

## **On the Duration of Empires**

Kevin Sylwester  
Department of Economics  
Southern Illinois University - Carbondale

Abstract: Why did some empires endure for centuries whereas others quickly fade? To approach this question, I focus on geography, namely the extent to which an empire abutted a sea. Seas could have allowed for greater integration or stronger defenses. I consider historical empires from antiquity until 1922 and examine whether those empires with larger coastlines relative to their areas endured longer. Using various estimation methodologies and instrumenting for the length of the coastline, I find support that empires that were more connected to seas lasted longer. Further analysis suggests that the potential for seaways to lead to greater integration provides more of the explanation.

Key Words: Empires; Seas; Integration

JEL Classification: N50, N70

---

Department of Economics, MC 4515, Southern Illinois University, Carbondale, IL 62901,  
[ksylwest@siu.edu](mailto:ksylwest@siu.edu), 618-453-5075

## 1. Introduction

The question of “why Rome fell” has enticed historians for centuries. Edward Gibbon and Henri Pirenne are only two of the numerous scholars tackling this issue. Others such as Turchin (2006) have considered empires more generally and have tried to find common explanations for imperial decline. This paper takes a different approach. All empires end, but why did some persist for centuries whereas others fade quickly? Ideally, such explanations would not be idiosyncratic but apply generally.

This paper considers one explanation, namely that greater access to the sea provided advantages promoting longevity. Such access could have led to greater economic and political integration, both internally and with outside polities. A second possibility is that seas could provide a defensive barrier. This paper finds evidence that abutting seas or oceans contributed to an empire’s longevity. Moreover, results remain robust after removing empires from the sample that could have particularly benefitted from the use of seas as a defensive barrier, providing evidence that promoting integration is the dominant reason.

The focus on geography is congruent with Diamond (1997) who sees geography causing Eurasian societies to become richer and more powerful than those in other regions.<sup>1</sup> Turchin et al. (2009) find that empires more often spread along an east-west axis since climate varied less along lines of latitude. Acemoglu et al. (2001) use settler mortality primarily driven by the disease environment in European colonies centuries ago to explain income differences in these former colonies today. Brückner and Ciccone (2011) use rainfall as an exogenous shock in

---

<sup>1</sup> Diamond, however, stressed factors such as the prevalence of indigenous animals that could be domesticated along with whether a continent had an ‘East-West’ or ‘North-South’ axis.

examining to what extent income shocks can drive democratization, at least in poor, agricultural economies.

A disadvantage of my approach is that it is less applicable to modern states and so the empirical analysis does not extend to the present. Inventions such as the telegraph and railroad lowered travel time over land of information, goods, and people, thereby diminishing distinctions between sea and land travel for integration.

However, the presence of seas in no way implies that other factors were not of equal or greater importance in promoting longevity. Interconnectedness by water could have provided the Romans an asset in maintaining their empire, but it does not explain why Rome succeeded over other Mediterranean cities such as Carthage. Nevertheless, finding partial explanations can still advance our understanding of why some empires endured longer than others.

The remainder of the paper proceeds as follows. Section 2 discusses the advantages of seas in greater detail. Section 3 describes the empirical specification. Section 4 presents results. Section 5 revisits why seas are important: integration or defense. Section 6 offers conclusions.

## **2. Background**

Seas could have provided several advantages. This section lumps these advantages into two general categories: integration and defense.

### *A. Integration*

Throughout much of history, water transport was faster and easier than land transport. Greater rapidity of travel could have held numerous advantages for the persistence of empires.

One advantage was greater economic integration, facilitating the trade of goods and factors of production. North Africa was the Roman bread basket as wheat could easily be transported across the Mediterranean. More generally, the complete control of the Mediterranean facilitated trade throughout the empire. Paine (2013) details the importance of water travel and transport throughout history. The great difficulties and high costs of building canals also imply huge benefits of water transport. An early example comes from China with the Grand Canal build around 600 C.E.<sup>2</sup> Many of China's rivers such as the Yangtze and Yellow primarily run east to west. The canal linked these river systems and promoted the flows of goods, especially food from the southern provinces to the capital. Towns subsequently arose along the canal to take advantage of the increased opportunities for trade.

Greater economic integration could have then led to richer empires. Gallup et al. (1998) considered the importance of access to the sea in explaining income per capita differences across countries today.<sup>3</sup> They find that coastal countries are richer than landlocked ones and speculate that seas provide for greater economic integration. If similar effects held in the past, then more sea-based empires would have been richer than those with less access to seas and oceans. Seaways could have created greater integration with trade routes outside the empire such as the Spice Route linking India and Southeast Asia to the Persian Gulf and Red Sea. Alexandria prospered as an entrepôt, connecting maritime trade between the Indian Ocean, the Red Sea, and (except for a short trek over land) the Mediterranean.

But would richer empires or ones that were more economically integrated have been more durable? In Alesina and Spalore (1997) and Bolton et al. (1996), greater economic

---

<sup>2</sup> Later dynasties then extended the canal system.

<sup>3</sup> However, Rodrik et al. (2004) contests the findings from Gallup et al. (1998), arguing that institutions have played a more important role. See these papers for more discussion regarding this debate.

integration lowers border costs and so provides incentives for communities within a polity to secede. Although these models are static and so do not speak to the timing of disintegration, one could presume that polities where more agents want to secede should dissolve more quickly. However, if the source of economic integration is the empire itself then such integration could help empires remain intact. Agents would be less likely to secede if they were cut off from trade (or at least found it costlier to trade). The creation of a border could then raise trading costs and so lower economic integration.

Moreover, an increase of resources in a richer empire could also help to maintain cohesion. With greater economic output, tax revenues would rise. The potential for more revenue might not only provide incentives for leaders to spend resources to maintain the empire but also provide the means for doing so. Collins (1999) and Kennedy (1987) see fiscal deficiencies as key reasons for empires to fall.

Water could have also facilitated other types of integration such as military and political. A second purpose of the Grand Canal was to transport soldiers to and from northern China. The ability to more quickly move military forces to where they are needed would not only have made conquering the empire from outside more difficult but would have lowered the potential for local leaders to attempt to secede since the central government could have more readily countered such attempts.

Political integration could have also been enhanced. Upon completion, Emperor Yang traveled along the Grand Canal to visit southern provinces and so to more thoroughly project his authority. Roman emperors from Augustus to Hadrian were able to travel extensively

throughout the empire and so were able to maintain some presence even in distant provinces.<sup>4</sup>

Water travel could have diminished the authority of governors because they operated under less autonomy, making them less able to secede.

### *B. Defense*

Seas could have prevented invasions. The English Channel has helped to protect the British Isles from invasion for almost a millennium. Many see the Atlantic and Pacific as key in allowing a fledgling U.S. to grow into a world power. Mongol attempts to subjugate Japan and Java ended in disaster, greatly caused by the problems of launching sea-borne invasions.<sup>5</sup> However, this potential for seas to act as a barrier is less likely to apply in my sample where almost all empires faced some overland threats. The Mediterranean did not shield the Roman Empire from barbarian invasions. Thus, water did not completely isolate the empires I am considering although seas could have still served as a partial barrier if troops are less needed along sea coasts.

But a related explanation could be more applicable to some of the empires in my sample. Perhaps seas could have better isolated defeats. A loss of one province or region need not cascade into a more crushing defeat if territory is separated by seas. The loss of Sicily after the First Punic War did not ruin Carthage as an additional seaborne attack upon Carthage itself would have been necessary (as in the Second Punic War). The French were able to push the English out of northwestern France in the Hundred Year's War, but could not invade England.

---

<sup>4</sup> Nevertheless, governing a vast empire from Rome or any one location remained difficult as described in Heather (2005). This argument does not dismiss these challenges but merely presumes that they were greater in empires where water-based travel was less possible.

<sup>5</sup> On the other hand, the ability of seas for protection is mitigated to the extent that it allows invaders easier transport.

Therefore, the potential for seas to provide “firewalls” could have prevented a crushing defeat in one part of the empire from causing a complete collapse throughout all of it.

### **3. Sample and Empirical Model**

Part A provides the criteria for which empires comprise the sample. Part B presents the empirical models. Part C discusses the data and part D addresses weaknesses of the methodology.

#### *A. Sample of Empires*

Table 1 lists the empires in the sample. An on-line appendix contains a brief description of each empire, explaining how I choose its beginning and ending dates.<sup>6</sup> These empires come from Taagepera (1978a, 1978b, 1979, and 1997) with some caveats described below. I consider those from Taagepera so as to consider a sample formed externally to this project.

I focus on empires from Eurasia and Africa that remained in the Old World. I do not consider New World empires or Pacific empires as greater uncertainty arises as to their history and origins. Second, the declines of the Incas and Aztecs both occurred due to European expansion into the New World. Given European military advantages and the diseases borne by Europeans (see Diamond, 1997), their fall was virtually certain. Moreover, they had previously no contact with Eurasia prior to 1492 and so fell outside the “world system”. This isolation also distinguishes the New World from polities in sub-Saharan Africa that had trading links to Eurasia and so are included in the sample.<sup>7</sup> African Muslims made pilgrimages to Mecca. Gold

---

<sup>6</sup> Go to: (an online appendix will be included that will include the descriptions of the empires I provided in a separate file in my submission).

BCE. <sup>7</sup> Nevertheless, the lack of historical records has limited the number of African observations in the sample.

from West Africa traveled throughout Europe and the Middle East. Many of the Pacific empires were territorially small (in land area) and so would not be included in the sample anyway.

I also remove the European overseas empires such as the British and Spanish colonial empires. These colonial empires arose due to superior technology and the spread of disease. Instead, I consider empires that remained in the eastern hemisphere. However, the inclusion of these colonial empires would only strengthen findings given that many of these seaborne empires lasted for centuries. By removing New World empires as well as the European overseas empires, I restrict the sample to a closed system of Asia-Africa-Europe.

I only consider empires that were greater than 200,000 square kilometers at their peak. Governing small territories such as city-states should not have been as difficult, regardless of the mode of transportation. But as shown below, results remain robust when increasing this lower bound to 500,000 km<sup>2</sup> or 1,000,000 km<sup>2</sup>.

The sample begins with the formation of Egypt's Old Kingdom in 2886 BCE and ends with the partition of the Ottoman Empire in 1922. By this time, modern technology was lessening distinctions between land and sea travel. Robustness checks will consider other possible beginning and ending dates.

