{\left[T + \gamma_L\theta_P^M - B\mathbb{E}_T\left(\theta_P \mid m_L^h\right)\right]^2 + \frac{1}{4}\left[-T - \gamma_L\theta_P^M + B\mathbb{E}_T\left(\theta_P \mid m_L^h\right)\right]^2\right\}. \tag{36}$$

Consider three cutoffs $\{\theta_{P,n}; \theta_{P,n-1}; \theta_{P,n-2}\}$, so that $\mathbb{E}_T\left(\theta_P \mid m_L^l\right) = \frac{\theta_{P,n-2}+\theta_{P,n-1}}{2}$ and $\mathbb{E}_T\left(\theta_P \mid m_P^h\right) = \frac{\theta_{P,n-1}+\theta_{P,n}}{2}$. 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 (35) as:

$$-\left[B^2\left(\frac{\theta_{P,n-2}+\theta_{P,n-1}}{2}\right)^2-2B\left(T+\gamma_L\theta_{P,n-1}\right)\left(\frac{\theta_{P,n-2}+\theta_{P,n-1}}{2}\right)\right] \tag{37}$$

$$-\frac{1}{4}\left[B^2\left(\frac{\theta_{P,n-2}+\theta_{P,n-1}}{2}\right)^2+2B\left(-T-\gamma_L\theta_{P,n-1}\right)\left(\frac{\theta_{P,n-2}+\theta_{P,n-1}}{2}\right)\right] \tag{38}$$

$$=-\left[B^2\left(\frac{\theta_{P,n-1}+\theta_{P,n}}{2}\right)^2-2B\left(T+\gamma_L\theta_{P,n-1}\right)\left(\frac{\theta_{P,n-1}+\theta_{P,n}}{2}\right)\right] \tag{39}$$

$$-\frac{1}{4}\left[B^2\left(\frac{\theta_{P,n-1}+\theta_{P,n}}{2}\right)^2+2B\left(-T-\gamma_L\theta_{P,n-1}\right)\left(\frac{\theta_{P,n-1}+\theta_{P,n}}{2}\right)\right]. \tag{40}$$

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:

$$\theta_{P,n}-2\left(\frac{2\gamma_L-B}{B}\right)\theta_{P,n-1}+\theta_{P,n-2}=4\frac{T}{B}. \tag{41}$$

We look for the general solution to (41). As a first step, we consider the homogeneous difference equation:

$$\theta_{P,n}-2\left(\frac{2\gamma_L-B}{B}\right)\theta_{P,n-1}+\theta_{P,n-2}=0. \tag{42}$$

Suppose $\theta_{P,n}=Aw^n$. Then, from (42), we obtain:

$$w^2-2\left(\frac{2\gamma_L-B}{B}\right)w2+1=0 \quad \rightarrow \quad w=\frac{1}{B}\left[2\gamma_L-B\pm 2\sqrt{\gamma_L\left(\gamma_L-B\right)}\right], \tag{43}$$

which gives us two distinct real roots. The general solution to (42) is:

$$\theta_{P,n}=A_1\left\{\frac{1}{B}\left[2\gamma_L-B+2\sqrt{\gamma_L\left(\gamma_L-B\right)}\right]\right\}^n \tag{44}$$

$$+A_2\left\{\frac{1}{B}\left[2\gamma_L-B-2\sqrt{\gamma_L\left(\gamma_L-B\right)}\right]\right\}^n, \tag{45}$$

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 (41). Because the term on the right-hand side is a constant, we have:

$$\theta_{P,n}=\frac{4\frac{T}{B}}{1-2\left(\frac{2\gamma_L-B}{B}\right)+1} \quad \rightarrow \quad \theta_{P,n}=\frac{T}{B-\gamma_L}. \tag{46}$$

Therefore, from (44) and (46), the general solution to (41) is:

$$\theta_{P,n} = A_1 \left\{ \frac{2\gamma_L - B + 2\sqrt{\gamma_L(\gamma_L - B)}}{B} \right\}^n + A_2 \left\{ \frac{2\gamma_L - B - 2\sqrt{\gamma_L(\gamma_L - B)}}{B} \right\}^n + \frac{T}{B - \gamma_L}. \tag{47}$$

