Engineering the Rule of Law in Ancient Athens

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ABSTRACT: Scholars typically regard the "rule of law" – a stable and predictable process by which laws are implemented, enforced, and changed – as a cornerstone of good governance and a key factor supporting economic growth. Yet much remains unknown as to why only some societies have successfully established the rule-of-law in a durable and reliable form. In this paper, we develop a model in which the value of using a stylized "law" to constrain future majority-rule decisions depends on expectations regarding the net social benefits and the distributional consequences of policy decisions. We apply the model to what was perhaps the first rule-of-law state: Athens in the 4th century BCE. The Athenians established a rule-of-law system after operating quite successfully without one in the 5th century BCE. Athens can provide unique insight because it relied on direct democracy, which means that the move to a rule-of-law system reflects a choice that voters made to constrain themselves. Athenians chose to adopt the rule of law when they did, we argue, because losing the Peloponnesian War eliminated a major source of wealth (tribute payments from the Delian League), thereby increasing the importance of voluntary exchange and complex contracts.

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Where the good king rules, law is an obstacle standing in the way of justice. - Plato[1]

Rightly constituted laws should be the final sovereign; and personal rule, whether it be exercised by a single person or a body of persons, should be sovereign only in those matters on which law is unable, owing to the difficulty of framing general rules for all contingencies, to make an exact pronouncement. - Aristotle[2]

I. Introduction

As James Madison famously wrote, "In framing a government that is to be administered by men over men, the great difficulty lies in this: You must first enable the government to control the governed; and in the next place, oblige it to control itself" (*The Federalist*, No. 51, p. 349). The rule of law is a commitment to such control, and the majority of today's successful societies operate according to a "rule of law."[3] In recent years, a large empirical literature has demonstrated that various proxy measures for the rule of law are robustly correlated with levels of wealth and rates of economic growth (Knack and Keefer 1995, 1997; Kaufmann and Kraay 2002; Feld and Voigt 2003). Scholars thus have good reason to consider the absence of the rule of law an institutional failure, perhaps due to self-interested behavior by ruling elites, or perhaps to time-inconsistency problems.[4]

In this paper, we take an approach that complements the previous literature, but differs in an important way. Our main point is straightforward: Even though committing to a rule-of-law system can inspire socially valuable activity (trade, investment, innovation, and so forth),

[1] Quoted in Jones (1956, 7).
[2] Quoted in Scalia (1989, 1176), who cites Ernest Barker, *The Politics of Aristotle* (Oxford, 1946).
[3] The "rule of law" is a difficult term to define precisely. Weingast (1997, 245) calls it "a set of stable political rules and rights applied impartially to all citizens." For additional discussion, see, e.g., Maravall and Przeworski (2003) and the associated essays.
[4] Weingast (1997) argues that a rule of law must be self-enforcing. See also Ferejohn (1998), who makes the same argument for independent courts (an important element of the rule of law in many countries), and Fleck and Hanssen (2013b, 2013c), who discuss time-inconsistency problems in the context of a judiciary. See Buchanan and Tullock (1962) and Riker (1982) for classic analyses of valuable constraints on majoritarian decisions.

establishing that commitment comes at a cost. This presents a tradeoff: Are the benefits worth the cost?

To illustrate the nature of that tradeoff, we develop a simple model in which the citizenry decides whether to commit to a stylized "law" to make future policy decisions or, instead, to decide via majority-rule. The expected payoffs hinge on a basic "rules versus discretion" tradeoff: Governing via rules helps to promote ex ante commitment, but precludes potentially valuable ex post adjustments to new information. Thus, when the ability to commit credibly has great value, such as in the presence of serious time-inconsistency problems, rule of law will be preferable. By contrast, when the ability to make later adjustments in response to ex ante unobservable information matters more (and time-inconsistency problems matter less), rule by majority will be preferred.

We apply our model to ancient Athens, which moved from a rule-by-majority system in the 5th century BCE to a rule-of-law system in the 4th century. The study of Athens can provide unique insight, because Athens was a direct democracy. Therefore, the move to a rule-of-law system reflected a choice made by voters to constrain themselves.

Athens established its first democracy in the late 6th century BCE, following centuries of oligarchy and tyranny. During the subsequent 5th century, Athens expanded political rights and removed checks on popular decision-making, resulting in what Aristotle termed a "radical" democracy, with near-complete power concentrated in the Popular Assembly (*Ekklesia*), a majority-rule institution to which all Athenian citizens (regardless of wealth) belonged.[5] During this period, Athenian "law" did not consist of fixed rules, but rather was (in essence) whatever

[5] In most Greek *poleis* (city-states), political power was concentrated among landowners, or perhaps among an even narrower group. The basic criterion for Athenian citizenship was to be a male whose father was a citizen and whose mother had a citizen father. Women had no right to vote, to attend Assembly meetings, or to serve in public office.

the Assembly determined the law to be. Under this "rule-by-majority" system, Athens thrived, achieving a level of per capita wealth that classicist Josiah Ober (2015, 96) compares to that of Holland in the 17th century.