Finally, I acknowledge that I use the term "empire" loosely and under some definitions, incorrectly. For some, such a term evokes images of autocracy. Others see the subjugation of "other peoples". Doyle (1986) defines "empire" as the political control imposed by one society over the effective sovereignty of *another society*. Maier (2006) also relies on the control of other polities as a key characteristic of empire. The focus, however, of this paper is on large political entities regardless of whether or not they control other distinct peoples. "Large" is important

because distances in a small polity such as a Greek city-state are not expansive enough to deter integration within the polity. However, the concern as to whether this political entity commands a single, unified nation of people or multiple, distinct societies is less relevant for my application.<sup>8</sup> In this sense, my definition of “empire” corresponds to that given in Taagepera (1979): a sovereign entity whose components are not sovereign.

Furthermore, to what extent the governing edifice exhibits democratic or autocratic characteristics is also less relevant. The Roman Empire traditionally began with Augustus but I set the beginning date of the Roman “Empire” 200 years earlier when the Roman Republic became the ruler of a large territory. The challenge of retaining control of a large area is what is relevant for my examination, regardless of the specific political institutions.

### *B. Empirical Specification*

Consider the specification:

$$DUR_i = COAST_i^\tau BEGIN_i^\omega SIZE_i^\theta \exp\left(\pi + \sum_{j=1}^J B_j REG_{ji}\right) \mu_i \quad (1)$$

where  $i$  denotes the empire. After linearizing by taking natural logs:

$$\ln(DUR_i) = \pi + \tau \ln(COAST_i) + \omega \ln(BEGIN_i) + \theta \ln(SIZE_i) + \sum_j \beta_j \ln(REG_{ij}) + v_i \quad (2)$$

where  $v_i = \ln(\mu_i)$ .

---

<sup>8</sup> Of course, such distinctions could certainly influence an empire’s power. Empires containing a more unified, homogenous population could be inherently stronger than a polyglot.

*DUR* denotes the empire's duration in years. *COAST* denotes a measure of an empire's coastline relative to its total area and will be further discussed below. *BEGIN* denotes the natural log of the initial year of an empire's existence. To avoid negative values for years before year zero of the Common Era, I renormalize so that year zero of the Common Era is year 3000.<sup>9</sup> I include *BEGIN* since Taagepera (1978a) finds that later empires tended to be larger. One reason is technological. Inventions like the stirrup enhanced the power of mounted soldiers which could have influenced the durability of empires. Allen (2005) discusses bureaucratic advances that also led to better governance of expanded territories. Using Assyria as an example, he lists increased standardization and monetarization, a *lingua franca*, and greater reliance on vassals as opposed to direct control as key developments in allowing empires to become larger. Such practices became more common over time. Taagepera (1979) also mentions that bureaucratic changes – namely, assigning three functionaries to a province – allowed the Han Dynasty to maintain control for so long. On the other hand, early empires like those of Egypt were often more isolated and so less exposed to attack thereby further contributing to their duration.

*SIZE* denotes the natural logarithm of the empire's land area in squared kilometers.<sup>10</sup> I allow size to potentially influence durability although it is unclear as to what sign the coefficient on *SIZE* will take. Presumably, larger entities are more difficult to govern and could even be overextended, thereby suggesting a negative coefficient. However, more powerful empires should more greatly expand and so *SIZE* could actually be capturing the inherent power of the

---

<sup>9</sup> I renormalize so that all values are positive and one can transform the data into natural logs which again diminishes the influence of outliers. I add 3000 since the earliest empire in the sample began in 2686 B.C.E.

<sup>10</sup> One could presumably also measure size by population. However, population estimates for ancient empires are often not available and often differ more than area estimates. Take Achaemenid Persia as an example. McEvedy and Jones (1978) provide an estimate of 17.5 million. Yarshater (1996) gives a figure of 50 million, almost three times larger.

empire relative to its neighbors'. If the latter effect dominates, then the coefficient on *SIZE* should be positive.

Several regional dummies, denoted by *REG*, will later be included since differences in other geographic features, demographics or culture could influence the durability of empires.<sup>11</sup> These regional dummies are: *CHINA*, Southeast Asia (*SEASIA*), *INDIA*, the Euro-Asian steppe (*STEPPE*), the Iranian Plateau (*IRAN*), the Middle East (*MIDEAST*), *EGYPT*, Sub-Saharan Africa (*SSA*), and Northern Europe (*NEUR*). The control group is the Mediterranean region (*MED*) excluding Egypt. An observation belongs in region *X* if it begins in region *X*. For example, *IRAN* equals one for Achaemenid Persia whereas *EGYPT* and *MIDEAST* equal zero even though Persia conquered the latter two regions. I focus on initial location since this is generally from where governance stems.

An advantage of using a log-log specification in (2) is that coefficients can be interpreted as elasticities, thereby facilitating inferences. Another advantage is to lessen the weight given to outliers. A drawback, however, is that one is finding the expected conditional mean of  $\ln(DUR)$  and not the expected conditional mean of *DUR*, the latter being more relevant. Silva and Tenreiro (2006) also explain that log-linearizing an equation such as:  $DUR = X^\beta \mu$  so as to become  $\ln(DUR) = \beta \ln(X) + v$  where  $v = \ln(\mu)$  could lead to inconsistent estimates. The reason is that if heteroskedasticity arises so that the variance of  $\mu$  depends upon *X* then transforming the error term into its natural log will cause a nonzero correlation between  $v$  and  $\ln(X)$ . In my application, such a problem could arise if the variance of the residual differs across regions, time, or between small and large empires.

---

<sup>11</sup> Of course, I acknowledge that important geographic differences could also arise within empires which the regional dummies listed above are too coarse to capture. Moreover, empires at different locations within these regions could still face different geographies.

To address these concerns, they propose a Poisson Pseudo Maximum Likelihood [PPML] estimation methodology where the dependent variable is measured in levels. In a poisson distribution, the mean equals the variance. However, Silva and Tenreyro (2006) show that this requirement of equidispersion is not necessary to apply the PPML estimator. Instead, the conditional mean needs only be proportional to the conditional variance. Even if it is not, the PPML estimator is still consistent. Given the familiarity of the linear model in (2) but also given the above discussion, I estimate both (1) by PPML and (2) by OLS.

Finally, to further consider results under an alternative specification, I employ a survival analysis Cox regression using a Weibull distribution. The time to the event is given by *DUR* and the covariates are the same as in the other two models. The hazard ratio for *COAST* would then indicate whether this feature is associated with the survival time of empires. Since all empires within the sample fell, no censoring exists in this application.<sup>12</sup>

### *C. Data*

Data for *BEGIN*, *DUR*, and *SIZE* comes from numerous sources including Taagepera (1978a, 1978b, 1979, and 1997), Turchin et al. (2006), and the *Encyclopedia Britannica*. Taagepera calculated growth-decline curves where he estimated the sizes of large political units at various points in time, calculating such areas on a map from historical accounts of imperial expansion and decline. Descriptive statistics are provided in Tables 1 and 2.

The data for *SIZE* comes from Taagepera's work and is the average size of the empire throughout its duration. Use of average size helps to limit aberrations when an empire could

---

<sup>12</sup> As stated, I employ a parametric regression with a Weibull distribution. Results are robust to employing a nonparametric approach. When doing so, I also tested the null hypothesis of a constant hazard rate for *COAST* as well as for the other right hand side variables as part of a global test. The null was never rejected at the 10% significance level and p-values were often much higher, above 0.5 in many cases. (Results available on request).

have been “unusually” large for a time but this heyday was not indicative of its size through most of its history. A disadvantage of using the average, however, is a disparity in the frequency of measurements across empires. In some cases, Taagepera provides several measurements at various intervals but the length of these intervals differs across empires.

Estimates for *BEGIN* and *DUR* also come from Taagepera’s work along with other sources such as the *Encyclopedia Britannica*. The key in my dating is estimating when an empire first governed a sufficiently large territory so that governing obstacles stemming from this vastness arose. Similar concerns arise when estimating the fall of this empire. Some examples hope to illuminate such problems. The traditional founding of Rome is 753 B.C.E. But even if one believes Rome’s mythology, Rome remained a small polity centuries. Instead, I consider 272 B.C.E. to be the beginning of Rome as a large territorial power. This is when Rome gained control of southern Italy following the Pyrrhic War. An opposite case concerns the Byzantine Empire. The Ottomans conquered Constantinople in 1453, the year many mark as the end of the Byzantine Empire. However, Crusaders sacked Constantinople in 1204. The Byzantines regained power in 1261 but their subsequent territory barely exceeded the Theodosian Walls surrounding the city. Consequently, I choose 1204 as its ending date.

A special case involves China. Often, the overthrow of one dynasty occurred through something akin to a “palace” coup. A powerful aristocrat within the imperial court would overthrow the emperor and declare a new dynasty. In some cases, this aristocrat was even the power behind the throne in the former dynasty. To make my sample more comparable across cases, I combine these different dynasties into one empire. After all, Roman emperors were often overthrown by internal rivals but historians do not see these coups as creating distinct

empires. Only when a dynasty was toppled by an external power or that it fractured into several parts do I consider a new central authority – and, hence, a new observation – to have arisen.

I have also tried to choose dates as critically as possible, using shorter durations for observations with more access to the sea as the above examples exemplify (especially when trimming the Byzantine Empire by 249 years).

I construct *COAST* to equal the coastal distance of the empire divided by its area, both measured at the empire's greatest extent.<sup>13</sup> For the Tibetan Empire, *COAST* equals zero since this empire had no coastline. For Rome, the ratio is large given that Roman territory surrounded the Mediterranean and ran along the Atlantic Ocean. Other empires with large values for *COAST* are those that narrowly ran along a sea or ocean. The lack of width produces a small area whereas a long coastline gives a large numerator. As the empire spreads further inland and increases its area, the potential for a sea to integrate or protect the empire diminishes. Obviously, not all parts of a coastline are conducive to acting as a port or facilitating traffic. Nevertheless, I presume that such features are positively correlated with the length of the coastline.<sup>14</sup>

---

<sup>13</sup> I measure *COAST* at an empire's greatest extent for several reasons. One, maps and information of an empire's geography are more available at an empire's height. This is especially true of the empires not drawn from the Taagepera samples since they are less well known. Two, the results below show little difference when *SIZE* is measured at peak size or as an average over time as the correlation between the two is 0.97. Finally, problems of integration or defense are likely to be most prominent when an empire is spread out over a large area. Therefore, *COAST* comes from the point when an empire's geography could be most important in determining its ability to persist.