In order to find values for A_1 and A_2, we impose the following condition:

$$\theta_{P,0} = \frac{T}{B - \gamma_L} \quad \rightarrow \quad A_1 + A_2 = 0 \quad \rightarrow \quad A_1 = -A_2. \tag{48}$$

The equality in (48) 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:

$$\theta_{P,1} = A_1 \left\{ \frac{2\gamma_L - B + 2\sqrt{\gamma_L(\gamma_L - B)}}{B} \right\} + A_2 \left\{ \frac{2\gamma_L - B - 2\sqrt{\gamma_L(\gamma_L - B)}}{B} \right\} + \frac{T}{B - \gamma_L}, \tag{49}$$

After substituting $A_1 = -A_2$ in (49), we obtain:

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

We use these expressions to rewrite (47):

$$\theta_{P,n} + \frac{T}{\gamma_L - B} = \frac{B\left(\theta_{P,1} + \frac{T}{\gamma_L - B}\right)}{4\sqrt{\gamma_L(\gamma_L - B)}} \left\{ \frac{1}{B} \left[2\gamma_L - B + 2\sqrt{\gamma_L(\gamma_L - B)} \right] \right\}^n \tag{50}$$

$$+ \frac{B\left(\theta_{P,1} + \frac{T}{\gamma_L - B}\right)}{4\sqrt{\gamma_L(\gamma_L - B)}} \left\{ \frac{1}{B} \left[2\gamma_L - B - 2\sqrt{\gamma_L(\gamma_L - B)} \right] \right\}^n. \tag{51}$$

Take 2 cutoffs, $n - x$ and n. Let $Q = -T \equiv \frac{3}{4}\left((1 - \gamma_T)\theta_T - (1 - \gamma_L)\theta_L\right)$. After defining $H_+ \equiv 2\gamma_L - B + 2\sqrt{\gamma_L(\gamma_L - B)}$ and $H_- \equiv 2\gamma_L - B - 2\sqrt{\gamma_L(\gamma_L - B)}$, we have:

$$\frac{\theta_{P,n-x} - \frac{Q}{\gamma_L - B}}{\theta_{P,n} - \frac{Q}{\gamma_l - B}} = \frac{\frac{B\left(\theta_{P,1} + \frac{T}{\gamma_L - B}\right)}{4\sqrt{\gamma_L(\gamma_L - B)}} \left\{ \left[\frac{1}{B}(H_+)\right]^{n-x} - \left[\frac{1}{B}(H_-)\right]^{n-x} \right\}}{\frac{B\left(\theta_{P,1} + \frac{T}{\gamma_L - B}\right)}{4\sqrt{\gamma_L(\gamma_L - B)}} \left\{ \left[\frac{1}{B}(H_+)\right]^{n} - \left[\frac{1}{B}(H_-)\right]^{n} \right\}}. \tag{52}$$

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

$$\frac{\theta_{P,n-x} - \frac{Q}{\gamma_L - B}}{\bar{\theta} - \frac{Q}{\gamma_l - B}} = \left[\frac{2\gamma_L - B + 2\sqrt{\gamma_L(\gamma_L - B)}}{B}\right]^{n-x} \left[\frac{B}{2\gamma_L - B + 2\sqrt{\gamma_L(\gamma_L - B)}}\right]^{n}, \quad (53)$$

because $\lim_{n\to\infty}\left[\frac{2\gamma_L - B - 2\sqrt{\gamma_L(\gamma_L - B)}}{B}\right]^{n-x} = 0$. From (53), we obtain:

$$\theta_{P,n-x} - \frac{Q}{\gamma_L - B} = \left[\frac{B}{2\gamma_L - B + 2\sqrt{\gamma_L(\gamma_L - B)}}\right]^{x} \left(\bar{\theta} - \frac{Q}{\gamma_L - B}\right), \quad (54)$$

