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The Feudal Revolution and Europe's Rise: Political Divergence of the Christian West and the Muslim World before 1500 CE

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We document a divergence in the duration of rule for monarchs in Western Europe and the Islamic world beginning in the medieval period. While leadership tenures in the two regions were similar in the 8th century, Christian kings became increasingly long lived compared to Muslim sultans. We argue that forms of executive constraint that emerged under feudal institutions in Western Europe were associated with increased political stability and find empirical support for this argument. While feudal institutions served as the basis for military recruitment by European monarchs, Muslim sultans relied on mamlukism—or the use of military slaves imported from non-Muslim lands. Dependence on mamluk armies limited the bargaining strength of local notables vis-à-vis *the sultan, hindering the development of a productively adversarial relationship between ruler and local elites. We argue that Muslim societies' reliance on mamluks, rather than local elites, as the basis for military leadership, may explain why the Glorious Revolution occurred in England, not Egypt.*

"*The kingdoms known to history have been governed in two ways: either by a prince and his servants, who, as ministers by his grade and permission, assist in governing the realm; or by a prince and by barons....Examples of these two kinds of government in our own time are the Turk and the King of France*" (Machiavelli [1532] 1903, 14–15).

An influential literature sees the roots of the Industrial Revolution in Europe's unique institutional framework.[1] While it seems increasingly clear that growth-friendly, sovereign-constraining institutions—including respect for property rights and the rule of law—were key to the emergence of sustained economic development in Europe, scholars struggle to explain both how such institutions emerged and why they were initially limited to Western Europe. Recent studies focusing on the evolution of European institutions generally begin their analysis after the year 1500 CE, while noting the peculiarity of Europe's "initial" institutional framework.[2] For example, in the conclusion of their seminal study of the evolution of English institutions following the Glorious Revolution, North and Weingast (1989) acknowledge that English institutions provided abnormal checks on the sovereign from an early (e.g., medieval) date. Similarly, Acemoglu, Johnson, and Robinson (2005) note that European political institutions established prior to 1500 CE already placed "significant checks" on the monarch.

A distinguished line of scholars has stressed the feudal origins of European institutional exceptionalism. Montesquieu ([1748] 1989, 619) was an early proponent of the argument that feudalism "diminished the whole weight of lordship." Previous scholarship suggests that feudalism coincided with a rise of a powerful landed aristocracy that proved instrumental in constraining the sovereign through the development of medieval parliaments.[3] Van Zanden, Buringh, and Bosker (2012) provide a historical treatment of the emergence of European parliaments, arguing that these institutions ultimately facilitated medieval economic and institutional development; Stasavage (2010) describes the conditions under which parliamentary institutions endured in the medieval and early modern eras.

This article uses data on ruler duration—the most significant political indicator that is reliably available for the premodern period—in Western Europe and the Islamic world to investigate the origins of European institutional exceptionalism.[4] We show that although rulers assuming power in 700 CE in both Western Europe and the Islamic world could expect similar lengths of ruler tenure, by the year 1100 CE European

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[1] See Acemoglu, Johnson, and Robinson (2005), Acemoglu and Robinson (2012), DeLong and Shleifer (1993), North, Wallis, and Weingast (2009), and North and Weingast (1989).

[2] Greif's (1994) examination of the cultural determinants of institutional development in premodern societies of the Mediterranean and van Zanden's (2009) study of the medieval roots of the Industrial Revolution are notable exceptions.

[3] See Downing (1989) and Strayer (1970).

[4] Throughout the article we use the expressions "Western Europe," "Latin West," and "Christian West" interchangeably to denote non-Islamic polities in Western Europe.

rulers remained in power for longer than their Muslim counterparts. The gap in ruler tenure persists until the end of our sample in 1500 CE.

If the "feudal revolution" (Duby 1978) was the key to the divergence of Western Europe from the rest of the world, what was it about feudalism that promoted both ruler stability and economic growth? And how did feudal institutions compare to methods of social control and organization in the Islamic world? European monarchs lacked the financial resources to outsource their military needs to foreign mercenaries following the fall of the Roman Empire. The feudal relationships which evolved served as the foundation for military human resources as the landed nobility of Europe emerged as a "warrior class." When monarchical abuses took place, barons were able to impose forms of executive constraint on European kings that formed the basis for more secure property rights. Sultans in the Muslim world, by contrast, inherited more capable bureaucracies from conquered Byzantine and Sassanid lands and introduced mamlukism—or the use of slave soldiers imported from non-Muslim lands—as the primary means of elite military recruitment. Mamluks—segregated from the local population—swore their allegiance to the sultan. Local elites in the Muslim world did not serve as the source of elite military recruitment and, thus, were poorly positioned to impose the types of constraints on the executive that became evident in Europe.[5] Mamlukism—as a military-political institution—enabled the ruler to bypass local elites in the raising of a military, leading to a concentrated, but brittle, form of power held by Muslim sovereigns compared to their European counterparts.

The theoretical logic behind our historical narrative is straightforward; decentralizing power increases the cost of an unsuccessful revolt for the monarch's rivals. In other words, armed local elites in Europe were able to extract a better "soft contract" from their monarch than in the Islamic world and were, therefore, less likely to overthrow that monarch. From an empirical perspective, we focus on testing three implications of this hypothesis. First, if the introduction of feudal institutions led to an increase in ruler stability, we should identify a break in European ruler tenure coinciding with the introduction of these institutions. Similarly, we should observe this increase starting within the Carolingian Empire—where feudalism originated—spreading to the rest of Europe thereafter. Finally, if longer ruler tenures were driven by forms of power sharing, we should observe a positive correlation between constraints on the sovereign and ruler duration. We present empirical evidence consistent with each of these implications.

If feudalism curbed the power of European monarchs with implications for economic growth, what lessons can we draw about the Islamic world? Our findings suggest that the Muslim world fell behind because of the inability of Muslim sultans to be credibly constrained. This explanation is distinct from recent work which has argued that Islamic institutions, like Muslim inheritance laws and charitable endowments, played a crucial role in the region's economic underdevelopment (Kuran 2004, 2009, 2010a, 2010b) as well as a focus on the collectivist nature of "Eastern" societies and the negative externalities associated with informal monitoring and punishment mechanisms (Greif 1994).

The remainder of the article is structured as follows. The next section discusses the construction of the ruler duration data and documents the divergence in ruler duration for the Islamic and Christian worlds. The third section offers a historical narrative detailing our theory for this divergence in political outcomes. The fourth section empirically interrogates observable implications of our theory. The fifth section investigates the relevance of a number of alternative hypotheses. A sixth section concludes.

RULER DURATION IN THE CHRISTIAN AND MUSLIM WORLDS

The most basic unit of political analysis for both Christian Europe and the Islamic world during the medieval period is the monarch. Political organization during the medieval period was dominated by monarchies (Wormald 2005) and by 700 CE it was clear that individual rulers—in particular, kings—would be the decisive holders of political power (Fouracre 2005). The medieval period was characterized by the proliferation of hundreds of monarchies for which students of history and medieval numismatics—the study of currency and coinage—have invested tremendous effort in creating leadership chronologies. As a result, ruler duration may be the most reliable, politically significant indicator for which data are available for a wide swath of both time and territory.

Duration of individual rule in the modern period has long been the subject of empirical study in political science (Bienen and van de Walle 1991; Blondel 1980; Bueno de Mesquita, Smith, Siverson and Morrow 2003; Goemans, Gleditsch, and Chiozza 2009). Such studies typically assume that political leaders seek to remain in office in an environment with multiple domestic political rivals as well as external threats (Bueno de Mesquita et al. 2003). Although most studies of ruler duration focus on the modern period, concerns about how to maintain political office and avoid overthrow are perennial. The following section explicitly examines changing trends in ruler duration across Christian and Muslim dynasties from the start of the 8th century to the start of the 16th century.

Data

To examine trends in ruler duration in both the Christian West and the Muslim world, we have compiled two primary data sets. Both data sets focus on the duration of rule for the highest ranking ruler available in an

[5] This pattern suggests a "reversal of fortune" though operating through a different mechanism than described by Acemoglu, Johnson and Robinson (2002). The reversal we propose is one where fiscal and administrative capacity actually hindered long-term economic prosperity by providing Islamic dynasties with the means to avoid bargaining with their own elite populations.

independent governing unit. In many cases, this individual carries the title of king, but might also be called a prince, sultan, tsar, amir, khan, or lord. The governing units include kingdoms, duchies, principalities, tribal confederations, and city states.

The first data set draws on existing compendia of rulers across medieval dynasties. *Islamic Dynasties* (Bosworth 1996) and *Dynasties of the World* (Morby 1989) represent the best collections of information on the duration of rulers in the Islamic world and Christian Europe, respectively. Bosworth (1996) focuses exclusively on the Islamic world, providing the most comprehensive data on dynasties in this region. Morby (1989) provides ruler duration for dynasties across the world with an "emphasis on Europe and on its roots in the ancient world" (Morby 1989, vii). Our baseline data set (which we henceforth refer to as the "Bosworth/Morby data set") includes all the rulers in Bosworth (1996) who assumed power before the year 1500 CE and those in Morby (1989) who assumed power before this date in the subsections 1–7 and 10 of the section entitled "Europe" and the section entitled "The Barbarian West."[6]

The second data set collects information on all sovereigns for political units depicted in a set of historical maps developed as part of the Euratlas project (Nüssli 2011).[7] The Euratlas project provides the geographic boundaries of all political entities covering the earth's surface in the box between the longitudes 15 west and 50 east and the latitudes 20 north to 60 north. This encompasses all of Europe, North Africa, and parts of northwestern Asia including Anatolia and the Levant. We use the GIS shape file "sovereign states" in Nüssli (2011) at the start of $t \in \{700, 800, 900, 1000, 1100, 1200, 1300, 1400\}$ CE to define the population of political entities. We have attempted to determine the length of rule for every monarch that assumed power in each of these political entities on the interval $[t, t + 100)$. Next, we assigned rulers who assumed power on the interval $[t, t + 100)$ to the map of year t. In other words, our sample is updated every 100 years to include the entities Nüssli (2011) denotes as sovereign states.

We have constructed this second data set for two reasons. First, Nüssli's maps were, to the best of our knowledge, compiled independently of the Bosworth/Morby data set and thus help alleviate concerns that our results are sensitive to a given author's definition of ruler. Second, Nüssli's maps allow us to introduce a set of geographic control variables that permit testing of alternative explanations.