<sup>14</sup> Rivers could also potentially lead to greater integration or to a better defense and some empires such as early Egyptian ones and Mesopotamian ones spanned rivers or river systems. Nevertheless, in separate regressions, I did not find any evidence that empires primarily stretched along such a river system endured longer. The lack of stronger findings could be a sign that rivers were less important for integration than seaways. Or, the lack of stronger findings could simply be due to even less precision in trying to measure to what extent an empire "spanned" a river.

#### *D. Weaknesses*

Measurement error is nontrivial, especially given that taking the ratio of coastline to area is not driven by any formal theory. Nevertheless, to the extent that this measurement error is noise and so uncorrelated with right hand side variables then coefficients are biased toward zero, making finding significant associations more difficult.

Second, many aspects of empires that could have contributed to longevity are not included in the model. Differing institutional hierarchies and political mechanisms could have mattered for how successful a central government was in projecting authority across space. The confederation of formerly distinct groups versus a highly bureaucratic polity such as the Roman Empire are but two examples. Moreover, infrastructure such as the existence of a “Royal Road” could have facilitated the governance of remote areas. The degree of ethnic diversity is another characteristic that could have influenced longevity although whether such diversity hinders governance due to lesser commonality across subjects or promotes it due to a “divide and conquer” approach remains uncertain. I acknowledge that all of these factors could have mattered for longevity. However, I find it less clear that they are associated with *COAST* and so biasing its coefficient. In addition, since the coefficient on *COAST* is positive (as shown below) such factors must be positively associated with both longevity and access to the sea for the below results to overstate the importance of seas.<sup>15</sup>

Third, biases could arise in how *COAST* is determined. More powerful empires – and so presumably more durable ones – would more likely stretch until they reached a coast thereby creating a long coastline. In this case, a long coastline does not help to propagate an empire but is a sign of some other underlying strength. The inclusion of *SIZE*, however, can mitigate this

---

<sup>15</sup>A third condition is that any such factors cannot themselves be determined by access to the sea since then they would merely become a channel as to how seas could have benefitted imperial longevity.

concern. A related concern is that perhaps only powerful empires could project power across water to some opposite shore thereby increasing a coastline. If so, then the coefficient on *COAST* would be biased upwards.

One way to address these concerns is to instrument for *COAST*. I use the shortest distance from the initial locus of power (usually a capital city) of an empire to the sea. The presumption is that the initial proximity to the sea should be correlated with the extent of the coastline an empire could potentially obtain but that this proximity at an empire's *inception* should not be correlated with unobservable factors such as an empire's institutions or the abilities of its leaders that determine an empire's power. To consider potential nonlinearities and threshold effects, I not only use the shortest distance in kilometers from the initial locus of power to the sea but its natural log and a dummy that equals one if this initial locus of power is on the coast. The use of multiple measures also allows for overidentification tests.<sup>16</sup>

An alternative to instrumenting is to remove observations where the peak of the empire occurred late in the empire's lifespan as these empires are the ones where this potential for reverse causation from duration to coastline to be strongest. As a robustness check, I will remove the following set of empires where

- 1)  $COAST > 0$  (since empires where  $COAST = 0$  did not spread to a sea) AND
- 2)  $DURATION > 50$  (since the concern is that long lived empires have more time to extend to the coast) AND
- 3) when the empire's peak is in the latter half of the empire's lifespan.

---

<sup>16</sup> Since some loci are on the coast, I use the natural log of one plus the distance so as not to drop these observations.

In other words, the concern is that longer-lived empires had greater time to extend to coasts. To mitigate this concern, I will remove empires that had a coastline AND were not short-lived AND that peaked later rather than sooner. Table 1 identifies which empires these are. Robust results would indicate that reverse causation is of less concern.

#### 4. Results

Table 3 presents results from five of the estimation methodologies discussed above: the log-linear regression model in (2), the PPML estimation from (1), their respective instrumental variable estimations, and the survival analysis. Results are consistent across all models. First considering the controls, earlier empires were longer lasting as indicated by the negative coefficient on *BEGIN*. This result could have arisen because earlier empires were more isolated geographically and so faced fewer challengers. The coefficient on *SIZE* is positive, albeit not significant. The lack of stronger results could be due to offsetting effects. Larger empires were presumably more difficult to govern thereby leading to more instances of fragmentation and so shorter durations. On the other hand, an empire's size could be a proxy for the underlying power of the empire thereby contributing to longer durations.

Across all specifications, results for *COAST* indicate that empires that had greater coastlines relative to their size persisted longer. The coefficient from column one suggests that a one standard deviation in  $\ln(COAST)$  is associated with an increase of  $\ln(DUR)$  of about a third of a standard deviation. This seems plausible in that the association is not trivial but other factors were presumably of importance as well. The IV estimate in column 4 suggests an impact nearly twice as great but one that is still less than a standard deviation. The discussion of section 3 suggested that the OLS coefficient estimate for *COAST* could be biased upwards as longer

lasting empires would have had more time to reach coasts. However, the estimate from column four is greater in magnitude (suggesting that the OLS estimate is biased downwards) than its counterpart in column one. One explanation for the smaller OLS estimate is that nonsystematic measurement error biases the coefficient to zero, and this measurement error bias dominates any bias from reverse causation (a longer duration leads to more coastline). Results using PPML are similar. Moreover, a hazard ratio of less than one in the survival analysis presented in column 3 also implies that empires with more access to the sea also lived longer.

As for various diagnostic checks across the specifications, the  $R^2$  of the OLS model is 0.18, relatively high considering the simplicity of the empirical model and the certainly large amount of measurement error in these variables. The diagnostic checks for the IV model suggest that the model performs reasonably well. The null that the model is underidentified is rejected at the 1% significance level whereas the p-value from the Hansen J-statistic is 0.31 and so no strong evidence of overidentification arises either. The Kleibergen-Paap Wald F-Statistic is 15.6 and so does not provide strong evidence that instruments are weak. The p-value of the test of the endogeneity of  $\ln(COAST)$  is 0.20 and so the null of exogeneity is not rejected. Of course, failure to reject the null does not indicate that the null is true.

Table 4 presents a battery of robustness checks. All specifications include the same control variables as given in Table 3 but only the coefficient estimates (and hazard rates) for *COAST* are presented. Row 1 includes nine regional dummies as outlined above (where the Mediterranean region is the control). The coefficient on *COAST* is little affected. Although not presented, the coefficients on the regional dummies are not significant.

Rows 2 through 11 remove the regional dummies (and so return to the specification in Table 3) but also remove one of the ten regions (including the Mediterranean region). These

removals are important for two reasons. First, the introduction motivated the paper by citing Rome's longevity. Other Mediterranean empires such as the Ottomans also endured for centuries. However, as shown in row 11 the importance of coastlines applies outside the Mediterranean region as well. Second, since every empire is removed at some point in these ten robustness checks, no one empire solely drives the findings of the paper. Therefore, results remain robust – both in terms of statistical significance and in terms of the magnitude of the coefficient estimate – to controlling for geographic region as well as to removing each region.

Rows 12 and 13 only include empires that lasted at least 50 and 100 years, respectively. Several reasons arise to set a minimum duration above zero. For one, longer lasting empires are, arguably, more important historically. Second, it becomes less clear to what extent short-lived empires could govern effectively as they fell shortly after their expansion phase ended such as the Macedonian Empire. Setting a positive lower bound for duration removes cases where an empire grew due to the ability of some conqueror but then quickly disintegrated. Finally, results in Table 3 could be driven by the benefits of waterways to achieve some initial success but then have a reduced marginal effect on subsequent duration. Therefore, restricting the sample to those empires that achieved some minimal duration can better isolate longer-run associations from any initial benefits. Of course, any specific minimum such as 50 years is arbitrary; but considering empires that lasted for at least a half century considers a sample in which all observations showed at least a modicum of promise for continued survival. Using a minimum of one century considers empires with substantial potential for survival. Not surprisingly, the coefficients fall in magnitude since these robustness checks reduce the variation of the dependent variable. Nevertheless, the coefficient on *COAST* remains significant.

Rows 14 and 15 limit the sample to those empires of at least one-half million and one million square kilometers whereas the original specification took empires of at least one-fourth million kilometers. Coefficient estimates are little affected.

Rows 16 and 17 limit the sample to those empires that began after 600 BCE or ended before 1500 CE, respectively. Less is known about empires before 600 BCE and so removing them creates a sample where one can be more confident about dates and the territorial extent of the empire. Moreover, the oldest empires could have come into less conflict due to the fact that empires did not border as often thereby creating less conflict. Considering a sample that ends before 1500 CE restricts the sample to when Eurasia was a “world-system”. Even though the colonial empires are not included in the sample, the colonization of the New World could have altered power arrangements across the old world. The coefficient on *COAST* falls somewhat in magnitude when latter empires are removed but remains significant.

Finally, rows 18-21 continue to remove certain types of empires to better ensure results are not driven by special cases. The regression represented in row 18 removes those empires where *COAST* equals zero and so findings do not entirely arise due to changing *COAST* from a zero to a positive value. In fact, associations grow stronger, presumably because some landlocked empires such as Tibet were somewhat isolated with defensible borders. Row 19 removes empires according to the discussion regarding endogeneity in section 3. Namely, empires are removed where peaks occurred in the second half of a longstanding empire. These are the cases where causality going from duration to coastline is more likely. Nevertheless, results remain robust. Row 20 removes those empires that were created from the confederation of several tribes, the Hunnic empire being a noted example. A leader centralized power among formerly autonomous polities (often tribes) and immediately controlled a vast region. Row 21

removes empires that again immediately controlled a large area but this time because it seceded from another empire. Examples include the Golden Horde, the Chagatai, and the Il-Khanate which all seceded from the Mongol Empire. The coefficients in Row 21 remain significant but fall in magnitude, most likely due to the removal of the Byzantine Empire which separated from Rome and endured for over 800 more years.<sup>17</sup>

In all of these robustness checks, the findings for these changes to the sample do not obviate the results from Table 3. The association between *COAST* and *DUR* remains robust. Moreover, the coefficients on *COAST* generally remain stable.