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

$$\theta_{P,n} - \frac{Q}{\gamma_L - B} = (\alpha_L)^{|n|}\left(\bar{\theta} - \frac{Q}{\gamma_L - B}\right), \quad with \quad n \in \{-\infty, ..., +\infty\}, \quad (55)$$

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, the quality of communication improves (α_L approaches 1) as γ_T tends to γ_L. ■

Proof of Lemma 6. We start by ignoring the structure $\{C_L, C_T\} = \{0,1\}$. From Section 3.2.2, when $\mathbf{g} = \{L, T, 1, 1\}$, P's expected payoff is given by (14) minus 2ϵ. Note that, if we set the cost of communication to zero, from (23)-(14)-(56), P prefers 'direct communication' to 'indirect communication' and 'no communication'. When comparing (14) and (56), 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 (56) 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 (56) is equal to the term that multiplies $\frac{\bar{\theta}^2}{3}$ in (14). Thus, P prefers 'direct communication' to any of the alternative communication structures for $f = \epsilon > 0$, with ϵ set arbitrarily small.

We conclude the proof by establishing that $\boldsymbol{g} = \{L, T, 1, 0\} \succeq_P \boldsymbol{g} = \{L, T, 0, 1\}$. Under $\boldsymbol{g} = \{L, T, 0, 1\}$, elites' regulatory decisions and economic actions are:

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

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

where m_T denotes the message sent by A_T to A_L. Equilibrium messages can be computed by following the procedure shown in Lemma 5. From α_L (as defined in the proof of Lemma 5) and $\gamma_L \geq \gamma_T$, the quality of communication between elites is higher under $\boldsymbol{g} = \{L, T, 1, 0\}$ than $\boldsymbol{g} = \{L, T, 0, 1\}$.Because the elite who attaches the higher value to θ_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. Parts $a)$ and $b)$ follow from Lemma 4, Lemma 6, and Proposition 1. 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 $\tilde{k}$ differs from that of $\underline{k}$ in the proof of Proposition 1 only because of the costs of communication. The inclusion of these costs implies that $\underline{k} < \tilde{k}$. ■

Appendix B Additional Computations

P's expected payoff under *Separation* and '*indirect communication*', $U_P(L, T, 1, 0)$, is as follows (see Online Appendix Section A for details):

$$
\begin{aligned}
&-\Bigg\{\frac{k_L}{2}\left[\left((1-\gamma_P)-\frac{3}{4}(1-\gamma_L)\right)^2+\frac{1}{16}(1-\gamma_T)^2\right] \\
&\quad+\frac{k_T}{2}\left[\left((1-\gamma_P)-\frac{3}{4}(1-\gamma_T)\right)^2+\frac{1}{16}(1-\gamma_L)^2\right] \\
&\quad+\left(\frac{k_L}{4}+\frac{k_T}{4}\right)\frac{1}{4}\left[(1-\gamma_L)^2+(1-\gamma_T)^2\right]\Bigg\}\frac{\underline{\theta}^2}{3} \\
&\quad-\left\{\frac{k_L}{2}\left(\gamma_P-\frac{2}{3}\gamma_L\right)^2+\frac{k_T}{2}\gamma_P^2+\left(\frac{k_L}{4}+\frac{k_T}{4}\right)\frac{4}{9}\gamma_L^2\right\}\frac{\bar{\theta}^2}{3} \\
&\quad-\mathbb{E}\Big(\mathbb{E}_T(\theta_P)\Big)^2\left\{\left(\frac{k_L}{18}+\frac{k_T}{2}\right)\left(\frac{3}{4}\gamma_T+\frac{1}{4}\gamma_L\right)^2+\left(\frac{k_L}{4}+\frac{k_T}{4}\right)\frac{4}{9}\left(\frac{3}{4}\gamma_T+\frac{1}{4}\gamma_L\right)^2\right. \\
&\quad\left.-2\left(\frac{3}{4}\gamma_T+\frac{1}{4}\gamma_L\right)\left[\frac{k_L}{6}\left(\gamma_P-\frac{2}{3}\gamma_L\right)+\frac{k_T}{2}\gamma_P+\left(\frac{k_L}{4}+\frac{k_T}{4}\right)\frac{4}{9}\gamma_L\right]\right\}-f,
\end{aligned}
\tag{56}
$$