Trends in Ruler Duration

This section presents the trends in ruler duration for the Christian West and the Muslim world. These results are summarized by Figure 1 which plots the moving average of ruler duration in Western Europe and the Islamic world starting in the year 700 CE using the Bosworth/Morby data set. Ruler duration in Europe overtakes leader tenure in the Islamic world sometime around 1000 CE.

Table 1 reports the regression output associated with this relationship. We restrict the sample to rulers assuming power on or after 700 CE and before 1500 CE and run regressions of the form

$$\text{duration}_{itc} = \theta_c d_c + \sum_{c=700}^{1400} \alpha_c \cdot \text{WE}_i \cdot d_c + \varepsilon_{itc}, \qquad \textbf{(1)}$$

where duration_{itc} gives the duration in power of ruler i that assumed power in year t in century c. The d_c are century dummy variables and WE_i is an indicator variable equal to 1 if ruler i assumed power in Western Europe. Throughout the empirical section, we cluster standard errors by dynasty.[8]

The coefficients θ_c and α_c estimated using the Bosworth/Morby data set are presented in columns (1) and (2) of Table 1. Column (1) reports $\hat{\theta}_c$, or the mean duration of rulers in the Islamic world, by century. Column (2) displays $\hat{\alpha}_c$, or the difference in mean duration between Western Europe and the Islamic world, by century. These estimates show that although before the year 1000 CE ruler duration in Western Europe and the Islamic world were not jointly statistically different at the 10% level, after this date one can reject the null hypothesis that leadership tenures were the same.[9]

Columns (3)–(5) present the results using the data we have collected using the Nüssli data set. Columns (3) and (4) of Table 1 provide estimates of θ_c and α_c. Although the results obtained using the Bosworth/Morby and Nüssli data sets are similar, in the latter data set the differences in ruler duration between Western Europe and the Islamic world are not statistically significant until after 1100 CE.

In Column (5) we present our estimates of $\hat{\alpha}_c$ when geographic controls are included. These controls include the area of the political entity at the start of the century, the proportion of the entity that was part of the Roman Empire in the year 100 CE, the latitude of the centroid of the political entity, and the average agricultural suitability of the entity. The introduction of these control variables does not change the qualitative implications of the results.

Method of Exit

Does divergence in ruler duration reflect a change in political stability? And what do we know about the method of exit for the monarchs examined? We explore these questions by constructing a dummy variable equal to 1 if Morby (1989) identifies a ruler as

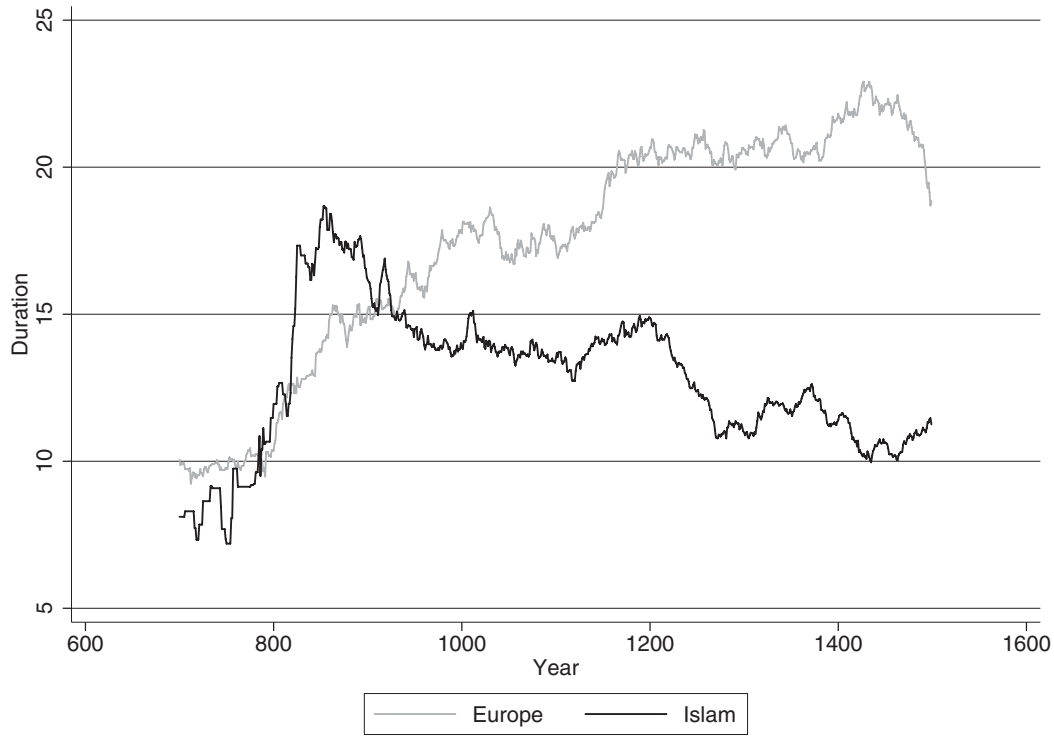
[6] In the online appendix, we provide a comprehensive description of all of the data used (http://www.journals.cambridge.org/psr2013001).

[7] A detailed bibliography of the sources used by Nüssli (2011) is available at http://www.euratlas.com/index.html.

[8] We use OLS throughout the article; duration models yield qualitatively similar results to those presented.

[9] The p value of 0.11 is almost statistically significant at the 10% level and is driven by the coefficient on the year 900 CE. Thus there is some evidence in the Bosworth/Morby data set that ruler durations may have begun to statistically diverge as early as 900 CE.

FIGURE 1. Divergence Between Ruler Durations in the Christian West and Islamic Worlds



Note: The darker line denotes the 100-year moving average for the Islamic world whereas the lighter line denotes the moving average for the Christian West.

having been deposed. Morby (1989) defines deposition as removal by conquest or overthrow. Although our baseline data set relies on Bosworth (1996) for data on ruler duration in the Islamic world, Morby (1989) also reports information on duration and overthrow for a number of Muslim polities. We make use of that information here.

Figure 2 shows the moving average of ruler duration and the probability of being deposed for Western Europe (upper graph) and the Islamic world (lower graph), respectively, for the period after 800 CE. For both regions, there exists an inverse relationship between ruler duration and the probability of being overthrown, suggesting that ruler duration is a reasonable proxy for political stability. Rulers in Western Europe are significantly less likely to be deposed than their Muslim counterparts, over time.[10]

This section has established two empirical facts. First, ruler duration in Western Europe statistically diverged from duration in the Islamic world during the medieval period. Second, this divergence was driven, in part, by a reduced probability of monarchical overthrow in Western Europe.

EXPLAINING THE DIVERGENCE IN POLITICAL STABILITY

Scholars have argued that the political institutions that emerged in Western Europe in the late Middle Ages proved to be growth enhancing. Explaining how Europe came to develop growth-promoting political institutions is virtually impossible through an examination of Europe alone. Indeed, understanding the determinants of sustained economic growth in Europe demands comparison with an appropriate historical counterfactual case or set of cases. As a result, we explore the *political* origins of institutional divergence in the Christian and Muslim worlds prior to 1500 CE. This allows for a focused comparison of the two medieval civilizations within what historians have called the "Western core."[11]

Feudalism, Parliaments, and the Rise of Europe

By the 13th century parliamentary institutions had spread across Western Europe (Stasavage 2010). The

[10] In the online appendix, we present the regression output associated with this relationship.

[11] Morris (2010), for example, describes the Western core as encompassing Europe, North Africa, Anatolia, and Mesopotamia and contrasts this area with the "Eastern core" which includes China and other East Asian societies.

TABLE 1. Ruler Duration and the Rise of Europe

	Islam (1)	WE-Islam (2)	Islam (3)	WE-Islam (4)	WE-Islam (5)
[700, 800)	11.52	−0.87	10.56	1.89	−0.62
	(2.81)	(3.09)	(6.25)	(6.37)	(5.89)
[800, 900)	14.89	1.63	15.55	−2.01	−2.04
	(1.89)	(2.48)	(4.13)	(4.41)	(3.80)
[900, 1000)	13.91	4.65	14.03	−0.40	1.02
	(1.07)	(1.96)	(3.02)	(3.37)	(3.60)
[1000, 1100)	12.56	3.73	14.03	0.54	2.79
	(1.11)	(1.52)	(3.08)	(3.39)	(3.54)
[1100, 1200)	14.40	5.84	10.86	6.44	10.14
	(0.84)	(1.60)	(1.33)	(2.55)	(2.91)
[1200, 1300)	10.74	9.69	11.39	6.07	8.32
	(1.08)	(1.54)	(2.71)	(3.24)	(3.68)
[1300, 1400)	11.29	10.34	8.99	9.87	11.87
	(0.93)	(1.38)	(1.26)	(1.73)	(2.69)
[1400, 1500)	11.10	8.82	7.75	10.59	11.58
	(0.88)	(1.47)	(1.34)	(1.75)	(2.96)
p value 700–900		[0.11]		[0.74]	[0.85]
p value 1000–1400		[0.00]		[0.00]	[0.00]
Data Set	BM	BM	Nüssli	Nüssli	Nüssli
Controls?	No	No	No	No	Yes
N	3047	3047	1785	1785	1730

Note: Estimates of Equation (1) presented using the duration of a ruler in power as the dependent variable. Columns (1) and (3) present the mean value of ruler duration in the Islamic world by century. Columns (2), (4), and (5) provide the difference between the averages in Western Europe and the Islamic world. The controls in column (5) include the area of the political entity at the start of the century, the proportion of the entity that was part of the Roman Empire in the year 100 CE, the latitude of the centroid of the political entity, and the average agricultural suitability of the entity. The *p* value corresponds to the test that the year coefficients denoted are jointly equal to zero. Standard errors are in parentheses and are clustered by dynasty in the Bosworth/Morby data set and by political entity in the Nüssli data set.

usual narrative describing the birth of representative, sovereign-constraining political institutions begins with the collapse of the western Roman Empire. The fiscal position of the Germanic successor states to the Roman Empire tended to be weak. Unable to fund military expenditure through tax receipts, European rulers sought other avenues for raising armies. The innovations introduced by Charlemagne marked a pivotal change. Lacking the capacity to introduce a system of tax collection, Charlemagne required landholders to contribute troops instead of funds.