## 5. Integration or Defense?

This section examines whether integration or defense better explains the above results.

At least for extreme cases, integration appears the stronger explanation. Four of the five longest lasting empires were all situated around the Mediterranean: Roman, Byzantine, Fatamid-Mamluk, and Ottoman. See Paine (2013) and Abulafia (2011) for detailed discussion on how the Mediterranean helped integrate southern Europe, North Africa, and the Middle East. However, all of these empires still faced substantial overland threats. The Mediterranean did not serve as a barrier for Rome or Byzantium to deter invasions from the steppes or Persia.

It is also interesting to note that the longest lasting empire for which *COAST* equals zero was the Tibetan empire, located on the defensible Tibetan Plateau. Some empires also abutted substantial land barriers such as the Sahara Desert or the Himalayas. Such features certainly aided in defense of the empire since fewer soldiers would have been needed along these borders.

---

<sup>17</sup>A separate robustness check (not presented but available upon request) treats Rome-Byzantine as a single observation since the Byzantines considered themselves as Roman and no interruption occurred from one to the other. Results are robust to this change in sample.

Nevertheless, empires within these two regions were not longer-lived. The empire facing the smallest overland threat was likely to have been Carthage. During the time Carthage existed, few other powers existed in North Africa with the possible exception of the Numidians although they posed little threat to Carthage until unified and allied to the Romans in the Second Punic War.<sup>18</sup>

To (albeit, indirectly) consider to what extent defensive advantages are driving the findings, row 22 removes empires that could have relied on seas to a larger extent to provide defensive advantages for one of two reasons. First, seas could have allowed empires to concentrate defenses in fewer directions, especially empires primarily located on a peninsula.<sup>19</sup> A second possible benefit is for seas to provide firewalls in that defeat in one province could be contained. However, my sample makes this possibility less likely. Very few empires in the sample had large, noncontiguous regions separated by water although exceptions arise such as Carthage and Byzantium.<sup>20</sup> Although the Almoravids and the Almohads held territory in North Africa and Iberia, each empire's loss of Iberia preceded its total downfall by only a few years. Moreover, the Strait of Gibraltar is only a few miles in width, providing less benefit as a firewall.

To better determine if empires abutting seas were longer-lived because of defensive advantages, I remove empires that faced less potential for overland threats (Carthage, Almoravids, Almohads, Visigothic Kingdom, Cordova, Khmer) as well as Byzantium in which

---

<sup>18</sup> However, Carthage's possessions across the Mediterranean, especially in Spain, faced overland threats.

<sup>19</sup> However, counterexamples could also arise as seas could facilitate invasions because invaders (like the Vikings) could more easily travel upon water to reach their target. Second, spending resources on a navy allocated resources away from confronting overland challengers. Therefore, it is not clear to what extent the presence of a coast on one side provided a greater potential to deter or defeat overland threats from another direction.

<sup>20</sup> I do not consider the possession of minor islands to be substantial enough for this concept of a "firewall" to apply. Moreover, the strait separating Sicily from Italy is only five to six miles, too small in my opinion to consider empires controlling both to have a firewall.

case seas could have provided the type of firewall discussed above. The coefficients are little changed from the baseline case. Admittedly, this examination is informal and indirect. Nevertheless, if defensive advantages were primarily driving results, these results should weaken when empires potentially receiving the greatest defensive benefits are removed.

## **6. Conclusion**

Strong evidence arises that empires near seas were longer-lived. As argued above, I interpret the findings to lend more support to integration as the explanation. Nevertheless, even if seas also provided defensive advantages the empirical findings still speak to the importance of geography in influencing historical outcomes. Again, this does not mean that geography's role is definitive. To the extent that geographic characteristics within a region are similar, then geography does not explain why one polity dominates the others. Moreover, exceptional individuals such as Alexander the Great or Genghis Khan overcome constraints that bound others. Nevertheless, the extent to which successors could maintain their territories was likely influenced by geography. Both of these land-based empires quickly dissolved upon the conquerors' deaths. Avenues for future work include finding other proxies for integration that can allow for separate analyses as to what extent they contributed to the survival and durability of history's most important empires.

## **References**

Abulafia, David. (2013). *The Great Sea: A Human History of the Mediterranean*. Oxford: Oxford University Press.

Acemoglu, Daron; Johnson, Simon and Robinson, James (2001). The colonial origins of comparative development: an empirical investigation,” *American Economic Review* 91, 1369-1401.

Alesina, Alberto and Spolaore, Enrico (1997) On the number and size of nations. *Quarterly Journal of Economics* 112, 1027-1056.

Allen, Mitchell (2005) Power is in the details: administrative technology and the growth of ancient near eastern cores. In (eds.) Chase-Dunn, Christopher and Anderson, E.N. *The Historical Evolution of World Systems*. New York: Palgrave Macmillan.

Bolton, Patrick; Roland, Gerard and Spolaore, Enrico (1996) Economic theories of the break-up and integration of nations. *European Economic Review* 40, 697-705.

Brückner, Markus and Ciccone, Antonio Ciccone (2011). Rain and the democratic window of opportunity. *Econometrica* 79, 923-947.

Buchanan, James M. and Faith, Roger L. (1987) Secession and the limits of taxation: toward a theory of internal exit. *American Economic Review* 77, 1023-1031.

Collins, Randall (1999) *Macrohistory: Essays in Sociology in the Long Run*. Stanford: Stanford University Press.

Diamond, Jared (1997) *Guns, Germs, and Steel: The Fates of Human Societies*. New York: W.W. Norton & Company.

Diamond, Jared (2006) *Collapse: How Societies Choose to Fail or Succeed*. New York: Penguin.

Doyle, Michael W. (1986) *Empires*. Ithaca, NY: Cornell University Press.

Friedman, David. (1977) A theory of the size and shape of nations. *Journal of Political Economy* 85, 59-77.

Gallup, John L., Mellinger, Andrew D. and Sachs, Jeffrey, D. (1998). Geography and economic development. NBER Working Paper 6849, Cambridge, MA.

Heater, Peter (2005) *The Fall of the Roman Empire: A New History of Rome and the Barbarians*. Oxford: Oxford University Press.

Kennedy, Paul (1987) *The Rise and Fall of the Great Powers: Economic Change and Military Conflict from 1500 to 2000*. New York: Random House.

Maier, Charles S. (2006) *Among Empires: American Ascendancy and Its Predecessors*. Cambridge, MA: Harvard University Press.

McEvedy, Colin and Jones, Richard (1978). *Atlas of World Population History*. New York: Penguin Books.

Paine, Lincoln (2013) *The Sea and Civilization: A Maritime History of the World*. New York: Knopf.

Rodrik, Dani, Subramanian, Arvind and Trebbi, Francesco (2004). Institutions rule: the primacy of institutions over geography and integration in economic development. *Journal of Economic Growth* 9, 131-165.

Taagepera, Rein (1978a) Size and duration of empires: systematics of size. *Social Science Research* 7, 108-127.

Taagepera, Rein (1978b) Size and duration of empires: growth-decline curves, 3000 to 600 B.C. *Social Science Research* 7, 180-196.

Taagepera, Rein (1979) Size and duration of empires: growth-decline curves, 600 B.C to 600 A.D. *Social Science History* 3, 115-138.

Taagepera, Rein (1997) Expansion and contraction patterns of large polities: context for Russia. *International Studies Quarterly* 41, 475-504.

Turchin, Peter (2006) *War and Peace and War: The Rise and Fall of Empires*. New York: Penguin Press.

Turchin, Peter (2009) A theory for formation of large empires. *Journal of Global History* 4, 191-217.

Turchin, Peter; Adams, Jonathan M. and Hall, Thomas D. (2006) East-west orientation of historical empires and modern states. *Journal of World Systems-Research* 12, 219-229.

Yarshater, Ehsan (1996) *Encyclopaedia Iranica*. Routledge: London.

Table 1: Sample of Empires

Name	<i>BEGIN</i>	<i>END</i>	<i>DUR</i>	<i>size</i>	<i>avsize</i>	<i>COAST</i>	<i>ENDOG</i>
Abbasids	750	934	184	11.1	6.8	941.89	0
Achaemenid	-550	-330	220	5.5	4.15	2481.82	0
Akkadian	-2270	-2090	180	0.8	0.57	300	0
Almohad Caliphate	1147	1248	101	2.3	1.9	1173.91	0
Almoravid	1050	1147	97	2.3	2.3	1226.09	0
Avars	580	626	46	0.8	0.43	0	0
Babylon 1st Dynasty	-1728	-1531	197	0.25	0.17	1308	0
Bactria	-250	-125	125	2.5	1.42	204	0
Byzantine	395	1204	809	2.8	1.45	5897.5	0
Carolingian	687	843	156	1.2	0.63	3078.33	1
Carthage	-550	-202	348	0.3	0.2	11896.67	0
Chagatai	1260	1346	86	3.5	3	0	0
Chu	-770	-223	547	0.8	0.48	1000	1
Cordoba	756	1031	275	0.6	0.4	5166.67	1
Delhi Sultanate (First – Third)	1206	1398	192	3.2	2.1	1046.88	1
Earlier Zhao	304	329	25	2	2	0	0
Eastern Wei - Northern Qi	534	577	43	1.5	0.75	1370	0
Egypt (Middle Kingdom)	-2040	-1650	390	0.5	0.35	2086	0
Egypt (26th Dynasty)	-655	-525	130	0.65	0.58	3097	1
Egypt (New Kingdom)	-1550	-1077	473	1	0.74	3237	0
Egypt (Old Kingdom)	-2686	-2181	505	0.4	0.3	675	0
Fatamid-Ayyubid-Mamluk	909	1517	608	4.1	1.68	1997.56	0
Ghaznavid	977	1151	174	3.4	1.84	163.53	0
Gokturk	552	630	78	6	5.5	232	0
Golden Horde	1310	1438	128	6	3.48	500	0
Gupta	320	500	180	1.7	0.8	1152.94	1
Gurjara Pratihara	836	910	74	1	0.53	1535	0
Han	-206	220	426	6	4.5	990.83	0
Harsha	606	647	41	1	0.77	980	0
Hittite	-1380	-1190	190	0.45	0.34	2823.53	0
Hunnic	420	469	49	4	4	437	0
Ilkhanate	1256	1335	79	3.75	3.58	346.67	0
Jin-Later Tang	907	947	40	1.3	0.85	903.85	0
Jinn	1115	1234	119	2.3	1.8	1721.74	0
Kara Khitan	1134	1218	84	1	1	0	0
Khazar	670	965	295	1	0.9	1953	1
Khmer	802	1350	548	1	0.71	2250	1
Khwarazmian	1156	1220	64	3.6	2.21	250	0
Kiev	882	1132	250	2.1	1.23	88.0952	0
Kushan	50	230	180	2.5	1.57	184	0
Later Zhao – Former Qin	319	383	64	2.6	2.17	923.08	1
Liao (Khitan)	907	1125	218	2.6	1.95	1032.31	0
Lydian	-680	-546	134	0.5	0.32	3900	1
Macedonian	-356	-320	45	5.2	3.05	1772.12	0
Mali	1235	1545	310	1.1	0.53	472.73	0
Median	-625	-550	75	2.8	1.37	475.71	0
Ming	1361	1644	283	6.5	3.88	1053.85	0
Mongol – Yuan	1206	1368	162	24	13.96	431.5	1