where (with α_L defined in the proof of Lemma 5):

$$
\begin{aligned}
\mathbb{E}\left(\left(\mathbb{E}_T\theta_P\right)^2\right)=\frac{1}{4}\Bigg[&\left(1+\frac{\alpha_L(1-\alpha_L)}{1-\alpha_L^3}\right)\bar{\theta}_P^2-\left(1-\frac{3\alpha_L(1-\alpha_L)}{1-\alpha_L^3}\right)\left(\frac{\underline{\theta}}{\gamma_L-\gamma_T}\right)^2 \\
&\times\left(\frac{(1-\gamma_L)^2}{3}+\frac{(1-\gamma_T)^2}{3}-\frac{(1-\gamma_L)(1-\gamma_T)}{2}\right)\Bigg].
\end{aligned}
\tag{57}
$$

Online Appendix

Organizing a Kingdom

Charles Angelucci (MIT Sloan) Simone Meraglia (Exeter) Nico Voigtländer (UCLA, NBER, and CEPR)

A Additional Proofs

For completeness, we report all the steps needed to compute P's expected loss under *Separation* and '*indirect communication*', as reported in Appendix B.

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

(a) *Probabilities:*

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

$$Pr\left(\theta_P \in \left[\theta_{P,-k}, \theta_{P,-(k-1)}\right]\right) = \frac{1}{\frac{2\bar{\theta_P}}{\left(\bar{\theta}_P + \frac{Q}{\gamma_L - B}\right)\left(-\alpha_L^k + \alpha_L^{k-1}\right)}} = \frac{\left(\bar{\theta}_P + \frac{Q}{\gamma_L - B}\right)}{2}\left(\alpha_L^{k-1} - \alpha_L^k\right), \text{ if } \theta_P < \frac{Q}{\gamma_L - B}. \quad \text{(A.2)}$$

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

$$\theta_{P,k} = \frac{Q}{\gamma_L - B} + \alpha_L^{k-1}\left(\bar{\theta}_P + \frac{Q}{\gamma_L - B}\right), \text{ if } \theta_P > \frac{Q}{\gamma_L - B}, \quad \text{(A.3)}$$

$$\theta_{P,k} = \frac{Q}{\gamma_L - B} - \alpha_L^{k-1}\left(\bar{\theta}_P + \frac{Q}{\gamma_L - B}\right), \text{ if } \theta_P < \frac{Q}{\gamma_L - B}. \quad \text{(A.4)}$$

Therefore, conditional expectations are:

$$\mathbb{E}_T\left(\theta_P \mid m_{L,k}\right) = \frac{Q}{\gamma_L - B} + \frac{\alpha_L^{k-1}\left(1+\alpha_L\right)}{2}\left(\bar{\theta}_P - \frac{Q}{\gamma_L - B}\right), \quad \text{if } \theta_P > \frac{Q}{\gamma_L - B}; \tag{A.5}$$

$$\mathbb{E}_T\left(\theta_P \mid m_{L,k}\right) = \frac{Q}{\gamma_L - B} - \frac{\alpha_L^{k-1}\left(1+\alpha_L\right)}{2}\left(\bar{\theta}_P + \frac{Q}{\gamma_L - B}\right), \quad \text{if } \theta_P < \frac{Q}{\gamma_L - B}; \tag{A.6}$$