Following defeat in the Peloponnesian War in the late 5th century, Athens undertook a series of institutional changes intended to constrain the Assembly, including the establishment of a written law code and legal procedures to enforce the Assembly's adherence to it, and the re-empowering of a judicial body that had been disempowered during the previous century. Under this "rule-of-law" system, Athens thrived anew, at least equaling and perhaps exceeding the levels of wealth it had achieved earlier (Ober 2015, 96).

We argue that both the establishment of a largely unconstrained "rule by majority" democracy, and the transition to more constrained "rule of law" democracy – with checks on majoritarian decision-making – can be understood as attempts by Athenians to design institutions to match Athens' principal wealth-generating opportunities. During both the 5th and 4th centuries, Athens was Greece's preeminent commercial state, as its powerful navy kept the seas safe for trade. Thus, in both periods, funding the navy (and the associated commercial apparatus) and using it effectively were crucial to Athens' success. What changed between the two periods was the *how* naval power produced wealth for Athens.

During the 5th century, Athens' headed an alliance of Greek *poleis* known as the Delian League. Although the Delian League had been formed initially to defend eastern *poleis* against Persia, it quickly evolved into a tribute-paying Athenian "empire." For most of the 5th century, tribute from roughly 200 League members provided the bulk of Athens' public revenues. Athens distributed these revenues broadly among its citizens in return for citizen participation in empire-supporting activities (such as serving as a rower in the navy). As a result, the majority of

Athenians both benefitted from (as recipients of payments), and bore the cost of (in order to earn the payments), naval expeditions, keeping voters' incentives regarding use of the navy (and empire policy broadly) well aligned. Furthermore, managing the empire required the ability to adjust policies in response to new circumstances, and information regarding the empire's costs and benefits was relatively easy for all to observe.[6] In sum, the typical voter's incentives were aligned so as to favor policies that benefitted the broad Athenian citizenry, which, when combined with the nature of the new information the Assembly needed to interpret when setting policy, created a set of conditions under which a rule-by-majority system served Athenians well.

Sparta's victory over Athens in the Peloponnesian War brought about the dissolution of the Athenian empire. No longer able to collect tribute payments, Athens' wealth became dependent directly upon Athenian commerce. Taxes on trade (notably harbor duties) replaced tribute payments as Athens' most important source of public revenue, placing Athens in a position akin to that of today's wealthy democracies, for whom avoiding time-inconsistency problems and committing to contracts is essential. As our model predicts, Athens responded by writing down a set of laws and establishing mechanisms to constrain the Assembly's ability to change laws and policy. In doing so, Athens established a de facto rule of law.

We should note that for our model to explain why Athens moved to a rule-of-law system, it must be reasonable to believe that Athenians understood the tradeoffs on which our model is based. This appears so: Even though our paper is unique in its analysis of the conditions under which establishing the rule of law is optimal, the basic logic of these tradeoffs has long been recognized. The quotations we use at the top of page 1 provide good illustrations. In Plato's discussion of rule by a good king (which he found preferable to democracy), he explains why

[6]Tribute payments were banked in Athens from the mid-5th century onwards, and paraded publicly from port to acropolis for all to see; records of obligations and receipts were carved in stone and posted.

relying on the rule of law will have costs: Laws, by nature, impose constraints on the choices of good decision-makers (whether monarchs or voters) as well as bad, and those constraints will sometimes preclude first-best outcomes. In short, the tradeoffs at the core of our analysis were well understood long before time-inconsistency problems became so prominent in the economics literature (e.g., Kydland and Prescott 1977).[7]

By examining the way Athenian institutions evolved in response to changing economic opportunities, our analysis provides a new perspective on Greek history and the rule of law. In recent years, classicists have increasingly agreed that the Athenians established a rule of law in the 4th century BCE (e.g., Otswald 1986; Hansen 1999; Harris 2006; Lanni 2009; Lanni and Vermeule 2013; Carugati 2015; Forsdyke 2016), and we build on their work.[8] Moreover, for many years classicists have argued that Athens' 5th century rule-by-majority institutions developed in direct response to the requirements of maintaining its empire – indeed, the basic argument dates back to Thucydides. We also build on that idea. Our approach and findings depart from the previous literature, however, in that we consider the rise and the fall of the Athenian empire as symmetric influences on institutional changes.

For scholars interested in the development of wealth-enhancing institutions, the fact that Athens flourished under two different sets of institutions – rule by majority and rule of law – has important implications. If the Athenian citizenry designed institutions in response to benefits and costs, as we argue, the institutions must be considered endogenous – that is, consequences of

[7] Greeks also understood that the effectiveness of using laws to address time-inconsistency problems depends on the incentives faced by those who have the power to enforce the laws. See, e.g., Lanni's (2008) analysis of the way laws of war functioned in ancient Greece.