Mughal	1556	1737	181	4	2.1	1143.5	1
Nanda-Maurya-Shunga	-345	-141	204	3.4	1.97	1161.18	0
Neo-Assyrian	-911	-608	303	1.4	0.64	1598	1
Neo-Babylonian	-625	-539	86	0.5	0.38	1598	1
Ottoman	1382	1922	540	5.2	3.04	3737.69	1
Parthia	-167	224	391	2.8	1.84	1700	0
Polish-Lithuania	1362	1717	355	1.05	0.97	219.05	0
Ptolomeic	-305	-30	275	1	0.9	3635	0
Qin	-316	-206	110	2.8	1.23	1250	1
Qing	1644	1895	251	14.7	11.08	542.86	0
Roman	-272	410	682	5	2.5	3085	0
Rouran Khaganate	402	552	153	2.8	1.27	0	0
Samanid	875	999	124	2.85	1.97	584.21	0
Sassanid	224	651	427	3.5	2.87	1664	1
Seleucid	-320	-129	191	3.9	2.15	1208.97	0
Seljuk	1037	1141	104	3.9	2.33	1501.79	1
Shu	221	263	42	1	0.5	0	0
Song (Later Han through Song)	947	1279	332	3.1	1.38	787.74	0
Songhai	1464	1591	127	0.8	0.8	137.5	0
Tang (N. Wei through Tang)	395	875	480	3	1.64	970	0
Timurid	1370	1507	137	4.4	3.55	1221.82	0
Tufan (Tibet)	618	842	224	4.6	3.37	0	0
Umayyad Caliphate	632	750	118	11.1	6.03	1749.5	1
Uyghur	744	844	100	3.1	1.55	0	0
Visigoths	456	711	255	0.6	0.48	4060	0
Wei through Chen	220	589	369	3.1	1.53	1116.13	0
Western Turks	584	657	73	3.5	2.43	697.14	0
Western Zhou	-1046	-771	275	0.55	0.32	2909.09	0
Wu	220	280	60	1.5	0.75	1866.67	0
Xiongnu	-209	48	257	9	3.96	0	0

Values for *BEGIN* and *END* denote years where negative values denote BCE. For explanations as to why these years are chosen, see the online appendix at: (will be specified later). *ENDOG* = 1 denotes those empires whose duration would have greater potential to have led to access to the sea.

Table 2: Summary Statistics

Panel A: Descriptive Statistics				
	Levels		Natural Logs (when applicable)	
	Mean	Std. Dev.	Mean	Std. Dev.
<i>DUR</i> (in years)	220.65	167.18	5.11	0.79
<i>SIZE</i> (square km), Average	2.06	2.22	0.31	0.92
<i>SIZE</i> (square km), Peak	3.20	3.53	0.74	0.94
<i>BEGIN</i> (year)	297.06	936.90	8.03	0.43
<i>END</i> (year)	517.58	915.77		
<i>COAST</i> (km/km <sup>2</sup> )	1473.11	17.25.40	6.20	2.43

  

Panel B: Correlations			
	<i>SIZE</i>	<i>BEGIN</i>	<i>COAST</i>
<i>DUR</i>	-0.04	-0.21	0.36
<i>SIZE</i> , Average		0.35	-0.22
<i>BEGIN</i>			-0.23

Note: Negative values for *BEGIN* and *END* denote B.C.E. years and so the mean of *BEGIN*, for example, denotes the year 297 C.E. In order to take natural logs, 3000 was added to the first year of the empire to ensure all values are positive.

Table 3: Baseline Results

	(1)	(2)	(3)	(4)	(5)
	OLS	PPML	Hazard Ratio	IV - LIML	IV - PPML
Dep. Variable	Ln( <i>DUR</i> )	<i>DUR</i>	<i>DUR</i>	Ln( <i>DUR</i> )	<i>DUR</i>
<i>COAST</i>	0.113*** (0.035)	0.142*** (0.045)	0.824*** (0.038)	0.207*** (0.075)	0.246*** (0.066)
<i>BEGIN</i>	-0.429** (0.167)	-0.336*** (0.126)	1.623** (0.331)	-0.369** (0.173)	-0.295** (0.160)
<i>SIZE</i>	0.084 (0.095)	0.076 (0.080)	0.863 (0.123)	0.107 (0.102)	0.111 (0.100)
constant	7.838*** (1.378)	7.140*** (1.053)		6.758*** (1.529)	6.145*** (1.412)
# of obs	78	78	78	78	78
R <sup>2</sup>	0.179	0.186			

Standard Errors in Parentheses. \*\* and \*\*\* denote significance at the 5%, and 1% levels.

Table 4: Robustness Checks: Coefficient Estimates for COAST

		(1)	(2)	(3)	(4)	(5)
Row		OLS	PPML	Hazard Ratio	IV - LIML	IV - PPML
	Dep. Variable	Ln( <i>DUR</i> )	<i>DUR</i>	<i>DUR</i>	Ln( <i>DUR</i> )	<i>DUR</i>
1	Regional Dummies included	0.100** (0.048)	0.111*** (0.041)	0.834*** (0.056)	0.207*** (0.075)	0.239** (0.096)
2	No China	0.100*** (0.035)	0.151*** (0.056)	0.815*** (0.044)	0.208*** (0.075)	0.258*** (0.071)
3	No India	0.116*** (0.036)	0.140*** (0.043)	0.823*** (0.039)	0.193*** (0.070)	0.229*** (0.062)
4	No Iran	0.112*** (0.035)	0.138*** (0.043)	0.818*** (0.039)	0.173*** (0.065)	0.206*** (0.056)
5	No Mideast	0.110*** (0.036)	0.135*** (0.043)	0.830*** (0.039)	0.205*** (0.075)	0.245*** (0.069)
6	No Egypt	0.108*** (0.036)	0.136*** (0.047)	0.834*** (0.039)	0.200** (0.080)	0.238*** (0.067)
7	No SSA	0.113*** (0.035)	0.144*** (0.046)	0.825*** (0.037)	0.209*** (0.078)	0.245*** (0.067)
8	No N. Europe	0.116*** (0.035)	0.150*** (0.047)	0.819*** (0.037)	0.203*** (0.075)	0.241*** (0.065)
9	No Steppes	0.169*** (0.062)	0.203** (0.091)	0.795*** (0.067)	0.325*** (0.137)	0.344*** (0.100)
10	No SE Asia	0.109*** (0.034)	0.137*** (0.045)	0.827*** (0.037)	0.202*** (0.076)	0.239*** (0.065)
11	No Mediterranean	0.099*** (0.035)	0.110*** (0.036)	0.841*** (0.040)	0.193** (0.079)	0.232*** (0.073)
12	Duration > 49	0.079*** (0.029)	0.121*** (0.045)	0.830*** (0.039)	0.220*** (0.082)	0.258*** (0.069)
13	Duration > 99	0.068** (0.030)	0.102** (0.041)	0.814*** (0.043)	0.207*** (0.075)	0.244*** (0.080)
14	Size > 0.49	0.112*** (0.036)	0.142*** (0.045)	0.828*** (0.038)	0.202*** (0.078)	0.247*** (0.069)
15	Size > 0.99	0.101** (0.041)	0.142*** (0.045)	0.840*** (0.039)	0.215*** (0.082)	0.261*** (0.073)
16	Begin > 600 BCE	0.114*** (0.037)	0.143*** (0.047)	0.828*** (0.038)	0.233*** (0.079)	0.260*** (0.069)
17	End < 1500 CE	0.100*** (0.036)	0.132*** (0.048)	0.839*** (0.039)	0.153** (0.075)	0.195*** (0.065)
18	COAST > 0	0.224** (0.098)	0.297*** (0.114)	0.686*** (0.080)	0.489*** (0.169)	0.531*** (0.134)
19	Early Peak	0.103*** (0.038)	0.137*** (0.048)	0.828*** (0.041)	0.221*** (0.083)	0.259*** (0.071)
20	No Confederations	0.163*** (0.055)	0.207*** (0.081)	0.787*** (0.060)	0.323*** (0.117)	0.365*** (0.105)
21	No Secessions	0.070** (0.034)	0.096** (0.038)	0.856*** (0.041)	0.164** (0.077)	0.218*** (0.076)

22	No “water defense” empires	0.103*** (0.036)	0.134*** (0.047)	0.828*** (0.038)	0.181** (0.075)	0.253*** (0.073)
	Baseline Results	0.113*** (0.035)	0.142*** (0.045)	0.824*** (0.038)	0.207*** (0.075)	0.246*** (0.066)

Standard Errors in Parentheses. \*\* and \*\*\* denote significance at the 5%, and 1% levels. Baseline Results from Table 3 and are re-shown to ease comparison. Row 22 removes the following empires that seas provided defensive barriers to a larger extent than for other empires: Almohad, Almoravid, Byzantine, Cordova, Carthage, Khmer, and the Visigothic Kingdom.