(c) *Ex ante Expectations and Variances:*

$$\begin{aligned}\mathbb{E}\left(\mathbb{E}_T\theta_P\right)^2 = \int_{-\underline{\theta}}^{\underline{\theta}}\int_{-\underline{\theta}}^{\underline{\theta}}\Bigg\{\sum_{k=1}^{\infty}\Bigg[&\frac{\left(\bar{\theta}_P - \frac{Q}{\gamma_L - B}\right)}{2}\left(\alpha_L^{k-1} - \alpha_L^{k}\right) \\ &\times\left(\frac{Q}{\gamma_L - B} + \frac{\alpha_L^{k-1}\left(1+\alpha_L\right)}{2}\left(\bar{\theta}_P - \frac{Q}{\gamma_L - B}\right)\right)^2\Bigg] \\ &+\sum_{k=1}^{\infty}\Bigg[\frac{\left(\bar{\theta}_P + \frac{Q}{\gamma_L - B}\right)}{2}\left(\alpha_L^{k-1} - \alpha_L^{k}\right) \\ &\times\left(\frac{Q}{\gamma_L - B} - \frac{\alpha_L^{k-1}\left(1+\alpha_L\right)}{2}\left(\bar{\theta}_P + \frac{Q}{\gamma_L - B}\right)\right)^2\Bigg]\Bigg\} \\ &\times\frac{1}{2\underline{\theta}}\frac{1}{2\underline{\theta}}d\theta_L d\theta_T,\end{aligned} \tag{A.7}$$

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. (A.7) can be rewritten as:

$$\begin{aligned}\mathbb{E}\left(\left(\mathbb{E}_T\theta_P\right)^2\right) = \int_{-\underline{\theta}}^{\underline{\theta}}\int_{-\underline{\theta}}^{\underline{\theta}}\Bigg\{\frac{1}{4}\Bigg[&\left(1 + \frac{\alpha_L\left(1-\alpha_L\right)}{1-\alpha_L^3}\right)\bar{\theta}_P^2 \\ &-\left(1 - \frac{3\alpha_L\left(1-\alpha_L\right)}{1-\alpha_L^3}\right)\left(\frac{Q}{\gamma_L - B}\right)^2\Bigg]\Bigg\} \\ &\times\frac{1}{2\underline{\theta}}\frac{1}{2\underline{\theta}}d\theta_L d\theta_T,\end{aligned} \tag{A.8}$$

which gives:

$$\begin{aligned}\mathbb{E}\left(\left(\mathbb{E}_T\theta_P\right)^2\right) =& \frac{1}{4}\Bigg[\left(1+\frac{\alpha_L\left(1-\alpha_L\right)}{1-\alpha_L^3}\right)\bar{\theta}_P^2 \\ &-\left(1-\frac{3\alpha_L\left(1-\alpha_L\right)}{1-\alpha_L^3}\right)\left(\frac{\underline{\theta}}{\gamma_L-\gamma_T}\right)^2 \\ &\times\left(\frac{\left(1-\gamma_L\right)^2}{3}+\frac{\left(1-\gamma_T\right)^2}{3}-\frac{\left(1-\gamma_L\right)\left(1-\gamma_T\right)}{2}\right)\Bigg].\end{aligned} \tag{A.9}$$

Finally, (56) follows from (A.9), $\mathbb{E}\left(\theta_L^2\right)=\mathbb{E}\left(\theta_T^2\right)=\frac{\underline{\theta}^2}{3}$, $\mathbb{E}\left(\theta_P^2\right)=\frac{\bar{\theta}^2}{3}$, and $\mathbb{E}\left(\theta_P\mathbb{E}_T\left(\theta_P\right)\right)=\mathbb{E}\left(\left(\mathbb{E}_T\left(\theta_P\right)\right)^2\right)$.

B 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

[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*.

strong incentives to participate in central assemblies.

C Bottom-Up Communication

We explore an alternative informational environment that has received significant attention in the historical literature on assemblies. 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.[2] 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:

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

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:

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

where, $F(\cdot)$ is the cost of establishing a *direct* communication channel with the elites. From (C.2), 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.