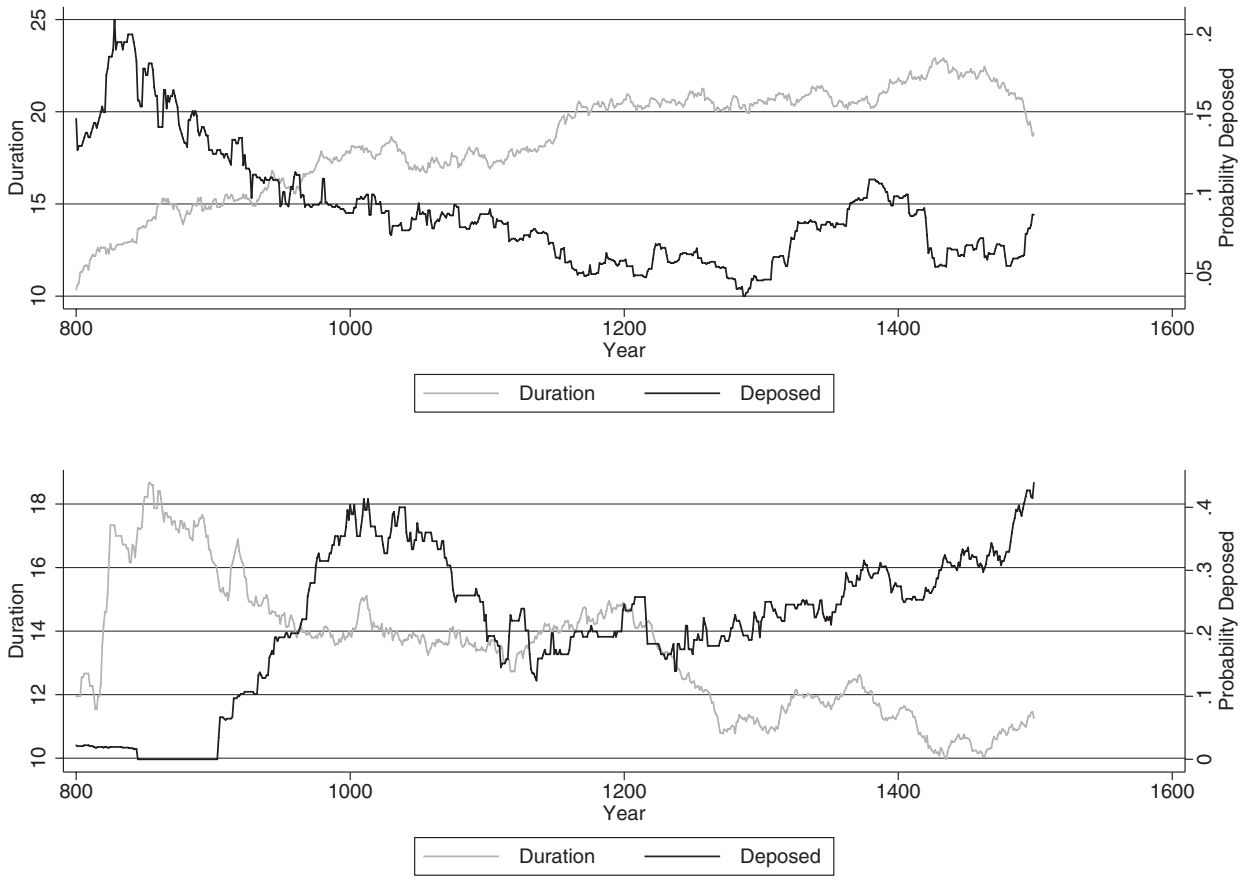
This change increased the power of large landlords in two ways. First, small, independent landowners pooled their lands with those of larger landholders to avoid having to offer themselves up for military service. As individual landholders began to "aggregate up," large landowners emerged who could ensure the cultivation of land while distributing the burden of military service across the larger body of peasants. Second and contemporaneously, European kings—like Charlemagne—required mounted troops, not just infantrymen, as a result of the introduction of the stirrup. The technological innovation of the stirrup meant that "mounted shock combat" became the norm in warfare and the large investment required to purchase a horse and armor for battle meant that monarchs needed to recruit individuals with wealth to serve as the mounted military elite (White 1962).

Mounted warriors, or knights, were often compensated for their service to the king through land grants (North, Wallis and Weingast 2009, 79).[12] According to Mann (1986, 393), the primitive state of European economies left "land grants, which gave the vassal soldier a potentially autonomous power base" as the only option for cash-strapped monarchs. European barons operating in the feudal system entered battle with their own, privately financed equipment, archers, and associated infantry. Such individuals often enjoyed opportunities to increase their land holdings or other forms of advancement as a result of their fighting. Together, the methods of military recruitment that emerged in medieval Europe came to be known as the feudal system.[13] The net result of these innovations was the creation of a landed aristocracy in Western Europe.

[12] Eventually European rulers transformed feudal obligations into revenue as vassals paid to commute their service, allowing for the cultivation of standing and mercenary armies (Goetz 1995, 473; Levi 1988, 106).

[13] The definition of feudalism is much debated. Here, we define feudalism as a system of military mobilization and organization distinct from manorialism, the economic system that provides the basis for feudalism.

FIGURE 2. Comparison of Rulers Duration and Probability of being Deposed in the Christian West and the Islamic World from 800 to 1500 CE



Note: The 100-year moving average of ruler duration is represented by the lighter line whereas the probability a ruler was deposed is shown with a darker line. The upper graph provides results for the Christian West; the lower graph reports results for the Islamic world.

Strayer (1970) provides a particularly compelling discussion of the feudal system and its consequences for state development. He argues that in the weakened and cash-strapped environment of early medieval Europe, "standing armies or permanent officer corps were unthinkable" (Strayer 1970, 27). Feudalism, characterized by its "fragmentation of political power" (1970, 14), emerged whereby rulers would raise armies on an as-needed basis by offering inducements of land or other privileges in exchange for support. While the system might appear to work against the creation of an effective state in the short run, Strayer argues that ultimately such a system "...can become a basis for state-building" (1970, 15). Although he does not bring any systematic empirical data to bear on this question, he argues that there was a notable increase in Western European political stability following 1000 CE and it was this stabilization of the political scene that allowed for an economic revival that included higher levels of agricultural production, population growth, and a revitalization of long-distance commerce (Strayer 1970, 19).[14] He finds that during this period of deepening political stability, the basic components of the modern state began to appear in Europe (Strayer 1970, 34).

The stability of European monarchs evolved hand in hand with both increased economic opportunities and growing constraints on the executive. Europe's more stable political environment contributed to the rise of towns and a nascent commercial revolution that became apparent beginning in the 12th century. Perhaps more importantly, the nature of elite military recruitment under feudalism led monarchical abuses to be self-limiting. Barons—who served as vassals to the king—had the military means by which to rebel and demand satisfaction of their grievances (Breay 2002). The independent military power of the barons allowed for a degree of bargaining strength *vis-à-vis* the monarchy

[14] A variety of studies show that by the late medieval period, interest rates in Western Europe had begun to decline dramatically (e.g, see Clark (1988) and Epstein (2000)), perhaps also a result of the increased political stability that we identify.

as barons could either rebel against the king or support an opposition figure who might meet their demands in exchange for support.

While increasing monarchical constraint did not translate immediately into the emergence of mature parliamentary institutions, in the years following the introduction of feudal reforms, sovereigns convened assemblies of their vassals to discuss, negotiate, and approve military activities (van Zanden et al. 2012). Over time, these assemblies became institutionalized and an expected element of the political scene. By the 13th century, more complex legal systems began to emerge in Europe (Stacey 1999). The long-term impact of this progression is described by Downing (1992, 3):

> "Late medieval Europe had numerous political characteristics that distinguished it from other major world civilizations. These characteristics, the most important of which were representative assemblies, constituted a basis for liberal democracy, which provided Europe with a predisposition toward democratic political institutions."

The promulgation of the Magna Carta in 1215 and eventual establishment of an English parliament populated by knights and barons in 1265 serve as a useful example for how this process played out in a particular country case. Under feudal institutions in England, the king had the right to demand "military service...whereby kings expected their vassals to contribute either in men or in money to armies" (Holt 1992, 30). Military service was a source of "widespread and perennial acrimony" between the king and his vassals (Holt 1992, 78). The Magna Carta reflected a greater acceptance of baronial demands on the part of the monarchy (Holt 1992, 189).[15] The Magna Carta laid the groundwork for future demands to limit the power of the monarch in England. Over time, a coalition of English elites established credible constraints on the executive with the Glorious Revolution of 1688, allowing for property rights and security from arbitrary taxation that ultimately encouraged economic growth (North and Weingast 1989).

In England and beyond, feudalism represented a meaningful fragmentation of political authority.[16] Kings—while the technical heads of government in their respective territories—had ceded considerable strength to local strongmen who enjoyed both public and private power, including control over public goods provision and land and rental income (Bisson 1994). In the face of divided and decentralized political power, how were European sovereigns able to increase their length of rule? Our argument is that more consensual government—as it emerged in Europe, with roots in medieval feudalism—enjoyed an advantage in terms of political stability. Forced by economic weakness to bargain and negotiate with local elites, European monarchs developed forms of political organization that exhibited a flexibility which trumped forms of more absolutist rule. These governmental forms contrast sharply with political organization and military recruitment in the Islamic world during the same time period.

The Islamic Equilibrium

> "*A monarchy where there is no nobility at all, is ever a pure and absolute tyranny; as that of the Turks*" (Bacon 1819, 282).

Political development in the Islamic world provides an important comparison to institutional evolution in Western Europe.[17] Like the Latin West, Muslim states ruled over some of the wealthiest Roman provinces and had access to the institutional heritage of ancient Greece, Rome and, in some cases, the Germanic states. Muslim states also controlled some areas that eventually reverted to Latin control.

Yet, feudalism—with its complex system of interlocking economic and military rights and obligations—did not emerge in the Islamic world. Despite being largely agrarian, no "landed aristocracy or gentry" materialized (Crone 1999, 322) nor did nascent parliamentary institutions develop. How were Muslim rulers able to circumvent the emergence of the type of landed aristocracy that proved so critical to constraining monarchs in Europe? This section argues that Muslim reliance on mamluks—or military slaves imported from non-Muslim lands—weakened state-society relations and hindered the development of impersonal political institutions. Thus, while European rulers were negotiating with local gentry to raise armies for matters of defense, Islamic rulers bypassed local elites by creating highly skilled armies of foreigners who had no ties to the existing gentry and swore allegiance directly to the sultan.