## Appendix: Documentation Regarding Empires

In the below descriptions, dates in **bold** denote the beginning and ending dates I use. These do not always correspond to “traditional” dating assignments since what is most relevant for me is the period in which state power is projected. During a decline, for example, my ending date precedes the termination of a dynasty which might hold power but only over a small area.

I have listed Chinese empires separately (at the end) because of inherent problems in assigning dynasties to empires. Often, one dynasty replaced another not because they conquered it externally (as with the Yuan Dynasty of the Mongol invasion) but when one elite family replaced the ruling family in something more akin to a palace coup. In these cases, I have combined these dynasties. Such cases are denoted by the full list of dynastic names in the title.

Abbasid Caliphate – The Abbasids arose in the 740’s and defeated the Umayyads in **750** to lead the Islamic world although they soon saw some territory chipped away. The traditional date of the ending of the Abbasid Caliphate is 1258 when Baghdad was sacked by the Mongols. Nevertheless, the Caliph held little power after Al-Qahir was forced to abdicate in **934**.

Achaemenid – Cyrus the Great launched the empire after usurping the Medes in **550 BCE**. The empire quickly expanded, even conquering Egypt in 525. Persia was later conquered by Alexander the Great in **330 BCE**.

Akkadian Empire – Founded around **2350 BCE** by Sargon, the empire stretched along the Euphrates and Tigris rivers and briefly expanded into Arabia. It was destroyed by the Gutians around **2150 BCE** although drought may have also played a factor. Note: dates correspond to the “Middle Chronology”.

Almohad Caliphate – Although the Almohads arose in 1121, it was only in **1147** that they overthrew the Almoravids. They continued their conquests out of North Africa and into Iberia in 1172. However, they lost most of Iberia by **1248** and the rule of the last Almohad in 1269 was consigned mostly to Marrakesh.

Almoravids – Founded in 1040 by Ibn Yasin, Almoravid power expanded after **1050** when the Lamtuna tribe under Yasin’s leadership conquered its neighbors and eventually moved from North Africa into Iberia, peaking in 1094. They were overthrown by the Almohads in **1147**.

Assyrian (Neo) Empire – Although Assyria had expanded in the past, the greatest manifestation of the Assyrian Empire began in **911 BCE** under the reign of Adad-Nirari II. Expansion continued over the next two centuries and reached its peak with the conquest of Egypt in 670. However, decline was sudden. The Medes and Babylonians defeated the Assyrians in **608 BCE**.

Avar Khaganate – The Avars were a confederation of nomads that were unified under Bayan in **580**. After leaving the steppes, they settled in Central Europe. A defeat by the Byzantines in **626** and then the growing power of the Bulgarians severely weakened them, limiting their territory to Pannonia. They were finally wiped out by Charlemagne in 796.

Babylonian (1<sup>st</sup>) Empire – Expansion began under the reign of Hammurabi in **1728 BCE** (Short Chronology). Babylon was sacked by the Hittites in **1531 BCE** and later ruled by the Kassites.

Bactria – Bactria seceded from the Seleucid Empire around **150 BCE**. It reached its zenith in 184 BCE when it made inroads in India after the fall of the Maurya Dynasty. Attacks from Scythians weakened the empire and along with Parthia destroyed it in **125 BCE**.

Byzantine Empire – Began in **395** as Roman Empire split into Western and Eastern parts. The empire peaked under Justinian in 555, regaining much of the territory of the former Roman Empire. I set the end of the empire in **1204** when crusaders sacked Constantinople and formed the Latin Empire. Despite regaining Constantinople in 1261, the empire was a shell of itself. Its territory was limited to the surrounding area and was killed off by the Ottomans in 1453.

Carolingian Empire (Frankish) – Pepin began a series of conquests to reunite the Frankish Kingdoms in **687**. After Pepin's death in 714, Charles Martel consolidated power in the Frankish civil wars of 715-18. By 718, he then turned his focus on acquiring other territories. A victory over the Muslims at the Battle of Tours in 732 enhanced his political power. Although not nominally the king, he was the power behind the throne, often appointing the kings. Carolingian power reached its zenith under Charlemagne who was crowned emperor in 800. But upon his death in 814, his sons vied for power and led to civil war. The Treaty of Verdun in **843** formally split the empire into three realms. These achieved mixed levels of success but were often subdivided themselves among various heirs.

Carthage – Founded by the Phoenicians, Carthage became independent around 650 BCE. Carthage expanded along the North African coastline and was the dominant power in the western Mediterranean by **550 BCE**. Carthage's defeat by Rome in the Second Punic War in **202 BCE** ended Carthage as a force in the region. Carthage was completely destroyed in 146 BCE.

Chagatai Khanate – One of the weakest of the Mongol empires, the Chagatai Khanate was subservient to the Yuan Dynasty until **1260** when it gained autonomy. It achieved its formal independence under Duwa in 1301 but disintegrated following the death of Qazan in **1346**. Although a Chagatai khan sat on the throne, power was decentralized across several rulers. Many of these would be swept aside by Tamerlane in 1370.

Chaldean Empire (Neo-Babylonian Empire) – Babylon gained independence from Assyria in **625 BCE** and then defeated their former overlords in 608 BCE. The empire peaked in 562 BCE under Nebukadnezar II. In **539 BCE**, Babylon was conquered by the Persians.

Cordoba (Caliphate) – After fleeing the Abbasids, Abd-ar-Rahman I became the Emir of Cordoba in **756**. He defeated other local rulers and unified much of the surrounding territory. In 929, the empire peaked and Abd-ar-Rahman III took the title caliph. The caliphate persisted until **1031** when it disintegrated into several smaller kingdoms.

Delhi Sultanate (First) – The Mamluk Dynasty formed the initial Delhi Sultanate when it seceded from the Ghurids in **1206**. The dynasty was overthrown by the Khilji Dynasty in 1290 which in

turn was overthrown by the Tughlaq Dynasty. The power of the sultanate continued to increase as more of India came under its sway, maximizing its territory in 1312. In **1398**, however, Tughluq power was shattered by Timur (Tamerlane).

Eastern Turks (Second Turk Khaganate) – Descended from the Gokturks, the Eastern Turks formed the Second Khaganate when Kapaghan led a Turkish revolt against the Tang Empire in **681**. Their power expanded south and west but they were then defeated by the Uyghurs in **744**.

Egypt (Old Kingdom) – Beginning with the Third Dynasty circa **2686 BCE**, the Old Kingdom was restricted to the banks of the Nile River. The Old Kingdom persisted through the Sixth Dynasty but severe drought caused civil war, bringing about its downfall in **2181 BCE**.

Egypt (Middle Kingdom) – The First Intermediate Period saw a breakdown of centralized authority. Reunification occurred under Mentuhotep II and was well underway by **2040 BCE**. Egypt was ruled by the 11<sup>th</sup>, 12<sup>th</sup>, and 13<sup>th</sup> dynasties. The height of the Middle Kingdom occurred under Sensuret III around 1860 BCE. Later crises of succession could have contributed to the conquest of lower Egypt to the Hyksos in **1650 BCE**.

Egypt (New Kingdom) – Around **1550 BCE** Ahmose I from Thebes drove out the Hyksos and reunified Egypt. Ruled by the 18<sup>th</sup>, 19<sup>th</sup>, and 20<sup>th</sup> dynasties, Egypt reached the height of its power in 1450 BCE. However, drought and a low Nile caused internal political disintegration. By **1077 BCE**, Egypt had once again fragmented into several parts and lacked central authority.

Egypt (26<sup>th</sup> Dynasty) – Also known as the Saite Period, the 26<sup>th</sup> dynasty began in 664 BCE with the rise of Psamtik I who reunified Egypt in **655 BCE**. Under him, Egypt also broke away from Assyrian control. The dynasty lasted until **525 BCE** when Persia conquered Egypt.

Fatamid/Ayyubid/Mamluk – The Fatamid Caliphate was founded in **909** with Ubayd Allah. The Fatamids spread out of Tunisia and conquered Egypt in 969. Fatamid power waned in the 11<sup>th</sup> century as their hold over western North Africa diminished. Turkic and Crusader armies also pushed the Fatamids out of the Levant. Nevertheless, the Fatamids endured until 1171 when Saladin as vizier overthrew them and founded the Ayyubid dynasty. The Ayyubids quickly expanded out of Egypt. However, they were usurped and pushed out of Egypt by the Mamluks in 1250. The reign of the Mamluks lasted until **1517** when the Ottomans defeated the Mamluks and gained possession of Egypt.

Ghaznavid Dynasty – Founded by Sebuktigin in **977**, Ghaznavid territory grew as they defeated the Samanids in 999. The empire peaked in 1030. After a defeat by the Seljuks in 1040 and the sack of their capital in **1151** by the Ghurids, power waned. Much of the Ghaznavid state was then absorbed into the Ghurid Empire in 1175, being finally extinguished in 1186.

Gokturks – In **552** Bumin Kagan defeated the Rouran Khaganate but died soon afterward. Expansion continued under his son Muqon. Despite the secession of the western part of the Khaganate, rule in the East continued until the Gokturks were defeated by a Tang Army in **630**

Golden Horde – An offshoot of the Mongolian Empire, the Golden Horde advanced westwards under Batu in 1235 before withdrawing due to the death of the Great Khan. It formerly broke off from the Mongol Empire in **1310**. The Golden Horde remained a strong power until it was defeated by Timur in 1396. The Khanate of Kazan broke off in **1438** followed by several other Khanates. The last of the Golden Horde was defeated by the Crimean Khanate in 1502.

Gupta Empire – The Guptas became leaders of Magadha in the early 4<sup>th</sup> century. Chandragupta I ascended the throne in **320** and expanded his territory along the Ganges River. His successor, Samudragupta, continued this expansion until 380, reaching the Indus River as well as following the eastern coastline into the Deccan. Their golden age persisted until 470 when invasions from the Hephthalites (or White Huns) weakened the empire. By **500**, much of Northwest India had been overrun. The Guptas maintained a rump state until 550 but their power had clearly waned.

Gurjara-Pratihara – This was a northern Indian state that saw its fortunes wax and wane from the 8<sup>th</sup> to the 10<sup>th</sup> centuries. But the ascension of Bhoja I in **836** saw unprecedented expansion throughout northern India, peaking in 860. But upon the death of Bhoja's son in **910**, the empire quickly fragmented and was defeated by external powers.