[8] There has, however, been substantial disagreement regarding precisely what the term means in the context of ancient Athens; see, e.g., the literature reviews in Carugati (2015) and Forsdyke (2016). Fleck and Hanssen (2012) and Carugati, Hadfield, and Weingast (2015) take a law-and-economics approach to explaining the unique features of the Athenian legal system. Carugati (2016) takes a law-and-economics perspective for explaining Athens' transition to the rule of law.

economic opportunities. As a broader lesson, new opportunities that increase the net benefits generated by a rule-of-law system should make establishing a rule of law more likely. And if the rule of law is indeed established, it will in turn allow the country to reap the benefits from those new opportunities. This underscores the importance of careful efforts to sort out causality when studying legal institutions and economic development.[9]

II. Theoretical Model: Laws as Self-Imposed Constraints

In this section, we develop a model to illustrate how the value of using laws as constraints on majority rule will depend on the nature of what is already known – and what is not yet known – at the time laws are written. This approach builds directly on the way Aristotle described the tradeoffs inherent in the choice between laws and personal rule – recall the quotation we used at the top of page 1.[10] In the model, new information arrives in the form of shocks, and these shocks play the role of the contingencies that, in Aristotle's terminology, cause the "difficulty of framing general rules" that may render "personal rule" preferable to laws.[11]

[9] There is a large literature on the link between institutions, economic performance, and factors that promote institutional change. See, e.g., Lipset (1959), Fernandez and Rodrik (1991), Barro (1997), Acemoglu and Robinson (2000, 2001, 2012), Fleck (2000), Boix (2003), Jack and Lagunoff (2006), Acemolgu, Johnson, Robinson, and Yared (2008, 2009), Falaschetti (2008), North and Weingast (1989), Justman and Gradstein (1999), Lizzeri and Persico (2004) and Llavador and Oxoby (2005). Focusing on ancient Greece, Fleck and Hanssen (2006, 2013a) consider how the potential for economic development led to the expansion (and at times contraction) of political rights, and how those changes in political rights in turn supported economic development. Also see Kaiser (2007), who analyzes the incentive structure of the way Athens funded the provisioning of warships. See Matsusaka (2005) on modern direct democracy.

[10] Scalia (1989), our source for the quotation, presents an interesting historical perspective on the rule of law. Also see Smith (2012), who provides an economic perspective on the way legal scholars interpret Aristotle. Hanssen (2004) examines a related tradeoff in the context of the optimal degree of judicial independence from the legislature.

[11] The way our model employs Aristotle's logic has parallels in the literature on the distinction between "legal" and "equitable" remedies – where equity in this context refers to the use of judicial discretion to undo the undesirable outcomes that would otherwise arise, at least on some occasions, from the application of laws as fixed rules. Smith's (2015) discussion is particularly relevant to ours, because he considers how the absence of perfect information affects the relative desirability of relying on law and/or equity.

To focus on how the tradeoffs involved in institutional design will affect the broad population, we start from the perspective of a behind-the-veil public – that is, an ex ante homogeneous set of individuals who will learn later who among them will favor majority or minority positions on specific policy issues. For simplicity, we consider a representative policy – denoted as policy i – and ask how the behind-the-veil public would choose a decision-making mechanism to be employed after the public is out from behind the veil.

We assume that the public can commit to a decision-making mechanism (i.e., commit to following a law or commit to rule by majority) but cannot commit to individual-level voting behavior on specific policy decisions. This makes most sense when a decision-making process (e.g., a set of constitutional rules) will be applied to many different types of future policy decisions. Of course, laws – and even constitutions – can be changed, but in a well-functioning legal system, that typically requires time. Although for simplicity our model treats laws as unchangeable, the logic of the model applies to the real world when changing a law requires a time-consuming (or otherwise costly) procedure or special exception during atypical circumstances (as in the case martial law).[12]

Definitions of Parameters and Variables

Let B_i represent the per capita net social benefits of undertaking policy i (with per capita net social benefits equal to zero if not undertaking policy i). Using Greek letters to denote exogenous parameters (all known behind the veil):

$$B_i = \mu + s$$

where

μ is the expected value of B_i; $\mu>0$

[12] See, e.g., Epstein et al. (2005) for a relevant analysis of court behavior during wartime.

s is a shock, distributed as: $P(s=\sigma) = P(s=-\sigma) = .5$ if $\sigma>0$; $s=0$ if $\sigma=0$; $\sigma\geq 0$

To introduce heterogeneity among the population, consider a homogeneous majority group (of size γ_{maj}) and a homogeneous minority group (of size γ_{min}). Let $B_{i,maj}$ and $B_{i,min}$ represent the per capita benefits among each group:

$B_{i,maj} = \mu + s + d$

$B_{i,min} = \mu + s - d(\gamma_{maj}/\gamma_{min})$

d is a shock, uniformly distributed from $-\delta$ to δ; $\delta\geq 0$

The two shocks (s and d) are drawn from independent distributions.

Information and the Order of Events

Each member of the public will act rationally, seeking to maximize his or her expected payoff. While behind the veil, the public chooses one of two (highly stylized) decision-making mechanisms: rule of law versus rule by majority. Under the rule of law, the behind-the-veil public must decide *irrevocably* whether or not to undertake policy i; in other words, the behind-the-veil decision regarding policy i will be treated as a law. Under rule by majority, the behind-the-veil public delays the decision on policy i until after the veil has been lifted. Lifting the veil reveals which members of the public will be in the majority, which will be in the minority, the value of s, and the value of d. Under rule by majority, each individual will vote to undertake policy i if and only if policy i benefits the individual.