Historians of the medieval Islamic world have come to describe the introduction and eventual widespread adoption of mamluk institutions as a uniquely Islamic phenomenon. A mamluk is generally described as a military slave, though the term also refers to such individuals after their emancipation (Irwin 1986, 3).[18] Mamluks might better be defined as *elite* military slaves given the fact that they were typically well trained and generously paid.[19] As such, mamluks were not prototypical slaves, but rather military elite who might

[15] At around the same time European monarchs on the continent were also ceding liberties to vassals and barons (Holt 1992, 25–26). The Golden Bull of 1222 CE in Hungary laid out the rights of knights and counts under the feudal system (Holt 1992, 77–78). Regional parliaments in France were established in the 13th century. The English parliament began to meet regularly beginning in 1295 CE (van Zanden et al. 2012).

[16] See Bisson (1994) for more on this point.

[17] Islam first emerged in the Arabian peninsula in the 7th century and within 100 years, Arab Muslims came to occupy territory from the Iberian Peninsula to the Indus Valley after successful attacks on the Sassanid, Byzantine, and other empires.

[18] How can we think about mamluks in comparison to mercenaries that were frequently employed alongside skilled knights and town militias in Europe during this period? While mercenaries might be hired for a particular military campaign, offering their services to the highest bidder, mamluks were bought as slaves, often as children, and then carefully trained in the military arts to serve a particular sultan.

[19] While homeborn freemen were still used as foot soldiers, the "crack troops" (Crone 2003, 80) or "backbone" (Ayalon 1994b, 17) of the sultan's army typically consisted of soldier slaves.

serve in positions like provincial governor or treasurer (Irwin 1986, 4). After introduction by the Abbasids in the 9th century, mamluk armies were quickly adopted by numerous Muslim polities (Ayalon 1994a, 25) and spread across the settled areas of the Islamic world (Crone 2003, 79). Indeed, mamlukism became a defining feature of Muslim polities for a period of more than 800 years (Crone 2003).

Who became mamluks? The most sought after mamluks were of tribal origin imported from areas "marginal to the settled Islamic world" (Crone 2003, 78) like the Caucasus and Transoxania (present-day Uzbekistan, Tajikistan, and Kazakhstan).[20] Imported as children, mamluks often underwent years of training which sought to both imbue them with military skills but also to encourage their loyalty to the sultan (Pipes 1981, 9).[21] In order to stem the "corruption" of military slaves from the luxuries of settled life, mamluk institutions created a disconnect between the soldier slaves and local society. To deter the mamluks from being able to develop ties to either the local population or home-born troops, the mamluks were kept in "strict isolation" (Crone 1999, 319). Mamluks typically bore their Turkish names, even after their conversion to Islam, and predominantly used Turkish when speaking to one other with often superficial knowledge of the local language (Ayalon 1994b, 16–17). Mamluks were mainly married to female slaves from their countries of origin rather than local women (Ayalon 1994b, 16). The sons of mamluks (who did not enjoy mamluk status themselves) more frequently married women from the local population thus offering one opportunity for assimilation into nonmamluk society (Ayalon 1994b, 16–7).[22] A mamluk, then, was characterized by both his "personal dependence" on his master, the sultan, as well as his "cultural dissociation" (Crone 2003, 74) given both his foreign origin and the development of practices that kept him highly removed from the local populace.

There is no consensus in the existing literature as to why mamlukism emerged and spread throughout the Islamic world. In particular, why didn't medieval Muslim sultans use indirect rule as we observe emerged in Europe? Patricia Crone offers perhaps the most compelling explanation for why mamlukism arose in the Islamic world. Crone compares the Abbasids explicitly to the Carolingians—their contemporaries—who also faced the challenge of creating a polity for which their past experience offered no model. She writes, "both fell back on private ties, and in both cases, the outcome was political fragmentation. *But because the fiscal and administrative machinery survived in the east, the Abbasids could simply buy the retainers they needed, and so they lost their power not to lords and vassals but to freedmen* [i.e., manumitted mamluks]" (Crone 1999, 326, emphasis added).[23] This suggests that the superior economic position of the Muslim rulers allowed them to *import* the military support that they needed rather than to develop a system of feudalism where a king delegated land—and political power—to local lords.[24]

Imported military slaves were thought to be "safest to rely on" by a sultan (Marshall 1977, 399), offering the best defense of the ruler's interests (Lapidus 1973). Indeed, according to one observer, the "principal deterrent to the sultan's overthrow was the strength and loyalty of the royal mamluks" (Dols 1977, 148). If a "well-controlled" mamluk army could bring political stability to a polity, an uncontrolled one was a potential source of regime breakdown and disintegration (Crone 2003, 84). In some cases, sultans found themselves "imprisoned" by their own "praetorian guard" (Lapidus 1973, 37–38) who were successful at usurping power from within (Pipes 1981, 91). Military slaves came to threaten the very dynasties that had trained them, eventually establishing their own slave sultanates (Dale 2010, 16; Pipes 1981, 23).

Perhaps more pernicious than the direct challenge mamlukism posed on ruler stability was the indirect

[20] Though less common, black Africans also served as mamluks (Irwin 1986, 5). Fellow Muslims could not be enslaved and "People of the Book"—like Christians and Jews—were also protected from slavery and, thus, not eligible to serve as mamluks (Irwin 1986, 9).

[21] A number of factors made mamluks from the Caucuses and Transoxania (henceforth described as "Turks" or Turkish mamluks) particularly valuable. Pipes suggests that one advantage Turks may have had over non-Turks in their recruitment as mamluks is related to the stirrup. He writes that the introduction of the stirrup "enhanced the power of the peoples living where horses could be raised—primarily in the steppe lands and in deserts—and reduced the strength of peoples living in densely inhabited areas" (1981, 57). Hodgson also points out that the "steppes formed the most outstanding source of young slaves" as a result of the "boyhood military training as horsemen" (1977, 399). In addition, living in the mountains, deserts, and steppes of Central Asia and the Caucasus, Turkish mamluks were raised under conditions of extreme hardship, leading them to be both healthy and lean (Pipes 1981, 78). The medieval Arab historian Ibn Khaldun also argues that soldiers brought up in marginal areas also enjoyed a huge advantage over those recruited from more settled districts in terms of their ability to develop a sense of group solidarity, or *'asabiyyah*.

[22] Many of the factors that favored Turkish mamluks from marginal areas were not transferable across generations suggesting that there were both religious and practical reasons for not allowing mamluk status to be passed from father to son. As the qualities that made Turkish mamluks so valuable were not innate but rather acquired characteristics (Pipes 1981, 81), a sultan's stock of military slaves had to be constantly renewed. Maintaining military slaves was a costly proposition, then, forcing a large percentage of state resources into a human capital investment that required constant renewal.

[23] Slaves were not permitted to exercise jurisdiction over freemen and, as such, mamluks were typically manumitted prior to their first military engagement (Irwin 1986, 9). The practice of both converting and freeing a mamluk prior to battle had the important consequence of barring him from passing on mamluk status to his children (Irwin 1986, 9). As a result, the sons of mamluks could not belong to the mamluk aristocratic caste that emerged (Ayalon 1994c, 205) with important consequences for issues of intergenerational exchange.

[24] This perspective is largely consistent with other prominent accounts. White (1962, 29) describes the Latin West in the 8th century as being a much less sophisticated economy than that found in the Islamic world or the empires that it conquered. According to White (1962, 29), "the bureaucracy of the Carolingian kingdom was so slender that the collection of taxes by the central government was difficult." Given the expenses associated with raising a military force in an era of mounted shock combat, like horses and armor military service became "a matter of class" (White 1962, 30). See Hillenbrand (2005) for a description of the transfer of Byzantine and Sassanid administrative capacity to Muslim rulers.

impact of mamlukism on state-society relations. Military slaves who "had no roots in or commitments to local communities" were responsible for collecting taxes, maintaining order, and controlling important resources (Lapidus 1973, 39). Mamluks would typically hold a temporary, nonhereditary deed to land, called an *iqta'*, while living in urban areas far from their agricultural holdings (Borsch 2005, 26–32). Islam became unique among civilizations for the extent to which government service ceased to be associated with land ownership (Crone 2003, 87). While military slaves enjoyed the ability to serve as tax collectors as part of the *iqta'* system, "slave soldiers were no barons" as the *iqta'* did not invest the soldiery with land in a way comparable to the European fief (Crone 2003, 87; Finer 1997, 674). Sultans—reliant on their mamluk coterie for enforcing economic and political control—found themselves "alienated from the mass of their subjects" (Lapidus 1973, 37–38).

The provision of military service in medieval Europe, then, was highly decentralized in contrast to the mamluk system where military slaves constituted a centrally located and ethnically distinct caste. Mamluks were unable to transform themselves into a "hereditary landed baronage," in part because of the "impossibility of transmitting mamluk status to one's children" (Finer 1997, 676; Fukuyama 2011, 218; Irwin 1986, 8). Historians have argued that attempts to bequeath land holdings or title to offspring met with opposition from other mamluks who, as a collective, would have been hurt by such a move (Ayalon 1987, 208). Thus, while Western Europe saw a strengthening of lords who were responsible for defense of the land (Duby 1974), the Muslim world saw a deterioration in the bargaining strength of the aristocracy as control of the means of violence became dominated by a caste of military slaves. The relative bargaining strength of the gentry *vis-à-vis* the ruler has proven to have profound implications for the development of executive constraint and the creation of impersonal economic institutions.

Theoretical Implications of the Historical Narrative

The historical narrative above describes a pattern of political divergence in the Christian and Muslim worlds beginning in the 8th century following the end of Roman hegemony in the Mediterranean basin. Rulers in Christian Europe were forced to enter into forms of consensual rule with their local elite. The "feudal complex"—as this system came to be known—rolled out across continental Europe to places like England, Spain, and Scandinavia along Carolingian lines; feudal institutions expanded less evenly to Eastern Europe. In the Islamic world, on the other hand, mamluks were "not readily convertible into a rural nobility" (Anderson 1979, 506). While the political power of the European landed aristocracy increased over time, leading to a gradual transfer of power (e.g., control over monetary rents, public goods, and the legal system) from the sovereign to his "vassals" (e.g., the landed aristocracy), a similar process was not observed in the Islamic world.[25]

The result was the emergence of a set of political institutions and norms in Christian Europe which have been associated in the contemporary literature with forms of executive constraint. Constraint on the sovereign did not emerge without considerable local pressure and contestation. Nor did fully developed parliamentary institutions materialize immediately following the introduction of feudal reforms. Rather, medieval assemblies increased in importance over time and came to serve as a "logical extension of the traditional presentation of *auxilium et consilium*—aid and advice—by the vassal to his overlord" (Anderson 1979, 411). A sovereign's ability to tax without consent diminished under the relative strength and influence of local notables. The ability of European elites to guard against abuses of the executive increased during the medieval period while comparable developments were absent in Muslim polities. Figure 3 is a schematic of our argument.