Harsha – Harsha became leader of a growing but small north Indian kingdom in **606**. He expanded his territory throughout northern India though he was checked by the Chalukyas in the south. His territory peaked in 625. Upon his death in **647**, his empire quickly broke apart.

Hittites – Hittite power waxed and waned during the Old and Middle Kingdoms. But the beginning of the New Kingdom circa **1380 BCE** renewed its expansion and even led to conflict with Egypt at the Battle of Kadesh in 1274. Later in the 13<sup>th</sup> century, the Hittite Empire did not survive internal dissent and attacks from the Sea Peoples, collapsing in **1190 BCE**.

Hunnic Empire – The Huns were a loose federation of tribes until Oktar unified them in **420**. Upon his death in 434, control passed to his nephews, one of whom, Attila, later gained sole control. Upon his death in 453, the empire broke apart, completely dissolving in **469**.

Ilkhanate – Founded by Hulagu Khan (a grandson of Genghis Khan) in **1256**, the khanate was nominally subservient to the Great Khan of the Yuan dynasty but was largely independent. The khanate dissolved in **1335** with the death of Abu Said.

Kara Khitan Khanate (Western Liao) – Founded by Yelu Dashi in **1124**, a Khitan who fled into Central Asia when the Khitans were defeated by Jurchens, the Kara Khitans became a power in 1134 when they defeated the eastern Karakhanids. They were destroyed by Genghis Khan in **1218**.

Khazar Khanate – Khazar power increased with the fall of the Gokturks in 630. The Khazars then expanded westward above the Black Sea and pushed the Bulgars out of the region, breaking their confederation in **670** and establishing their own realm by 700. The Khazars remained a powerful state in the Eurasian steppe until defeated by the Rus in **969**.

Khmer Empire – Jayavarman II became ruler of Kambuja in 790. After expanding his territory, he declared himself “Chakravartin” in **802**, the traditional founding of the Khmer Empire. Expansion continued throughout his and his successors’ reigns. Although Khmer suffered a huge defeat to the Chams in 1117, a successor king soon reversed these fortunes in 1181 and the empire saw further expansion, peaking in 1290. By **1350**, however, the Ayutthaya Thais became a rival state. They not only encroached on Khmer territory but sacked the capital twice. Although the Khmer Empire lingered until 1431, the last decades saw further declines.

Khwarezm Empire – Originally a principality in of the Seljuks in Central Asia, Khwarezm seceded in **1156**. Khwarezm fought recurrent wars with the Kara Kitans with mixed success. The empire was destroyed by Genghis Khan in **1220**.

Kiev Rus – Kievan power grew after **882** when Prince Oleg unified various Slavic peoples and established his capital at Kiev. Another round of territorial expansion occurred in the last decades of the 10<sup>th</sup> century, peaking in 1000. However, internal strife led to internal fragmentation so that central authority had greatly weakened in **1132** following the death of Mstislav the Great, the last leader to lead a unified state. The Mongols destroyed Kiev in 1240.

Kushan Empire – Kushan territory expanded around **30** as a local leader, Kujula Kadphises, took advantage of Parthian and Scythian conflict. The empire reached its height around 90 and comprised much of present-day northern India and Afghanistan. After the death of Vasudeva in **230**, the empire disintegrated and succumbed to attacks from the Sassanid and Gupta empires. Although the Kushan Kingdom existed until late in the 4<sup>th</sup> century, it was a shell of itself.

Liao (Khitans) – Abaoji became Great Khan of the Khitans in **907** and unified the tribes. Not only was Abaoji able to hold dominion over the other Khitan tribes but he also expanded Khitan power, defeating rival steppe powers and making inroads into northern China. The Empire persisted until it was conquered by the invading Jinn (Jurchens) in **1125**.

Lithuania (Poland) – Lithuania began expanding in the 13<sup>th</sup> century and defeated the Golden Horde in **1363** at the Battle of the Blue Waters. Lithuania continued to expand, later merging with Poland. The two kingdoms were unified under King Sigismund in 1569 although the formal Union of Lublin Constitution in 1569 is often used to mark the formal union of the two kingdoms. Although the union nominally survived until 1795, the commonwealth became a Russian protectorate in **1717**.

Lydian Empire – Founded by Gyges in **680 BCE**, the Lydian Empire became a power in the western part of Anatolia. It lasted until **546 BCE** when it was defeated by Cyrus the Great.

Macedonian Empire – Expansion began in **356 BCE** with Phillip’s hegemony in Greece. It continued more famously under Alexander the Great. Alexander died in 323 and the empire broke apart into four distinct regions under the Partition of Triparadisus in **320 BCE**.

Mali Empire – The Mali Empire was founded by Sundiata Keita in **1235** when his tribe defeated the Sosso Kingdom of Kaniaga. It reached its height in 1380. However, raids by the Tuareg’s

and then the encroaching Songhay Empire had greatly weakened Mali by **1545**. Although Mali survived for another century it was no longer noted for its wealth or power.

Median Empire – Before **625 BCE**, the Medes were either not unified, were under Assyrian influence, and were defeated by the Scythians in 653. But in 625 BCE, Median power ascended under Cyaxares. However, the Median Empire was usurped by the Persians in **550 BCE**.

Mongol/Yuan – Founded when Genghis Khan unified the Mongol tribes in **1206**, Genghis conquered the surrounding areas, stretching from the Sea of Japan to Eastern Europe. In an attempt to gain control of China, Kublai Khan renamed his territory the Yuan Empire whereas other Mongol regions found separate identities. When Kublai Khan died in 1294, the Mongol Empire split into four separate empires, the Yuan being one of them. In **1368**, the Yuan dynasty was overthrown by the Ming dynasty.

Mughal Empire – The dates spanning the Mughal Empire are often ascribed to be 1526-1857. In 1526, the Mughals drove the last of the Delhi Sultanates out of Delhi. But the Mughals were then quickly driven out of Delhi by the Sher Shah Sur from Afghanistan. The Mughals returned to power in **1556** and this time their reign was long lasting, quickly expanding across India. The rise of the Marathas, however, pushed back Mughal authority and the Marathas sacked Delhi in **1737**. With the British also making inroads into India, de facto Mughal authority was limited to Delhi. In 1857, the British deposed the Mughals for their support of the Great Rebellion.

Nanda/Maurya/Sunga Empires – In **345 BCE**, the Nanda Dynasty overthrew the Shishunaga Dynasty and expanded its territory across the Gangetic Plain. In 323, Chandragupta Maurya overthrew the Nandas and unified most of the Indian subcontinent. Mauryan power grew even stronger under his grandson, Ashoka, reaching its zenith around 250 BCE. Mauryan power waned after Ashoka's death in 232 BCE. The last Mauryan king was killed by the commander of his guard, Pusyamitra Sunga, in 185 BCE who founded the Sunga dynasty. Although not as expansive as the Mauryan Empire, the Sunga Empire remained a force in northeastern India until it disintegrated after **141 BCE** although a small section survived until 73 BCE.

Ottoman Empire – Founded by Osman I in 1299, the Ottomans captured the important city of Bursa in 1326. By **1382**, the Ottomans had captured most of Anatolia and expanded into the Balkans. Later conquests included Mesopotamia and North Africa. In 1453, they captured Constantinople. Ottoman rule endured until **1922** when the empire fragmented.

Parthian Empire – Although founded by Arsaces I in 247 BCE, he was temporarily forced into exile by the Seleucid Empire. Moreover, a Seleucid invasion of Parthia around 210 BCE resulted in a peace treaty where Arsaces II nominally submitted to Antiochus III of the Seleucids. However, conflict with the Ptolemies and Rome weakened the Seleucid Empire and the Parthians gained more autonomy. Their territory expanded with the reign of Mithridates beginning in **167 BCE**. The Parthian Empire lasted until **224** when it fell to the Sassanids.

Ptolemaic Kingdom – Founded in **305 BCE** when Ptolemy, Governor of Egypt, broke off from the Macedonian Empire, it survived until **30 BCE** when it became a Roman province.

Roman Republic-Empire – The traditional date for the founding of Rome is 753 BCE. For centuries, Rome remained a local power. But in **272 BCE** Rome conquered lower Italy in the Pyrrhic War. It captured Sicily in 241 BCE. Conquest continued until 117 under Trajan. Borders stabilized until the 3<sup>rd</sup> century crisis. Rome was able to re-stabilize the borders in the 4<sup>th</sup> century. Alaric sacked Rome in **410**. Roman power further waned as important provinces were lost to invaders. Odoacer sacked Rome in 476, forced the emperor to abdicate, and did not replace him with anyone. Note: Results are robust to setting the end date at 293 when Diocletian formally divided the empire into the four units of the Tetrarchy.

Rouran Khaganate – A confederation of steppe tribes unified under Yujiulu Shelun in **402**, the Rouran controlled part of the Silk Road. They were ultimately defeated by an alliance of Gokturks, Wei, and Qi forces in **552**.

Samanids – Founded by Saman Khuda in 819, early rule was limited to Khorasan and Transoxiana as Abbasid governors. However, they were effectively independent by **875**. Their power grew in 893 under Ismail I as he expanded his territory and defeated the Saffarids in 901. Their territory peaked 928. Samanid power declined in the second half of the tenth century and in **999** was defeated by the Ghaznavids and the Karakhanids.

Sassanid Persia – The Sassanids arose under Ardashir I. Parthian weakness allowed the Sassanids to quickly drive the Parthians out in **224**. Wars with Rome and Byzantium saw fortunes wax and wane as territory shifted between the two. Sassanid power peaked in 615 with the capture of Egypt. However, the Byzantines recaptured some of the lost territory and the empire did not survive the Muslim onslaught in **651**.

Seleucid Empire – One of the four breakaway regions from the Macedonian Empire, Seleucus established control over his territory in Mesopotamia in 312 BCE. Seleucus began expanding his territory in **320 BCE** toward both India and Syria. The empire faced several crises in the middle of the 3<sup>rd</sup> century BCE but was revived under Antiochus the Great. However, Roman power checked Seleucid expansion. In **129 BCE**, the Seleucids were soundly defeated by the Parthians and civil war tore the empire apart. Their domain was restricted to Syria. In 63 BCE, Rome wiped away the Seleucids and made Syria into a province. The peak size occurred in 301 BCE.