A Useful Benchmark: The First-Best

As a starting point, consider the "first-best" results. In other words, what would the expected benefits be if the public, knowing s and d, set policy to maximize net benefits? The first-best decision rule is simple: Implement policy i if and only if $B_i>0$. Letting V_i represent the value of the policy decision, the first-best provides a useful benchmark for expected values:

$EV_{i,FB} = \mu$ if $\sigma<\mu$

$EV_{i,FB} = .5(\mu+\sigma)$ if $\mu<\sigma$

To see why, note that when $\sigma<\mu$, policy i always has positive benefits; thus, the first-best decision rule generates an expected value of μ. Yet when $\mu<\sigma$, policy i will have positive benefits when $s=\sigma$ (yielding $B_i=\mu+\sigma$) and negative benefits when $s=-\sigma$ (yielding $B_i=\mu-\sigma$); thus, the first-best decision rule generates expected benefits of $.5(\mu+\sigma)$.

When is a Law Inferior to the First-Best?

If relying on a law to set policy i, the outcome may turn out to be suboptimal, because the public remains behind the veil (and thus does not know the value of s) when deciding whether to implement policy i. Note that, conditional on choosing the rule of law, the public will always implement policy i; this follows directly from our assumption, made for notational convenience, that $\mu>0$.[13] Thus we have:

$EV_{i,RL} = \mu$

To see when the law will depart from the first-best, the key factor to consider is σ. Recall that with $\sigma<\mu$, we have $EV_{i,FB} = \mu$. Thus, when $\sigma<\mu$, the law yields the first-best outcome, and the reason is simple: If $B_i>0$ when the shock is negative (i.e., $s=-\sigma$), a rule that always implements policy i will maximize net benefits. The more interesting case, however, is when $\mu<\sigma$, because the sign of B_i will depend on s. In this case, the expected deadweight loss under the law is:

$E(DWL_{i,RL} \mid \mu<\sigma) = .5(\mu+\sigma) - \mu = .5(\sigma-\mu)$

To summarize:

> Implication 1: When employing a rule-of-law system requires policies to be set before the public knows the net benefits of those policies (i.e., before s has been revealed), the possibility of large shared shocks (i.e., σ large) reduces the performance of laws relative to the first-best.

[13] To consider a policy with a negative expected benefit, one can define "policy j" as "not policy i" and work through the model for policy j.

When is Rule by Majority Inferior to the First-Best?

Under rule by majority, policy can depart from the first-best because the sign of $B_{i,maj}$ (which may differ from the sign of B_i) determines the policy decision. The probability of the majority voting against the first-best outcome has two components: $P(B_{i,maj} \leq 0 \ \& \ B_i > 0)$ and $P(B_{i,maj} > 0 \ \& \ B_i < 0)$. Whether these probabilities take non-zero values depends on δ, which indicates the range of the shock (d) distributing net social benefits B_i among the population (i.e., the shock that causes the majority's policy preferences to differ from the minority's policy preferences). If $0 \leq \delta < (\mu-\sigma)$, then for either draw of s, $B_{i,maj} > 0$ and $B_i > 0$, yielding the first-best. Yet if $0 < (\mu-\sigma) < \delta$, a deadweight loss will arise with a positive probability: $P(B_{i,maj} < 0 \mid s=-\sigma) = [\delta-(\mu-\sigma)]/(2\delta)$, even though $B_i = \mu-\sigma > 0$ when $s=-\sigma$. This yields:

$$E(DWL_{i,RM} \mid 0<(\mu-\sigma)<\delta) = (\mu-\sigma)[\delta-(\mu-\sigma)]/(4\delta)$$

If $0<(\sigma-\mu)<\delta$ (in which case the sign of B_i depends on the draw of s), a deadweight loss will arise with a positive probability, for two reasons. First, high draws of d (i.e., d near δ) will yield $B_{i,maj} > 0$ even when $s=-\sigma$ yields $B_i < 0$. Specifically: $P(B_{i,maj} > 0 \mid s=-\sigma) = [\delta-(\sigma-\mu)]/(2\delta)$. Second, if δ is sufficiently large that $(\sigma+\mu)<\delta$, then low draws of d (i.e., d near $-\delta$) will yield $B_{i,maj} < 0$ even when $s=\sigma$ yields $B_i > 0$. Specifically: $P(B_{i,maj} < 0 \mid s=\sigma) = [\delta-(\sigma+\mu)]/(2\delta)$. This yields:

$$E[DWL_{i,RM} \mid 0<(\sigma-\mu)<\delta<(\sigma+\mu)] = (\sigma-\mu)[\delta-(\sigma-\mu)]/(4\delta)$$

when the only concern is the majority implementing a socially undesirable policy i, and

$$E[DWL_{i,RM} \mid 0<(\sigma-\mu)<(\sigma+\mu)<\delta] = (\sigma-\mu)[\delta-(\sigma-\mu)]/(4\delta) + (\sigma+\mu)[\delta-(\sigma+\mu)]/(4\delta)$$

when the majority may also block a socially desirable policy i.

In each of these cases, the expected deadweight loss increases if δ increases. Thus, we can summarize:

Implication 2: When employing a rule-by-majority system allows voters to make policy decisions after learning the policy's distributive effects (d), the majority may block first-best outcomes. The greater the potential amount by which the net benefits to the majority can differ from the net benefits to the minority (i.e., the greater δ), the worse the performance of a rule-by-majority system relative to the first-best.