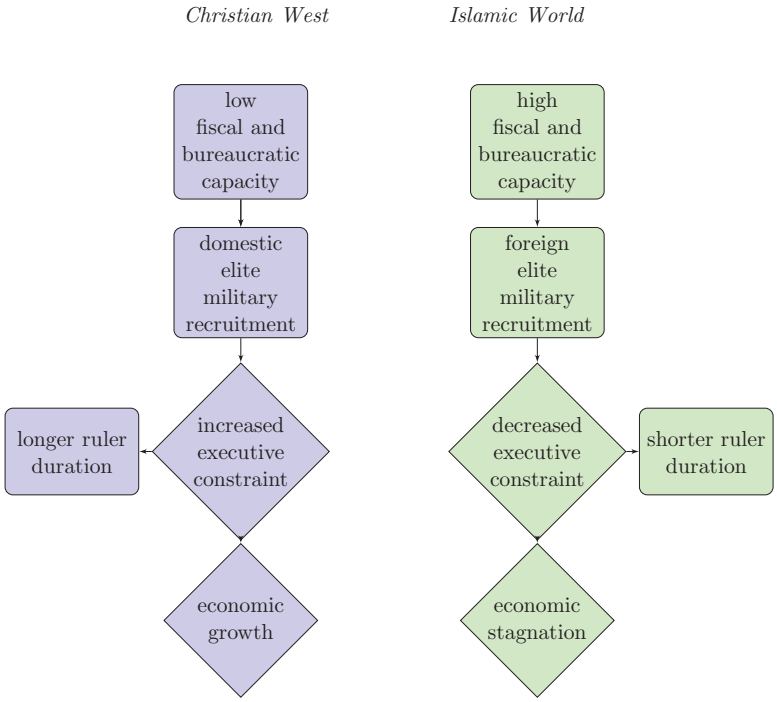
More abstractly, it can be argued that feudalism had three main effects. First, it decreased the rents, broadly construed, flowing to the sovereign. Second, it increased the rents flowing to the sovereign's potential rivals, the nonruling elite. Third, it increased the geographic decentralization of political power. Holding the probability of successfully overthrowing the sovereign constant, the emergence of feudalism should lead to a decrease in the probability of successful revolt. In other words, feudalism reduces the payoff to a successful revolt by decreasing the wedge between what the sovereign and his rivals receive with the status quo. Since feudalism makes revolt less enticing for the sovereign's rivals because they have both more to lose from an unsuccessful rebelion (and less to gain from a successful one), fewer revolts will be successfully staged "in equilibrium."[26]

Is it possible that the probability of successfully overthrowing the sovereign significantly declined as political power flows to his vassals, overwhelming the effects of the decrease in the wedge described above? Here the third premise (geographic decentralization of political power) is important. It seems unlikely that collective action among the landed nobility living on decentralized fiefs would have been easier than for mamluks, or other elites, concentrated in dynasty capitals. This view is supported by Stasavage (2010) who has argued that the costs of travel and communication before the 19th century were significant and served as an important barrier to elite coordination. This perspective is also supported by historians who have argued that coups

[25] Downing concisely summarizes these ideas for the European case as follows: "[t]he key to the rough balance between crown and nobility lies in the incomplete collapse of the Carolingian Empire in the ninth century and [...] then [the] contestation between the prince and local centers of power. Within this dual sovereignty emerged compromises, power sharing, and a climate of partial trust and partial mistrust that formed much of medieval constitutionalism" (1989, 214–215).

[26] We present a formalization of this argument in the online appendix.

FIGURE 3. Comparison of Institutional Development in Christian West (left) versus the Islamic World (right) Following the Decline of the Roman Empire



are more common in polities with centralized, salaried armies than for "land-based" military officers (Wickham 2005, 120–121). For Muslim sultans, mamlukism left rulers vulnerable to "discontents, mutinies, and ultimately, usurpations" (Finer 1997, 710).

EMPIRICAL TESTS

> *The Empire of Charlemagne was the critical point of the rupture [...] of the European equilibrium* (Pirenne [1939] 1980, 234).

In this section we provide three forms of empirical evidence consistent with the historical and theoretical narrative developed above. One testable implication of this framework is that ruler duration should increase in European polities with the introduction and spread of feudal institutions. Second, the observed increase in ruler durability should originate in areas that were previously part of the Carolingian Empire, where feudal reforms began and were most entrenched. Finally, constraints on the sovereign should be associated with longer ruler duration.

Carolingian Origins of Europe's Political Transformation

Our theoretical narrative draws on historical evidence suggesting increased constraint on the sovereign originates with the Carolingian dynasty. Carolingian governance relied—to a greater degree than its predecessors and peers—on forms of aristocratic collaboration that encouraged discussion, negotiation, and monarchical dependence on elite consent rather than coercion (Nelson 1999).

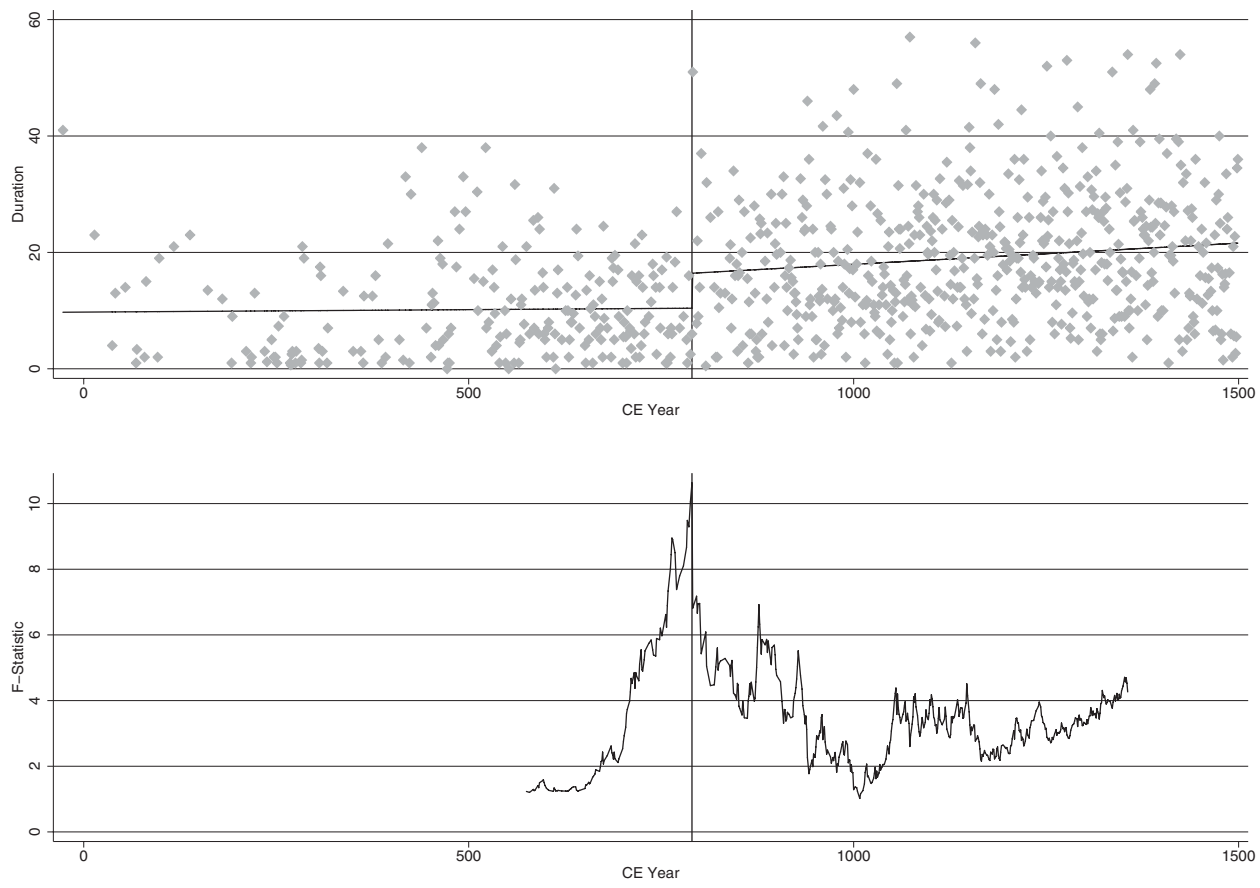
One empirical implication of our argument is that if the introduction of feudal modes of social organization was associated with decreased likelihood of monarchical overthrow, we should see a break in the trend line in ruler duration beginning during the Carolingian period. To empirically test this claim, we limit our sample to non-Muslim Western Europe and investigate the origins of the increase in European leadership tenure. In order to further extend our sample in Western Europe, we supplement the Morby data set used in the second section with data—also drawn from Morby (1989)—from the Imperial Roman period (which begins in 27 BCE).

We calculate the Quandt likelihood ratio (QLR) statistic for the following specification:

$$\text{duration}_t = \beta_0 + \beta_1 D_t(\tau) + \beta_2 t + \beta_3 t D_t(\tau) + \epsilon_t, \quad \textbf{(2)}$$

where duration_t is the average tenure of rulers who assumed power in the year t and $D_t(\tau)$ is a dummy variable equal to one if $t > \tau$. Equation (2) allows for one break in which there is both a mean and a slope change. We use 15% trimming and find that the F statistic testing the null hypothesis that both β_1 and β_3 are zero is maximized in the year 790 CE. In this year, the F statistic is well above the 1% cutoff of 7.78. In other words, the data identify a break in ruler duration in Western Europe in the year 790 CE, which

FIGURE 4. Political Stability and the Trend Break



Note: Vertical line marks the estimated break date in 790 CE. The upper graph provides data on yearly duration and the fitted values. The lower graph details the *F*-statistic testing for a break in both the level and trend of ruler duration in Western Europe.

approximately corresponds to the midpoint of Charlemagne's reign.[27] Figure 4 presents the results in graphical form. The upper graph shows mean ruler duration in each year (denoted with grey dots) and the fitted values of Equation (2) with the break date in the year 790 CE. The lower graph plots the *F* statistic within the central 70% of the sample. The vertical line denotes the estimated break date in 790 CE.[28]

Geography and the Spread of Carolingian Institutions

If increases in constraints on the sovereign originated in the Carolingian Empire, increases in ruler durability should have initially been most notable in these areas. To test this prediction, we limit the sample to Western Europe and estimate a specification of the form

$$\text{duration}_{itc} = \theta_c d_c + \sum_{c=700}^{1400} \alpha_c \cdot \%\text{Carol}_i \cdot d_c + \varepsilon_{itc}, \quad \textbf{(3)}$$

where the variables are as defined in Equation (1) and $\%\text{Carol}_i$ is the percentage of a polity's landmass that belonged to the Carolingian Empire in the year 800 CE. We provide our estimates of $\hat{\alpha}_c$ in column (1) of Table 2. These estimates show that during the first two complete centuries following the reign of Charlemagne, rulers in the successor polities of the Carolingian Empire remained in power for longer than other rulers in Western Europe. Around the year 1100 CE,

[27] We have also used the theoretical framework developed by Bai (1997a, 1997b, 1999) and Bai and Perron (1998, 2003) to test for multiple breaks. While the break point of 790 CE is extremely robust to alternative specifications, other break points identified under alternative specifications are not robust.