Seljuks – Seljuk seceded from the Oghuz tribal confederation in the ninth century. His tribe migrated out of Central Asia and toward Iran. Expansion increased, albeit nonmonotonically, under Toghril Beg who stormed the city of Ghazna in **1037**. He then defeated the Ghaznavids in 1040. Seljuk armies continued west driving back Byzantine forces and capturing Syria and the Holy Land. Although the Seljuks defeated the Second Crusade armies in 1148, other developments were less favorable. Internal dissension weakened the empire after the death of Malik Shah I in 1092 and the Seljuks were defeated by the Karakitans in **1141**. The empire quickly then fragmented into several parts. The empire reached its greatest extent in 1092.

Songhai Empire – The Songhai broke away from the Mali Empire in 1340 but its expansion did not begin until the reign of Sonni Ali in **1464**. Internal struggles weakened the empire and it was then destroyed by Moroccan forces in **1591**, most decisively at the Battle of Tondibi.

Tibetan Empire – Songtsan Gampo rose to power in **618** after his father’s death. Gampo unified the Tibetan tribes and expanded his power, culminating in the Tibetan Empire. The Empire lasted until **842** when internal power struggles caused its disintegration. Although nominally still in existence until the 1240’s with the invasion of the Mongols, central authority was lacking.

Timurid Empire – Founded in **1370** when Timur (Tamerlane) became leader of the Ulus Chagatay, the empire quickly expanded by conquest and reached its apex around 1405. Iran was lost to the Safavids in 1501 and the important cities of Herat and Samarkand fell in 1505 and **1507**, respectively. Little territory remained when the empire was finished off in 1526.

Umayyad Caliphate – The Muslim conquest out of Arabia was in full force by **633**. In 664, the Caliph Ali (of the Rashidun Caliphate) was assassinated and the Umayyads gained control of the caliphate. 664 is the traditional date for the founding of the Umayyad dynasty. I use the earlier year since the ascension of the Umayyads represents an internal power struggle and not a conquest by external powers. Nor is it a case where a subjugated region within the empire rises up and supplants the central authority as in **750** when the Abbasids revolted out of Persia and supplanted them.

Uyghurs – The rise of the Uyghurs occurred in **744** under Qutlugh bilge köl when the Uyghurs revolted from the Gokturks. The Uyghurs soon gained power of the other rebellious tribes and expanded until they were defeated by the Kyrgyz in **840**.

Visigothic Kingdom – The Visigoths were granted land in Gaul upon which to settle by Honorius as a reward to their aid to Rome although they had de facto independence. In **456**, they expanded into Spain. In 475, they forced the declining Roman Empire to grant them formal independence. A defeat by the Franks in 507 drove them out of Gaul but they retained their land south of the Pyrenees until the Moors conquered them in **711**.

Western Turks – A leadership crisis emerged among the Gokturks following the death of Taspar Kagan in **584**. A leader named Tardu emerged in the West and broke away from the “eastern” Gokturks. Power waned for the Western Turks as further secessions occurred until they were defeated by a Tang army in **657**.

Xiongnu Empire – The Xiongnu were united in **209 BCE** by Modu Chanyu and quickly conquered its neighbors. In 55 BCE, succession crises led to the fragmentation of the Empire into two halves. The Western Xiongnu were destroyed in 36 BCE. The Eastern Xiongnu further fragmented into North and South blocs in **48** with the South soon becoming dependent upon the Han. The northern Xiongnu were conquered by the Xianbei in 85.

## China

Western Zhou – The Zhou dynasty begin in **1046 BCE** when King Wu of Zhou overthrew the Shang dynasty.<sup>21</sup> Its peak was at its beginning. The empire fell in **771 BCE** when a rival aided

---

<sup>21</sup> The Shang Dynasty is not included in this list for two reasons. Their origins are murky, making the establishment of a beginning date more problematic than for other cases. Second, to what extent their territory was contiguous is also unclear.

by outside forces killed King You. The Zhous migrated east to form the Eastern Zhou dynasty but their power remained nominal as local rulers held real power.

Chu – Originally a tributary state of the Western Zhou dynasty, Chu defeated Zhou in 957 BCE. It then grew in power throughout the “Spring and Autumn” period after the downfall of the Zhou in **770 BCE**. Chu fortunes waxed and waned but it remained one of the two most powerful states within China until defeats by the Qin in **223 BCE** severely weakened it.

Qin Dynasty – The traditional beginning of the Qin Dynasty is 221 BCE with the reign of Shi Huangdi. However, Qin became a powerful state within China in **316 BCE** when it defeated Shu. Despite some subsequent defeats, it re-emerged as an expansionist power when it inflicted a severe defeat upon Chu in 277 BCE. Expansion continued and Shi Huangdi conquered China by his death in 210. The dynasty then disintegrated and fell in **206 BCE**.

Han Dynasty – Shortly after the fall of the Qin dynasty, China was reunified under Liu Bang in **206 BCE**, the first emperor of the Han Dynasty. Han rule was briefly interrupted from 9 to 23 A.D. when regent Wang Mang declared himself to be ruler of the Xin dynasty but the Han soon reclaimed power. In **220**, the empire fragmented into the Three Kingdoms of Wei, Shu, and Wu.

Wei/Jin/Eastern Jin/Liu Song/Southern Qi/Liang/Chen Dynasties – The Kingdom of Wei, located in northeastern China, arose out of the fragmentation of the Han Dynasty in **220** and was first led by Cao Pi. Power of the Cao clan weakened and the Sima family became the de facto power behind the throne. In 265, Sima Yan forced Cao Huan to abdicate and Sima Yan proclaimed the Jin Dynasty. The Jin Dynasty was able to briefly re-unify China but for only ten years from 280 to 290 as internal struggles weakened it. Uprisings and power grabs forced the Simas to flee south in 316 where they established the Eastern Jin Dynasty and continued to rule the southern half of China. The Eastern Jin lasted until 420 when palace usurpations became frequent leading to the Liu Song (420-479), the Southern Qi (479-520), Liang (520-557), and Chen (557-589) dynasties. The Chen dynasty was conquered by the Sui dynasty in **589**.

Shu Dynasty – One of the Three Kingdoms arising out of the Han Dynasty, the Shu Dynasty was founded by Liu Bei in **221**. It lasted four decades when it fell to the Wei Dynasty in **263**.

Wu (Eastern Wu) Dynasty – The Wu Dynasty was another of the Three Kingdoms that arose from the fall of the Han Empire in **220**. It was conquered by the Jin Dynasty in **280**.

Earlier Zhao – One of the Sixteen Kingdoms, it rose in **304** when it seceded from the Jin Dynasty. It was defeated in **329** by the Later Zhao dynasty.

Later Zhao/Former Qin – One of the Sixteen Kingdoms arising from the fall of Jin Dynasty, the Later Zhao rose in **319** when it seceded from the Earlier Zhao. In 351, a rebellion by one of its officers usurped the dynasty and established the Former Qin dynasty. It briefly unified northern China but was brought down through internal disintegration and a defeat by the Eastern Jin in **383**. Although it survived another 11 years, its power was greatly reduced.

Northern Wei/Western Wei/Northern Zhou/Sui/Tang – Northern Wei broke free of the Later Yan in **398** during the period of the Sixteen Kingdoms. By 439, it had unified northern China. However, internal dissent caused its split and the loss of Eastern Wei in 534 and so the surviving state was called the Western Wei. Palace coups first saw the rise of the Northern Zhou in 557 and then the Sui in 581. However, the unification of China proceeded during these dynasties and culminated in 589. Wars and infrastructure projects bankrupted the dynasty, provoking large scale rebellions throughout China and precipitating the fall of the Sui in 618 and the rise of the Tang dynasty. In 763 the An Lushan rebellion severely weakened the empire. Only with outside help were the Tangs able to put it down. Regional governors gained autonomy, including making their positions hereditary. A period of recovery began in the early 9<sup>th</sup> century but a second major rebellion in **875** rocked the empire and quickly led to fragmentation although the traditional fall of the Tang dynasty is 907.

Eastern Wei/Northern Qi – In **534**, the Northern Wei Dynasty split into Eastern and Western parts. The de facto ruler of Eastern Wei was Gao Huan. In 552, his son, Gao Yang deposed the nominal emperor and started his own dynasty, the Northern Qi. In **577**, Northern Qi was conquered by the Northern Zhou dynasty.

Jin/Later Tang/Later Jin – The state of Jin was one of the kingdoms arising from the fall of the Tang in **907**. Li Cunxu overthrew the Jin dynasty in 923 and proclaimed the Later Tang Dynasty. The Later Tang was overthrown by a coup in 936 which saw the ascendance of the Later Jin in 936. The Later Jin was then conquered by the Khitan Liao in **947**.

Later Han/Later Zhou/Song – The Later Han was founded by Liu Zhiyuan in **947**. A succession crisis among the Khitan created a power vacuum and enabled Liu to declare his own state and dynasty. Liu soon died and power was then usurped by Guo Hei who declared the start of the Later Zhou Dynasty in 951. The Later Zhou was then overthrown by Zhao Kuangyin in 960 who proclaimed the Song dynasty. The Song dynasty unified China. But in 1126, Jurchen invaders pushed the Song out of northern China and established the Jinn dynasty. The Song dynasty was then limited to southern China until **1279** when it was destroyed by the Mongols.

Jinn Dynasty – The Jinn Dynasty arose from the Jurchens who unified under Wanyan Aguda in **1115**. They defeated the Liao Khitans and by 1127 had pushed the Song Dynasty into southern China. The Jinns controlled northern China until the Mongols conquered them in **1234**.

Ming Dynasty – One of these rebel groups revolting against the Yuan was led by Zhu Yuanzhang who amassed considerable territory by **1361**. After defeating the other factions, he captured Dadu (Beijing) in 1368 and established the Ming Dynasty. The Mings ruled China until **1644**. After several revolts had weakened the empire, the Manchus invaded, pushing the Mings to southern China. Although some Mings held out until 1662, their power was limited.

Qing Dynasty – In **1644**, Manchu invaders deposed the Mings and established the Qing dynasty. Their conquest of China was complete by 1683. Although the last Qing emperor did not abdicate until 1912, Chinese power had severely waned due to the Opium War and Taiping Rebellion which foreign troops eventually helped to quell. By **1895**, China had been carved up into spheres of influence by outside powers and lost a war to Japan.