Identifying the Second-Best: Laws Versus Rule by Majority

When the first-best is infeasible, the behind-the-veil public must assess the expected value of a law versus rule by majority. The relevant range of parameter values to consider is $0<(\sigma-\mu)<\delta$, because the expected deadweight loss will be positive with either system. Holding σ and μ constant: Values of δ sufficiently close to $(\sigma-\mu)$ will guarantee that $E(DWL_{i,RM}) < E(DWL_{i,RL})$; increasing δ causes $E(DWL_{i,RM})$ to increase and, for sufficiently high δ, to exceed $E(DWL_{i,RL})$.[14] To summarize:

Implication 3: When the first-best is infeasible, the second-best depends on the degree to which distributional shocks (d) will distort the majority's policy decisions away from socially optimal decisions. When the range of distributional shocks is sufficiently small (i.e., δ sufficiently small), the expected deadweight loss from rule by majority will be smaller than the expected deadweight loss from a law, because the majority will rarely make socially suboptimal decisions. Yet a sufficient increase in the range of distributional shocks (i.e., a sufficient increase in δ) will render rule by majority inferior to a law.

III. Institutional Design and Redesign in Ancient Athens

In this section, we will apply the model to ancient Athens. First, we will consider why the Athenians established an unconstrained democracy ("rule by majority") in the 5th century. We will argue that because 5th century Athens headed a tribute-paying empire, credible commitment mattered less than the ability to react to new information. In the terminology of the model, suboptimal policy resulting from distributional shocks would have produced only small

[14] More formally, with $0<(\sigma-\mu)<\delta$, changes in δ (holding σ and μ constant) work as follows. As $\delta\rightarrow(\sigma-\mu)$, $E(DWL_{i,RM})\rightarrow 0$; as δ increases, $E(DWL_{i,RM})$ increases monotonically; as $\delta\rightarrow\infty$, $E(DWL_{i,RM})\rightarrow .5\sigma$. Because $E(DWL_{i,RL})=.5(\sigma-\mu)$, the effects of δ on $E(DWL_{i,RM})$ indicate that increasing δ from low to high values will cause a switch from the rule of law being second-best to rule by majority being second-best.

losses (δ was small in value), while an inability to revise policies in response to new information would have caused large losses (σ was large in value). Rule by majority was thus preferable. Second, we will consider why, in the 4th century, after losing its empire, the Assembly chose to constrain itself (establish a rule of law). We will propose that loss of empire rendered credible commitment to contracts and treaties much more important (indeed, essential) to Athens' success. It therefore followed that the costs of allowing the majority unconstrained control of policy exceeded the benefits. In the terminology of the model, distributional shocks leading to suboptimal policy would have caused large expected losses, because δ was large in value. Rule of law replaced rule by majority.

Athens as Head of an Empire

From 478 to 404 BCE, Athens headed an empire, the Delian League. The Delian League was founded initially as an anti-Persian naval alliance – Persia conquered a number of Greek *poleis* in the eastern Aegean in the 6th and 5th centuries, and invaded mainland Greece twice in the early 5th century.[15] After the Greeks defeated Persia for a second time, the Persian threat remained largely quiescent for a century or more, and the League's policy turned toward the combatting of piracy in order to protect trade networks.[16] Member states were given a choice

[15] The Greek world at the time extended from as far west as Spain to as far east as the shores of the Black Sea. Many of the *poleis* to the east of Athens – in particular, those located on Aegean islands and the Anatolian coast – fell under the rule of the Persians in the mid-6th century BCE. In 499 BCE, a number of them revolted, aided by Athens and several other mainland Greek *poleis*. The revolt failed and the two famous Persian invasions of the Greek mainland were launched in retaliation. The Greeks twice repelled the Persians, who never again attempted to invade the Greek mainland. However, the Persians remained a threat to the eastern *poleis*, who formed a defensive alliance in response, placing themselves under the command of Athens and its powerful navy. The alliance was named the Delian League, after the sacred island of Delos in the Aegean. More than 300 *poleis* joined the Delian League (see Hansen and Nielsen 2004 for a list). Thucydides (1.99) writes, "the Athenian navy grew strong at the cities' expense, and when they revolted they always found themselves inadequately armed and inexperienced in war" (quoted in Morris 2005, 40); Parker (2009) and Raaflaub (2009) argue that the League was always an empire.

[16] Meiggs (1973, 267) writes, "Aegean trade needed a strong fleet to suppress piracy and the sea lanes were probably more secure during the period of Athenian empire than at any other time in the ancient world except perhaps during the first two centuries of the Roman Empire." The Athenian navy became,

between supplying the alliance with ships and men or with cash, and most chose to pay cash. Because Athens provided virtually all the ships and sailors used by the League, it kept all the tribute. Xenophon (*Anabasis*, 7.1.27) estimates that tribute flows brought Athens 1000 talents annually (between 10 and 20 percent of the total wealth held in Athens).[17] Athens was able to build up a substantial surplus; the League treasury contained 6000 talents when it was relocated from Delos to Athens in 454 BCE.[18]

What made δ small and σ big?