For simplicity, we assign equal weights to the *adaptation* and *coordination* components

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

in players' utilities, with all coordination motives equally weighted. Specifically:

$$\textbf{A6: } \rho = \tfrac{1}{2},\ \lambda = \tfrac{1}{3},\ \eta = \tfrac{1}{3}.$$

Complete Information.: 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 (8) and:

$$a_P(i,i) = (1-\gamma_i)\,\theta_i + \gamma_i \theta_P, \tag{C.3}$$

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

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 (C.2), (8), (C.3) and (C.4), P's expected payoff is:

$$\begin{aligned} U_P(i,i) = &-\left\{\frac{k_i}{2}(\gamma_P - \gamma_i)^2 + k_j\left[(1-\gamma_i)^2 + \frac{3}{2}(1-\gamma_j)^2 + \frac{(1-\gamma_P)^2}{2}\right]\right\}\frac{\underline{\theta}^2}{3} \\ &-\left\{\frac{k_i}{2}(\gamma_P - \gamma_i)^2 + k_j\left[\frac{(\gamma_P - \gamma_i)^2}{2} + \frac{3}{2}(\gamma_i - \gamma_j)^2\right]\right\}\frac{\bar{\theta}^2}{3}. \end{aligned} \tag{C.5}$$

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 C.1. *Under complete information, P weakly prefers L-Integration to T-Integration.*

Proof. Given (8) and (C.3), the proof follows that of Lemma 1. □

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

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

$$r_i(L,T) = a_i(L,T) = \frac{5k_i + 4k_j}{6(k_i + k_j)}(1-\gamma_i)\theta_i + \frac{k_i + 2k_j}{6(k_i + k_j)}(1-\gamma_j)\theta_j + \frac{(5k_i + 4k_j)\gamma_i + (k_i + 2k_j)\gamma_j}{6(k_i + k_j)}\theta_P, \tag{C.7}$$

for $i, j \in \{L, T\}$ and $i \neq j$, where (C.7) is identical to (13) 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 C.2. *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 Online Appendix C.1. □

Taken together, Lemmas C.1 and C.2 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 C.3. *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 Online Appendix C.1. □

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 Online Appendix C.1. □

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.[3]

Incomplete Information.: Suppose now that 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.[4] Next, we examine the optimal communication structures under integration and under separation.

Under *L-Integration*, P's action is independent of θ_T. This implies that incomplete information is inconsequential, and all actions and payoffs are identical to those in the complete information benchmark.

Lemma C.4. *Under L-Integration, P does not engage in 'direct communication' with A_T.*

Proof. Since a_P is independent of θ_T, 'direct communication' does not occur to save f. □

When comparing the main framework discussed in Sections 2 and 3 to the framework examined here, we observe that Lemma 4 and Lemma C.4 lead to similar outcomes, albeit for different reasons. In the main framework analyzed in Section 3, when A_L has control over D_T, P can effectively utilize A_L as a reliable intermediary to convey information about

[3]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*.

[4]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.

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 (see (C.10), (C.11), and (C.12) in Online Appendix C.1). The following lemma states that P can only obtain coarse information about θ_T when relying on the message sent by A_L.

Lemma C.5. *Under Separation, when P communicates solely with A_L ('indirect communication'), there does not exist an equilibrium in which $m_L^R = \theta_T$, $\forall \theta_T \in \left[\underline{\theta}, \overline{\theta}\right]$.*

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

Intuitively, when A_L lacks control over D_T, they have an incentive to misrepresent 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. More accurate information improves coordination between P and A_T. However, it results in actions 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 accordance with our analysis in Section 3, we set $f = \epsilon$, with $\epsilon > 0$ as small as one likes.

Lemma C.6. *Under Separation, P communicates directly with A_T (i) for sufficiently high values of k_T and (ii) for an open neighborhood of $\gamma_P = \gamma_L = \gamma_T$ such that $\gamma_P \geq \gamma_L \geq \gamma_T$ (i.e., when players' preferences for the common state are sufficiently homogeneous).*

Proof. See Online Appendix C.1. □

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 overall coordination.