[28] Historians have long argued that political institutions in medieval Japan "closely resembled those of feudal Europe" (Duus 1969, 10), emphasizing in both cases the importance of "heavily armed horsemen who became the elite fighting forces of the time" (Lewis 1974, 26). Despite the existence of important differences between the two contexts, there is evidence that the introduction of feudal institutions in Japan was associated with longer ruler duration. Using data on ruler duration from Morby (1989), we find a break in the Japanese trend in 1142 CE, a date quite close to when historians argue Japanese feudalism emerged (see the online appendix for a more detailed discussion).

TABLE 2. Carolingian Roots and Constraints on the Sovereign

		Parliaments			Order in Dynasty	
Year	% Carol. (1)	(2)	(3)	Order	Islam (4)	We-Islam (5)
[700, 800)	−3.27			first	18.34	2.36
	(2.40)				(1.00)	(1.47)
[800, 900)	0.59			second	14.81	5.88
	(1.71)				(1.08)	(1.73)
[900, 1000)	9.30			third	12.96	6.38
	(4.06)				(0.93)	(1.72)
[1000, 1100)	10.06			fourth	12.35	6.59
	(2.07)				(1.17)	(1.85)
[1100, 1200)	8.21	7.12	15.42	fifth	12.05	6.29
	(6.19)	(3.26)	(2.25)		(1.06)	(1.97)
[1200, 1300)	1.38	5.02	9.46	sixth	10.83	8.77
	(5.13)	(3.13)	(3.67)		(1.08)	(1.99)
[1300, 1400)	−0.04	0.23	−2.31	seventh	12.16	7.84
	(2.51)	(2.44)	(2.54)		(1.37)	(2.35)
[1400, 1500)	−5.38	5.32	3.06	eighth	9.88	7.78
	(3.83)	(2.18)	(2.93)		(1.42)	(2.85)
N	1272	788	642		2466	2466
p value		[0.01]	[0.00]			[0.00]
Data set	Nüssli	BM	Nüssli		BM	BM
Sample	WE	WE	WE		WE/Islam [1000,1500)	WE/Islam [1000,1500)

Note: Estimates of Equation (3) presented in column (1), those of Equation (4) presented in columns (2) and (3), and those of Equation (5) in columns (4) and (5) using the duration of a ruler in power as the dependent variable. The *p* value from the test that all the reported coefficients are jointly equal to zero are presented in the row denoted *p* value in columns (2) and (3), whereas the *p* value in column (5) corresponds to the test that the coefficients provided in the rows labeled second through eighth are jointly equal to zero. Columns (1) and (3) use the Nüssli data set and columns (2), (4), and (5) use the Bosworth-Morby data set. Columns (1)–(3) restrict the sample to Western Europe whereas (4) and (5) use both the Western European and the Islamic world samples on the interval [1000,1500). Standard errors are in parentheses and are clustered by dynasty in the Bosworth/Morby data set and by political entity in the Nüssli data set.

however, durations converge across Western Europe. These results are consistent with the hypothesis that the increase in ruler stability originated within the boundaries of the Carolingian Empire spreading to the rest of Western Europe by approximately 1100 CE.

Political Divergence and Constraints on the Sovereign

We have hypothesized that the increase in ruler duration observed in Western Europe is a reflection of increasing constraints on European sovereigns. In this section, we investigate the empirical support for this hypothesis. To do this, we relate ruler duration to the existence of a representative assembly where such assemblies are believed to serve as a potential constraint on the sovereign.[29] We create an indicator variable Parliament_i equal to 1 if either van Zanden et al. (2012) or Stasavage (2010) record the polity as having at least one parliament meeting on the relevant interval.[30] Equipped with this metric, we limit the sample to Western Europe, drop all rulers who assumed power prior to the year 1100 CE and run the following regression:

$$\text{duration}_{itc} = \theta_c d_c + \sum_{c=1100}^{1400} \alpha_c \cdot \text{Parliament}_i \cdot d_c + \varepsilon_{itc}. \quad \textbf{(4)}$$

Estimates associated with Equation (4) are presented in column (2) of Table 2 using the Bosworth/Morby data set and in column (3) of Table 2 using the Nüssli data set. Both data sets provide evidence for a positive relationship between parliament meetings and ruler stability, particularly for the first two centuries after parliaments emerge.

The evolution of ruler duration *within* dynasties provides an additional opportunity to test if the Western European increase in political stability is a reflection of increasing constraints on the sovereign. We begin by creating a variable measuring the order in which a ruler falls in the dynastic chain. This metric is equal to 1 for the founder of the dynasty, 2 for the next ruler, etc. If a ruler is unconstrained, we expect his time in power to be a function of his (sovereign-specific) human capital (Jones and Olken 2005). Moreover, we

[29] See Stasavage (2010) and van Zanden et al. (2012) for more on this point.

[30] Stasavage (2010) and van Zanden et al. (2012) represent the two most comprehensive data sets of medieval parliaments. See the online appendix for details on the construction of this data set.

expect the founder of a dynasty to be highly endowed with such capital. Inasmuch as rule remains within a given family we also expect sovereign human capital to mean-revert over time. If correct, this dynamic should produce a downward relationship between the place the ruler occupies in a given dynastic chain and his time in power. On the other hand, if a ruler is constrained as a result of feudal, or other, institutions this should mitigate the expected downward relationship between a sovereign's place in the dynastic order and his duration in power. The intuition is that when sovereigns are constrained as a result of the institutional framework, sovereign-specific human capital should matter less.

These predictions are consistent with the data linking ruler location in the dynastic chain with his duration. We examine location of a ruler in the dynastic chain with his duration by running the following regression:

$$\text{duration}_{io} = \theta_o d_o + \sum_{o=1}^{O} \alpha_o \cdot \text{WE}_i \cdot d_o + \varepsilon_{io}, \qquad \textbf{(5)}$$

where d_o is a dummy variable equal to 1 if the ruler occupies position o in the dynastic chain and WE_i is a dummy variable equal to 1 if the ruler assumed power in Western Europe. We present the results in Table 2 for the first eight rulers in the dynastic chain. In column (4) of Table 2 we present our estimates of θ_o or the mean duration of rule in the Islamic world by dynastic order on the interval [1000, 1500). The downward trend in average ruler durations following the founder is striking. In column (5) of Table 2 we present $\hat{\alpha_o}$, or the difference of mean duration of rulers in position o in the dynastic chain between Western Europe and the Islamic world on the interval [1000, 1500). These results show that ruler durations in Christian Europe after 1000 CE did not exhibit the Islamic world's sharp downward trend within dynasty. This suggests that although dynasty founders everywhere are endowed with the high levels of human capital associated with long duration of rule, Western European polities enjoyed forms of political institutionalization that made the personal attributes of leaders less relevant.

ALTERNATIVE HYPOTHESES FOR DIVERGENCE IN RULER DURATION

In this section, we investigate the extent to which alternative narratives for the observed divergence in ruler duration are consistent with the empirical evidence.

Culture and Geography

Prominent alternative explanations for the rise of Western Europe invoke the roles of culture, particularly religious culture, and geography. Among cultural explanations, many scholars argue that Christianity fostered stable political institutions when compared to Islam. The simplest version of this theory emphasizes the time-invariant effects of Christian religious practice or belief and, therefore, would predict Christian rulers to enjoy longer duration of rule from the start of our sample.[31] More sophisticated versions of this hypothesis focus on the time-varying effects of Christianity, like the emergence of separation between church and state in the West (Black 2010, Huntington 1996, Stark 2005). These scholars stress that whereas church and state were united in the Islamic world they were divided in Christian Europe from a relatively early date (Black 2010, Lewis 2002).

The origins and spread of Islamic religious practice has long been associated with desert topography.[32] To what extent can durable rule be attributed to the religion's unique geography? While the analysis presented in Section 2 suggests that the broad trends in ruler duration we report are robust to the inclusion of a variety of geographic control variables—including land suitability—in this section we explore trends in ruler duration within two geographic areas, over time. In particular, we focus on the Iberian and Anatolian peninsulas. Both regions were home to Christian and Muslim dynasties for centuries, and both regions were part of a single cultural region prior to the Muslim conquests (Iberia had a Roman and Visigothic heritage while Anatolia had been part of the Greek, Roman, and Byzantine empires).[33]

Columns (1) and (2) of Table 3 present results of regression (1) substituting the dummy variable Christian_i—equal to 1 if the dynasty was Christian and zero otherwise—for WE_i. Our estimates of $\hat{\alpha_c}$—the difference in the mean value of ruler duration between Christian and Islamic dynasties— are presented in column (1) of Table 3 using the Iberian sample and column (2) using the Anatolian sample. For the Anatolian peninsula, we report results only for the centuries in which we have data on ruler tenure for both Christian and Muslim dynasties.

The results for the Iberian Peninsula mimic those found in the broader sample and suggest that, even after holding geography constant, Christian monarchs developed an advantage over their Muslim counterparts over time. The Anatolian case is important because it allows for the disentangling of religious culture from institutions while still controlling for geography and nonreligious heritage. The Byzantine Empire—though part of the Christian world—did not develop Western European-style feudal institutions.[34] Since our

[31] Belief and practice might include the doctrine of "turning the other cheek" or forms of pacifism associated with the Christian faith that might lead to lower rates of ruler overthrow.

[32] See Michalopoulos et al. (2010) for one explanation for why Islam succeeded in desert areas.

[33] The Iberian sample is composed of rulers listed in the subsection "The Iberian Peninsula" in Morby (1989) and "Spain" in Bosworth (1996). The Anatolian sample is composed of rulers listed in the section "The Turks in Anatolia" in Bosworth (1996) and the subsections "The Eastern Roman Empire," "The Empire of Thessalonica," and "The Empire of Trebizond" in the section "The Roman and Byzantine Worlds" in Morby (1989).