As the model illustrates, the performance of a rule-by-majority system depends importantly on δ, which indexes the degree to which distributional shocks cause the majority's policy preferences to differ from those of the minority. To understand why Athens faced circumstances analogous to having a small value of δ, two historical factors are essential. First, Athens used tribute revenues to establish a system that benefitted a broad cross-section of citizens, including the class of poorer citizens known as *thetes*, who probably comprised the majority of Athenian citizens (Ober 2015; Rosivach 1985). As Morris (2005, 40) explains,

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in essence, the Aegean's police force. Few *poleis* had even small navies; none but Athens had a navy anywhere near the size of the Athenian fleet. Athens had made a fateful decision to build ships with the proceeds from an unanticipatedly massive silver strike at its mines at Laurium in 483 BCE. Herodotus says that it had been originally proposed to distribute to the silver citizens at 10 drachmas per head, but Themistocles convinced Assembly to vote to use to build triremes instead. See Meiggs (1972, 37). The result was that by 480 BCE (in time for the famous naval battle at Salamis), Athens had 200 new triremes, as compared to probably less than 100 ships (including more primitive penteconters) two decades earlier. "No Greek state could match this fleet and it proved to be the backbone of the combined navy in 480 at Artemisium and Salamis" (Morris, 2005, 37). The largest states in the Delian League – Chios, Lesbos, and Samos – contributed ships and men initially instead of tribute; however, the fleets were disbanded after failed revolts (by Samos in 439, by Lesbos in 427, and by Chios in 412), from which point onwards each contributed tribute in addition to paying reparations.

[17] Morris (2005, 2). Meiggs (1972, 256-7) provides three comparisons intended to put the tribute received by Athens in context. First, the right to collect a two percent import duty at Athens' principal harbor (Piraeus) sold in the year 399 BCE for 30 talents and generated profit of 6, suggesting 1800 talents worth of goods entered the harbor that year. Second, the first special tax on wealth to aid the war effort (*eisphora*), imposed in 428 BCE, generated 200 talents, suggesting the existence of 10,000 talents of private capital. Third, a 377 BCE census valued total privately held wealth at 6000 talents.

[18] A peacetime navy was maintained at an estimated annual cost of about 480 talents (Hale 2009, 127).

"Most of the tribute ended up in the pockets of the poorer Athenian citizens."[19] Rhodes (2013, 228) writes, ". . . although these payments were not focused specifically on the poor (as in modern states many welfare payments and other benefits are not means-tested) the overall result was a considerable transfer of funds to the poorer citizens."

Second, not only were the benefits of empire widely distributed; so were the costs: Athens went to great lengths to ensure that the burden of maintaining an empire (primarily the cost of the navy) were shared by a very broad segment of the population (e.g., Fleck and Hanssen 2016). Very importantly, the navy's rowers were drawn from among Athens' poorer citizens, the landless *thetes*. The *thetes* comprised a majority of the Athenian citizenry.[20] As a result, the median Assembly voter both bore a large share of the costs of military operations (as a rower), and stood to reap a share of the benefits (in pay and booty) *if and only if* those operations were successful. Put another way, this meant that the sign of $B_{i,maj}$ (net benefits to the majority) would likely match the sign of B_i (net benefits to the c/itizenry as a whole).

The empire also served to increase σ, the informational shock. What threatened the empire threatened how Athenians lived, from the rich down to the poor. Perhaps the two most obvious potential threats were an attack by Persia (the Delian League's original *raison d'etre*) and the secession of *poleis* from the League. Note that some member states *did* attempt to leave the alliance, and in each instance, Athens put down the attempt.[21] But being in the position to

[19] Athens linked tribute-derived payments to a variety of empire-supporting activities, most importantly the operation of the navy. Tribute flows were also used to fund public works, such as the building of the Parthenon (Meiggs 1972, 258; Rhodes 2007, 30).

[20] The *thetes* may have accounted for as much as two-thirds of the citizen body (Ober 2015; Rosivach 1985).

[21] By the 460s at the latest, member *poleis* were not permitted to exit the alliance, and Athens punished attempts to do so harshly, destroying navies, confiscating land, and requiring reparation payments. Rhodes (2007, 36) writes, "From Naxos in the League's early years to various states in the last phase of the Peloponnesian war, including states on the Asiatic mainland . . . we can construct a substantial list of

repel attacks and to ensure compliance from roughly 200 tribute-paying member states required making rapid decisions regarding use of the military and the management of risks. Making such decisions via any time-consuming process, including adherence to a rule of law, would have been undesirable. To borrow Aristotle's wording, "framing general rules" was not the best option, given the inevitability of so many unforeseeable contingencies, including war, revolt, and insubordination by League members.

In sum, as a result of the way that Athenians shared the benefits derived from the empire and the costs of maintaining the flow of those benefits, the majority of Athenians had good incentives to use new information to make decisions that, in essence, maximized the net benefits going to Athens. This created circumstances analogous to having small values of δ and large values of σ for the most important policy issues. The model thus predicts that Athenians would rely heavily on rule by majority to set policy for their empire, and indeed they did.