We now leverage the findings established in Lemma C.4 through Lemma C.6 to examine P's preferred allocation of administrative control over local units *and* communication structure. Following the result established in Lemma C.6, we focus on the case of interest in

which players' preferences are sufficiently homogeneous, creating incentives for P to learn θ_T.

Proposition C.2. *In an open neighborhood of $\gamma_P = \gamma_L = \gamma_T$ such that $\gamma_P \geq \gamma_L \geq \gamma_T$ (i.e., when players' preferences for the common state are sufficiently homogeneous), 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 Online Appendix C.1. □

Proposition C.2 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, the increasing economic potential 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 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.

C.1 Bottom-Up Communication: Proofs

Proof of Lemma C.2. The proof of point $i)$ follows from (8)-(C.3)-(C.4) and (C.6)-(C.7). 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.7)-(C.6) depend on k_T. By substituting (C.6)-(C.7) in (C.1), 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.7)-(C.6), 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 C.3. Suppose $k_T = k_L$. Then, (C.7) is identical to (13). We proceed by comparing the extended model introduced in this Section 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:

$$\frac{k_T}{2}\left[(1-\gamma_L)^2\frac{\underline{\theta}^2}{2}+(1-\gamma_T)^2\frac{\underline{\theta}^2}{2}+(\gamma_L-\gamma_T)^2\frac{\overline{\theta}^2}{2}\right]. \tag{C.8}$$

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

$$\frac{k_T}{24}\left[(1-\gamma_L)^2\frac{\underline{\theta}^2}{2}+(1-\gamma_T)^2\frac{\underline{\theta}^2}{2}+(\gamma_L-\gamma_T)^2\frac{\overline{\theta}^2}{2}\right]. \tag{C.9}$$

Because (C.8) is larger than (C.9), 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 C.1 and C.2 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 C.2 and C.3 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 $\overline{k}^E \geq \underline{k}^E$. ■

Proof of Lemma C.6. We begin the proof by reporting players' equilibrium actions under *Separation*. Specifically, we have:

$$\begin{aligned} a_P(L,T) = &\frac{5k_L + k_T}{6(k_L + k_T)}(1-\gamma_L)\theta_L + \frac{k_L + 5k_T}{6(k_L + k_T)}(1-\gamma_T)\mathbb{E}_P(\theta_T) \\ &+ \frac{(5k_L + k_T)\gamma_L + (k_L + 5k_T)\gamma_T}{6(k_L + k_T)}\theta_P, \end{aligned} \tag{C.10}$$

$$\begin{aligned} r_L(L,T) = a_L(L,T) = &\frac{5k_L + 4k_T}{6(k_L + k_T)}(1-\gamma_L)\theta_L + \frac{1}{8}(1-\gamma_T)\theta_T \\ &+ \frac{5k_L + k_T}{24(k_L + k_T)}(1-\gamma_T)\mathbb{E}_P(\theta_T) + \frac{(5k_L + 4k_T)\gamma_L + (k_L + 2k_T)\gamma_T}{6(k_L + k_T)}\theta_P, \end{aligned} \tag{C.11}$$

$$\begin{aligned} r_T(L,T) = a_T(L,T) = &\frac{5}{8}(1-\gamma_T)\theta_T + \frac{5k_T + k_L}{6(k_L + k_T)}(1-\gamma_T)\mathbb{E}_P(\theta_T) \\ &+ \frac{2k_L + k_T}{6(k_L + k_T)}(1-\gamma_L)\theta_L + \frac{(5k_T + 4k_L)\gamma_T + (k_T + 2k_L)\gamma_L}{6(k_L + k_T)}\theta_P, \end{aligned} \tag{C.12}$$

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 (C.10)-(C.11)-(C.12), with $\mathbb{E}_P(\theta_T) = 0$. In case $ii)$, actions are given by (C.6) and (C.7). For both cases, we plug the relevant actions in P's utility given by (C.2). 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 C.5 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 C.2. Consider first the case in which P chooses *L-Integration*. From Lemma C.4, 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 C.6, 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 $f = \epsilon$ incurred by P.

Therefore, the result follows from Proposition C.1. ■