[34] Anderson (1974, 281) argues that feudalism did not develop in the Byzantine empire because of the existence of a strong, centralized state apparatus with an influential imperial bureaucracy with high capacity for tax collection. Jacoby (1973, 881) agrees with Anderson's conclusion that Western style feudalism did not emerge independently or spread to Byzantine areas writing that, "vassalage as it was

TABLE 3. Culture, Geography, and Family Practice

	Chr-Islam (1)	Chr-Islam (2)	Chr-Islam (3)	Orthodox-Catholic (4)	WE-EE (5)	Son (6)
[700, 800)	−8.22		1.48	0.14	0.54	−0.18
	(7.81)		(6.76)	(2.67)	(1.60)	(0.14)
[800, 900)	−2.30		0.70	4.67	1.96	0.02
	(8.56)		(4.59)	(3.57)	(3.35)	(0.13)
[900, 1000)	−14.54		6.44	2.34	−4.50	−0.14
	(8.69)		(3.17)	(1.50)	(1.92)	(0.11)
[1000, 1100)	9.59	−3.52	−5.29	−3.84	1.99	0.07
	(2.84)	(3.91)	(3.72)	(2.84)	(2.41)	(0.15)
[1100, 1200)	21.64	−2.90	−2.12	−2.94	5.63	−0.16
	(4.73)	(5.93)	(2.02)	(2.05)	(2.57)	(0.13)
[1200, 1300)	10.65	0.60	−0.85	−2.54	4.38	0.09
	(6.03)	(3.36)	(3.03)	(2.83)	(3.06)	(0.09)
[1300, 1400)	12.26	−6.73	3.03	−7.40	−0.57	0.12
	(4.06)	(3.24)	(1.83)	(2.22)	(2.14)	(0.07)
[1400, 1500)	20.61	2.22	1.61	−9.14	−0.16	0.09
	(4.02)	(4.93)	(3.26)	(3.84)	(2.67)	(0.11)
N	278	240	1005	1035	1815	1278
p value all		[0.35]	[0.53]			[0.24]
p value div	[0.00]			[0.00]	[0.07]	
Data set	BM	BM	Nüssli	Nüssli	Nüssli	BM
Sample	Iberia	Anatolia	Muslim/Orthodox	EE	Catholic	WE/Islam

Note: Estimates comparing ruler durations in Christian and Muslim areas of the Iberian and Anatolian peninsulas are presented in columns (1) and (2). Column (3) provides estimates comparing ruler durations in the Orthodox Christian and Muslim worlds whereas column (4) compares Orthodox and Catholic regions within Eastern Europe. Column (5) examines differences in ruler durations between Eastern Europe and Western Europe within the Catholic world. Column (6) provides results examining the difference in probability that a ruler was succeeded by his son in the Christian West and the Islamic world. The *p* value from the test that all the reported coefficients are jointly equal to zero are presented in the row labeled "*p* value all" whereas the row labeled "*p* value div" provides the *p* value from the test that coefficients from 1000 on are jointly equal to zero in column (1), that the coefficients on the 1300 and 1400 dummies are jointly equal to zero in column (4), and that the coefficients on the 1100 and 1200 dummies are jointly equal to zero in column (5). Columns (1), (2), and (6) use the Bosworth/Morby data set whereas the remainder use the Nüssli data set.

causal story focuses on the development of military-institutional relations in the Islamic world (and not other aspects of Muslim culture), a failure to reject the null hypothesis in the Anatolian subsample works against explanations that argue that other aspects of Islamic culture hurt the durability of rulers.

The empirical patterns documented for the Anatolian sample provide some evidence against the simple version of the "Christianity hypothesis." Our focus up until now on the Islamic world and Western Europe, however, does not allow us to distinguish the effects of the emergence of feudal institutions from the possible effects of simultaneously changing Christian beliefs and institutions. This is because the development of feudal institutions in Western Europe roughly coincided with the emergence of the beliefs and religious institutions—like a growing separation of church and state—thought to have been important for the political and economic development of the Christian West.

To investigate the extent to which changes in Christian beliefs and institutions can account for the documented empirical trends, in this section we incorporate data on ruler duration data from Eastern Europe.[35] Eastern Europeans were predominantly Christian by the 11th century but divided along Latin, or Western, and Orthodox, or Eastern, lines (Shephard 2008).[36] In addition, the extension of feudal institutions to Eastern Europe was uneven.[37] Latin areas seem to have largely adopted feudal institutions by the start of the 14th century (Rowell 2008) whereas Orthodox areas, like Russia, did so to a lesser degree if at all.[38] For

known in the West was alien to Byzantine political structure and to Byzantine thought."

[35] We use the Nüssli data set for the Eastern Europe regressions since we divide Western Europe into Orthodox and Latin areas based on the map provided in Smith (1915, 58). We define Eastern Europe as all non-Islamic polities with centroids east of Venice.

[36] The traditional date for the separation between Latin Christianity (e.g., Catholicism) and Orthodox Christianity is 1054 CE, although significant differences had appeared between the two blocs centuries prior to the formal schism.

[37] Anderson describes the eastward expansion of feudal institutions as having a "profound influence" on areas of Eastern Europe as evidenced, for example, by the use of Germanic and Latin terms of state structures in Slavonic language development (1974, 230–231). On the other hand, the peculiar conditions of the Eastern European—particularly the relative abundance of land relative to population size—meant that feudal institutions developed with local distortions (Anderson 1974).

[38] Most scholars argue that feudal institutions emerged late, if at all, in Russia and were influenced by local conditions, with significant regional variation (Anderson 1974, Szeftel 1956, Vernadsky 1939).

example, Vernadsky (1939, 322–323) writes that it is only in the Lithuanian areas of far-western Russia—which happened to be Catholic, not Orthodox—that Carolingian-style feudalism emerges between the 14th and 16th centuries. In the Latin areas, the lag between the adoption of Christianity and the development of feudal institutions provides an opportunity to investigate the extent to which the introduction of Latin Christianity (in the absence of feudalism) led to an increase in ruler duration. Since Orthodox regions generally did not develop feudal institutions, these regions allow for an additional test of the impact of Christian religious belief and practice.[39]

We begin by restricting the sample to Muslim and Orthodox Christian political entities to investigate the extent to which time-invariant effects of Christian practices (i.e., Christian "core beliefs") are driving the differences in ruler duration.[40] To do this, we estimate a regression of the form

$$\text{duration}_{itc} = \theta_c d_c + \sum_{c=700}^{1400} \alpha_c \cdot \text{Christian}_i \cdot d_c + \varepsilon_{itc}, \tag{6}$$

in which Christian_i is an indicator equal to 1 if the polity is (Orthodox) Christian. Our estimates of $\hat{\alpha_c}$ are presented in column (3) of Table 3. There is no statistically significant distinction in ruler duration between Orthodox Christian and Muslim dynasties. This provides additional evidence against claims that Christian beliefs drive the divergence in ruler duration between the Christian and Islamic worlds.

Could it be that the divergence in ruler duration between the Christian West and the Islamic world is driven by the time-varying effects of Christianity? Since ruler durations in Western Europe had diverged from those in the Islamic world by 1100 CE we would expect leader tenures in Catholic areas of Eastern Europe to both diverge from Orthodox areas of Eastern Europe and to converge to western levels around this date.

We investigate the empirical relevance of this prediction in two waves. First, we restrict the sample to Eastern Europe and estimate a regression of the form

$$\text{duration}_{itc} = \theta_c d_c + \sum_{c=700}^{1400} \alpha_c \cdot \text{Orthodox}_i \cdot d_c + \varepsilon_{itc}, \tag{7}$$

where Orthodox_i is an indicator variable equal to 1 if more than half of the political entity's landmass was Orthodox. The results of Equation (7) are provided in column (4) of Table 3 and show that prior to 1300 CE, there was not a statistical difference in ruler stability between Orthodox and Latin areas in Eastern Europe. After this date—and roughly coinciding with the introduction of feudal institution in Latin Eastern Europe—there was a sharp divergence in ruler stability between Catholic and Orthodox areas. The fact that this divergence occurred roughly 200 years after the introduction of Latin Christianity into Eastern Europe is not consistent with the "sophisticated" Christianity hypothesis.

Second, we limit the sample to the Latin Christian world and run a regression identical to Equation (1). The estimated $\hat{\alpha_c}$ values provide the mean difference of ruler duration between Western and Eastern Europe within the Catholic world. These estimates are presented in column (5) of Table 3 and show that on the interval [1100, 1200) ruler duration in Western Europe was significantly higher than in Catholic Eastern Europe. Furthermore, on the interval [1200, 1300) mean ruler duration in Western Europe was higher than that in Catholic Eastern Europe although the difference is not quite statistically significant at the 10% level.[41] After this date ruler tenure in Eastern Europe converges to levels in Western Europe. This result is consistent with the hypothesis that feudal institutions were the key innovation that led to longer ruler duration in Western Europe since ruler duration in Catholic regions of Eastern Europe do not seem to have converged to those of Western Europe until after the introduction of feudal institutions around 1300 CE.

Finally, an additional alternative hypothesis related to geography involves differential state size in Western Europe and the Islamic world. Stasavage (2010, 625) offers one possible explanation for why small European polities "were able to survive despite threats from much larger neighbors." He finds that geographically compact polities—with lower exogenous monitoring costs—could maintain representative parliamentary institutions to a greater extent; an implication of this finding is that smaller polities, as appear to have been more common in Europe, enjoyed better institutions and were, thus, more likely to enjoy stability. Although state size is likely endogenous, we have included it as a control variable in column (5) of Table 1 to show that differential state sizes do not drive our result. Indeed, the historical evidence presented above suggests that the small size of states may have been driven by the emergence of a landed aristocracy across Western Europe. In addition, while the number of political entities in Western Europe increased following the fall of the Carolingian Empire, the Islamic world saw a comparable increase in political fragmentation with no commensurate increase in ruler durability. Similarly, there is no robust or consistent correlation between the area of a polity and the length of ruler tenure in that polity.[42]

[39] We thank an anonymous referee for suggesting this empirical strategy.

[40] Orthodox entities are defined as non-Islamic polities with more than half of their landmass to the east of the Orthodox boundary provided in Smith (1915, 58).

[41] The 1100 and 1200 CE coefficients are, however, jointly significant at the 10% level.

[42] See the online appendix for these results.