Establishing "Radical" Democracy in the 5th Century

Athens therefore established largely unconstrained rule by the Assembly – "radical democracy" as both ancient and modern commentators have termed it.[22] Starr (1990, 15) points out that the institutional devlopments championed first by Kleisthenes and then by Ephialtes ensured that "the ultimate power of political decision [was] in the hands of the assembly." Assembly decisions were not subject to review by any other political body – nor should they be, said adherents, since the Assembly was the actual, living voice of the citizenry. As Hansen

revolts." At the outbreak of the Peloponnesian War, Sparta had substantial support among Greek states that disapproved of Athens' "tyranny" towards its "allies."

[22] The unconstrained nature of Athenian democracy is epitomized by the famous phrase directed at Socrates as Speaker of the Assembly during the famous Trial of the Generals (discussed later): "It is shocking not to let the assembly do as it wishes." Recall that throughout both the 5th and 4th centuries (i.e., the Classical period), Athens was a direct democracy: All citizens belong to the Assembly (*ekklesia*).

(1999, 130) writes, "Decrees of the Assembly were treated in principle as decisions of the entire Athenian people." Hansen (1999, 174) described mid-5th century Athens as follows:

> [T]he assembly had more and more frequently used its increased power to legislate, and the traditional sense of the priority of the laws had given way to a sense that the people in their assembly were the highest power in the state.

The system allowed Athenians to "change their minds," a behavior of which they were proud. Schwartzberg (2004, 311) writes:

> Ancient Athenians regarded the capacity to change laws, and, generally, to confront contingency with new institutional solutions, as a defining characteristic of their democracy. The Athenians' ability to respond to problems by modifying their laws was a source of pride, and was widely known throughout the Greek world.

It was not merely the Assembly's lack of constraints that made the Athenian democracy so radical – it was the fact that all Athenian males, whether wealthy or poor, landed or landless, had equal rights to sit on the Assembly, to hold public office, to serve on juries, and so forth. We discussed earlier in this paper the crucial role played by the landless laborers who rowed Athens' ships – the *thetes*. As rowers, the *thetes* bore the much of the costs of naval engagement, and through tribute-financed payments (supplemented by shares of booty) received much of the benefits. This, combined with their presence in the Assembly, ensured that δ (distributional shocks) remained small. The full enfranchisement of landless citizens was unique to Athens; in most of ancient Greece, wealth requirements for office holding (and sometimes for voting) were the norm. Indeed, it was not until the empire period that the *thetes* were fully enfranchised even in Athens.[23] But the Athenian system depended on a fully enfranchised naval force, and the *thetes* were the rowers.

[23] Thetes were enfranchised as part of the reforms that occurred under Kleisthenes, who became archon (magistrate) in 507 BCE. (See Appendix A for a more detailed discussion.) Prior to Kleisthenes, *thetes* could attend assembly meetings, but were not allowed to speak; they were also limited in the public offices they could hold. By the mid-5th century, *all* Athenians, *thetes* included, enjoyed equal political rights.

Athens rule-by-majority democracy – the vesting of near complete power in its Assembly – was no mere historical quirk: Scholars dating back to Thucydides have argued that Athens' radical democracy developed in direct response to the needs of empire.[24] As our model illustrates, although an extreme "rule by majority" system of the type Athens employed has advantages (because it allows adjustment to new information), it also has disadvantages. Permitting unconstrained Assembly decisions made it difficult for Athens to commit to promises and policies, and this presumably reduced contracting, and hence exchange.[25] To some degree, Athens was able to use its position as head of the empire to compel what it would later have to attract through competition. For example, when it led its empire, Athens mandated that all commercial disputes be litigated in Athens' port. But the power to compel ended with the empire. Henceforth, Athens would have to compete – notably through the quality of its commerce-supporting institutions – if it sought to attract commerce.

After Losing the Empire: Athens as a Center of Commerce

Athens' recovery from its defeat in the Peloponnesian War required both the rebuilding of its capital stock and the restructuring of its institutions.[26] Sparta dissolved Athens' empire,

[24] Galpin (1984, 101, 107) writes that "the 'radical' democracy of Athens during the fifth century B.C. required imperialism for both ideological fulfillment and the establishment of certain characteristic institutions. . . . Perhaps more relevant to the relationship between democratic values and imperialism was the Athenians' perception that the empire was necessary to bring the democracy to fulfillment. The progressive completion of democratic institutions was simultaneous with the development of an extensive system for the distribution of public funds." Morris (2005) argues that the Empire accelerated Athenian state formation; "Athens expanded its democratic system in part by drawing on the *phoros* [tribute] paid by the subject cities."

[25] Athenians were aware of this and sought other, albeit imperfect, means of remedy; see, e.g., Schwartzberg (2004) for a discussion.

[26] Nearly continually from 429 BCE onwards, Athens was at war with rival Sparta in the Peloponnesian War. After Athens' final surrender in 404, Sparta installed a new Athenian government, run by a council of 30 men; these became known as the Thirty Tyrants. A period of terror and confiscation followed. Exiled Athenians massed on surrounding hillsides, and retook the city in 403 and restored democracy. Although we focus on the way Athenians designed post-war institutions to constrain the pre-war "radical" democracy, we should note that the war itself had inspired efforts to impose constraints on the Assembly. Indeed, the Athenian Assembly to vote twice to reconstitute the government on less democratic lines. In

destroyed Athens' fleet, and had the "long walls" that connected Athens' ports to its city demolished. What remained, however, gave Athens an enormous comparative advantage in developing itself as a center of seagoing trade and other commerce: its huge harbors, its commercial contacts, and the human capital necessary to run a navy. Thus, after throwing off a Spartan-installed government – "the Thirty (Tyrants)" – Athens was able to rebuild its fleet and reclaim its status as Greece's predominant commercial power. By the mid-4th century, Athens was as wealthy as it had been during its empire period. This would not have been possible if Athens had not changed its institutions.