Differential Demography and Family Practice

Could it be that differences in the cultural demographies and family practices of the Islamic world and Western Europe drove patterns of ruler duration? The permissibility of polygyny in Islam creates the possibility for a relatively large number of male heirs who might each enjoy some legitimate claim to succession. If monogamy led to fewer potential rivals, then this implies that the Christian world should have witnessed a constant advantage in political stability over the Islamic world. We have shown that ruler duration in the Christian world did not uniformly diverge from duration in the Islamic world.

In addition, it is not clear if Christian monarchs necessarily had meaningfully fewer potential successors. Ermakoff (1997) argues that until 1100 CE, European kings engaged in family forms that were quite similar to polygyny in the Islamic world. European monarchs would regularly repudiate their wives and marry again while the existing queen was still alive. Such a scenario did, in some cases, create the conditions for political instability and even civil war (Nelson 1995, 401).

Second, the historical record also suggests that monogamy alone was not sufficient for durable rule. In the Byzantine Empire, "absolute monogamy was the norm and raison d'etre of Christian marriage" (Meyendorff 1990, 100). Yet, the Empire suffered from significant political instability. One historian, who analyzed the period from 1025 to 1118 CE, suggests that this instability was a function of centralized rule "built into the political structure" (Angold 2004, 223). The Ottoman conquest of Constantinople provides an additional opportunity to consider whether Christian monogamy might be driving our finding. After the 1453 CE conquest of Constantinople, the Ottoman Empire controlled many formerly Byzantine territories. Ottoman sultans were notorious for fathering children by multiple wives and concubines. After the conquest, however, ruler stability in the Ottoman Empire remains very close to the Byzantium mean of about 12 years.

If European rulers increasingly passed political power to their eldest sons through norms of primogeniture, this might explain why Christian monarchs survived in office longer than their Muslim counterparts. Although primogeniture clearly has its roots in medieval Europe, the practice of passing power and wealth to the first-born son only became prominent in the 13th century, spreading across Europe up through the 17th century (Bertocchi 2006). For example, disputes regarding succession in Scottish and Burgundian monarchies in the 13th and 14th centuries imply that primogeniture was still being established as an institutionalized practice. This is well after the break in the political trend identified in the data on ruler duration and suggests that primogeniture may have emerged endogenously from increases in political stability and constraints on the sovereign since potential rivals to the monarchy could directly constrain the sovereign regardless of his identity.

One might worry that increases in European ruler duration may have been driven by increases in perceptions of the legitimacy of passing rule from father to son. To investigate this claim, we construct a dummy variable son_{itc} using Morby's data set that is equal to 1 if a ruler was the son of the previous ruler. While this does not test the primogeniture conjecture, since we do not have data on the birth order of the successor, it does provide evidence regarding the comparability of the importance of familial ties on succession. Equipped with this metric, we limit the sample to Western Europe and the Islamic world and estimate the regression:

$$\text{son}_{itc} = \theta_c d_c + \sum_{c=700}^{1400} \alpha_c \cdot WE_i \cdot d_c + \varepsilon_{itc}. \quad \textbf{(8)}$$

The estimated α_c is presented in column (6) of Table 3 and do not reject the null hypothesis that rulers were as likely to be sons of the previous ruler in the Islamic world and Western Europe. This result casts doubt on the importance of passing rule from father to son in generating the observed results.

Finally, one might believe that the reason rulers survived in power longer in Western Europe compared to the Islamic world was that life expectancy in Europe was increasing relative to trends in Muslim polities. However, empirical evidence presented in the second section suggests that increasing ruler durability in Europe was being driven by a decreased rate of ruler overthrow rather than some other factor. In addition, there exists no historical qualitative or quantitative evidence to suggest life expectancy would have been shorter in Islamic polities. Muslim physicians during the medieval period were highly sophisticated, discrediting theories of humorism, setting up some of the earliest dedicated hospitals, and making tremendous advances in pharmacology. Borsch (2005) shows that the disease environments of the East and West were quite similar during this period with the bubonic plague, for example, impacting both Muslim and Christian cities. In England, medieval life expectancy for the higher ranks of society (i.e., those who inherited land) was between 46 and 49 years (Jonker 2003). Estimated life expectancy for monks of Christ Church priory in Canterbury during the 15th century was between 46 and 54 years; monks at this time tended to be relatively well fed, with better medical care than the general population (Hatcher 1986). Studies of life expectancy of influential religious scholars in 11th century Muslim Spain show that the most prominent within this occupational group lived between 69 and 75 years, on average (Shatzmiller 1994, 66).

Military Technology and Vulnerability to Outside Invasion

A common narrative for why Islamic polities became less stable over time links back, either directly or indirectly, to the Muslim world's vulnerability to invaders from a less developed periphery. This narrative takes one of two forms in the existing literature. The first is

that Muslim political and economic decline can be explained by the Mongol conquests of the 13th century.[43] The divergence in political stability between Christian Europe and the Islamic world predates the Mongol invasions, however. Nor can the success of the Mongols be considered strictly exogenous as weaker, less stable polities may also be more subject to successful foreign invasion.

A more complex rendering of this narrative suggests that susceptibility to invasion from the periphery made Muslim societies less likely to develop the types of military technologies that proved to be useful for development over the long term. Chase (2003) and Hoffman (2011) argue that places with nomadic (i.e., barren) peripheries did not adopt firearms because this type of weaponry was not effective against nomadic invaders. Places that adopted firearms most effectively, like Western Europe and Japan, enjoyed important political and economic advantages (Chase 2003). While our empirical tests do not consider this hypothesis directly, our inclusion of a variety of geographical control variables, including the latitude of the entity and an area's agricultural suitability, address some predictions associated with this theory. In addition, the oldest depiction of a firearm dates to the 12th century and firearms were not widely adopted until centuries later. The break that we identify in ruler duration, again, precedes the rise of firearms as a critical military technology.

CONCLUSION

Western Europe was considered an economic and political backwater in 1000 CE. By 1000 CE, however, the fortunes of European political leaders were already improving when compared to their peers in the Islamic world in ways that were probably imperceptible to rulers, elites, and citizens of those societies. This study provides the first empirical evidence for a medieval divergence in the political fortunes of Islamic and Western European rulers. We have documented that Western Europe had become more politically stable than the Islamic world by the year 1100 CE.

The available empirical evidence is consistent with a historical literature stressing the feudal origins of these political advances. We find that political stability in Western Europe underwent a "structural break" in the year 790 CE—the midpoint of the reign of Charlemagne. We provide evidence that increases in political stability began within the boundaries of the Carolingian Empire and that greater constraints on the sovereign were correlated with increased ruler duration.

The results are consistent with a literature stressing the long-run importance of economic and political shocks following the collapse of the western Roman Empire in empowering a landed aristocracy. This literature suggests that the landed aristocracy slowly gained power during centuries of economic downturn. Eventually, this aristocracy was able to place unusual constraints on the sovereign. These constraints prepared the way for the emergence of parliaments and medieval Europe's unique institutional framework.

The growth in political stability enjoyed by European kings was not shared by sultans in the Islamic world. While both medieval European and Islamic monarchies cultivated the types of personalistic ties typical of North et al.'s "natural state" (2009), we have argued that the interdependent military, political and economic relationships that developed in Europe under feudalism laid the basis for more impersonal forms of political organization down the line, including institutionalized executive constraint. North et al. (2009) offer some ideas for how to go from a "natural state" —like the type of state that existed in both the medieval Islamic and Christian worlds—to an open access order—or a state characterized by limits on violence and institutions which effectively constrain abuses of power.[44] Muslim rulers, unlike their European counterparts, had the administrative and financial capacity to import slaves from outside of their realms to provide military services; Muslim rulers were not, however, able to effectively discipline this military force through nonmilitary means. European rulers found themselves forced to pay their militaries through land grants, a process which eventually created a powerful, landed, and independent military class. In this sense, Poggi's observation that "the 'feudal state' is one that undermines itself" (1978, 26) is correct; medieval kings, operating from a position of financial weakness and limited state capacity, had no choice but to offer fiefs as payment to elites who provided rulers with military support. Feudalism led this emergent "warrior class" to be "rooted in the land" (Poggi 1978, 32) in a way that was distinct from the nature of military recruitment and remuneration in the Islamic world. The landed nobility in Europe were able to eventually extract both concessions and protections from the state, leading to the rise of medieval parliaments and the types of institutions that are believed to be growth inducing.

According to our account, by the time of the New World discoveries, European rulers were already uniquely constrained compared to their Muslim counterparts. And although trade and colonialism may have enabled both "good" (Acemoglu et al. 2005) and "bad" (Drelichman and Voth 2008) institutional change in European countries, the results suggest that the uniquely European emergence of checks on the sovereign predated the discovery of the Americas.

[43] Another plausible alternative explanation is that Muslim economic decline led to shorter ruler duration. Determining the historical point at which the Islamic world began to fall behind the West and the intensity with which it declined over time is difficult. Historians often cite the Mongol invasion as the end date for the "Golden Age" of Islam. Others argue that the divergence took place later, beginning in the 17th century (Kuran 1997) and accelerating with the Industrial Revolution in Europe. There is no study that we are aware of that suggests Muslim economic decline began prior to the 11th century.

[44] In the North et al. (2009, 170) account, the way that society limits and controls violence is an important "doorstep condition" to the development of growth-producing institutions.

Can the results of this article shed light on trends in the durability of political power today? As European polities began to transition to democracy, particular rulers came to matter less as democratic institutions consolidated. Indeed, as countries moved to functioning democracies, the average duration of the head of state has declined tremendously as a result of institutionalization. This suggests a nonmonotonic relationship between institutionalized power sharing and ruler duration where contemporary states might be considered "hyperinstitutionalized" compared to medieval polities. In other words, once a state crosses some critical threshold of institutionalized power sharing, shorter political tenure reflects a deepening dependence on institutional structures versus personalized power. This explains why turnover of prime ministers in OECD countries takes place so rapidly. This conceptualization may also help to explain why authoritarian regimes that do not share power survive for shorter periods of time than those that do.[45]

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[45] Contemporary authoritarian regimes—like the medieval polities analyzed in this article—continue to suffer from relatively low levels of political institutionalization. Regimes and rulers who institutionalize forms of power sharing, however, experience long tenures. For example, Geddes (2003) has shown that authoritarian regimes that use political parties and elections are more long lived than those that do not where parties and elections might be thought of as forms of institutionalization. Similarly, Debs (2011) has demonstrated that strong leaders who demonstrate more absolutist tendencies are also less long-lived. Finally, Arriola (2009) has shown that African leaders who increase the size of their cabinets decrease the probability of being deposed through a coup.

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