δ Larger After Athens Lost its Empire

Recall that the flow of tribute from the empire had provided a source of funding for the navy, and the way Athens allocated tribute ensured that a very broad segment of the Athenian citizenry shared the benefits of using the navy wisely and, more generally, of managing the empire in a manner that maximized the net benefits to Athenians as a whole. Thus, when losing the flow of tribute, Athens lost more than just a major revenue source; it lost a critical mechanism for keeping δ small. As Athens turned to taxes on trade and wealth as sources of public revenues, a fundamental challenge was to do so in a manner that did not deter the productive activities that generated the trade and wealth in the first place. As is familiar to citizens of modern democracies, committing to stable, moderate tax rates can be difficult,

413 BCE, the Assembly delegated substantial decision authority to the newly created *probouloi*, a committee of ten older men (one of whom was the playwright Sophocles). In 411 BCE, the Assembly went further still, and voted itself out of existence, placing management of the state in the hands of a new Council of 400. The expectation was that it would give way to a larger body of 5000, roughly the hoplite citizenry. The return of the navy the following year resulted in the temporary restoration of Assembly-led democracy. See e.g., Pomeroy et al (1999, 311-5), Hansen (1999, 40) for detail.

because voters' incentives will diverge – and thus δ will often be large – when the issue is choosing tax rates for different types of activities and individuals.[27]

To understand the importance of commerce-supporting policies, it is essential to recognize that, despite Athens' natural harbor and central location, it was far from inevitable that Athens would become Greece's commercial powerhouse. Indeed, in the late 6th century BCE, Athens was engaged in fierce struggle for *local* commercial preeminence with the neighboring – and relatively small – *polis* of Aegina (e.g., Meiggs 1972, 98; Raaflaub 2007, 102-3). Economic competition with other *poleis* meant that Athens' commercial success depended on how well its institutions supported voluntary transacting among peoples from around the Mediterranean. If merchants believed there to be much risk of the Athenian Assembly reversing commerce-supporting policies, they could do their business elsewhere. This put Athens in a position much like that of modern democracies that rely on mechanisms – including the rule of law – to commit credibly to policies that support productive activities.[28] The benefits to Athens from constraining its Assembly had increased.

Constraining the Assembly

For understanding the process through which the Athenian Assembly imposed constraints on itself, the relevant starting point is the Laws of Solon – a legal code nominally authored by a famous 6th century Athenian statesman.[29] Through the late 5th century, Athenian jurisprudence

[27] Indeed, one of the standard illustrations of time-inconsistency problems is that while voters may desire ex ante to commit to low taxes on investment income (thereby encouraging investment), those same voters may desire ex post (i.e., after investments have been sunk) to tax investment income at a high rate. For a relevant paper on Athens, see McCannon (2012).

[28] For more on the similarities (and differences) between Athens and modern wealthy democracies, see Ober (2010, 2015).

[29] Not all are presumed to have dated from Solon: "Laws of Solon" was a general term referring to long-lived laws. Athens' first formal law code is attributed to Draco, who was elected archon 621 BCE (a hint of the severity of his code survives in the word "Draconian"). About three decades later, much of Draco's code was superseded by the new law code authored by Solon, who was elected archon in 594 BCE.

continued to be based on largely on the Solonian code, but although the code was ostensibly respected, it was nowhere recorded systematically, and little attempt was made to ensure that Assembly decisions conformed to it. Indeed, there was no procedure for forcing the Assembly to obey even its own rules.[30] Furthermore, the Solonian code involved *solely* issues of private and criminal law, and legal procedure. Nothing in the laws of Solon addressed limits on the powers of the state.[31]

In the late 5th century, Athens launched a process of revision, ratification, and codification of its laws, with the objective of establishing a single legal code. The laws of Solon written down in this process were termed *nomoi*, or "fundamental laws." They were intended to supersede and govern any subsequent acts by the Assembly, which were termed *psephisma*, or "decrees." Decrees generally dealt with specific issues – funding a given infrastructure project, awarding citizenship to a particular resident alien, rewarding a particular general. But the "law" (*nomos*) was to govern what types of decrees could be issued, and in what manner the decrees could be applied. This distinction between laws and decrees had been articulated earlier in Athenian history (for example, in Pericles' famous funeral oration), but until the end of the 5th

[30] Individuals could be sued in court for proposing "unconstitutional acts," but since what was constitutional and what was not was not well defined (see what follows), the court challenges degenerated into political jousting matches.

[31] By the time of Solon, the Popular Assembly had gained a role in public life; however; it was a very much restricted role – Ober (1996, 38) writes that the political institutions established by Solon were "still quite rudimentary, and were still dominated by the elite." In addition, Solon created the Council of 400, whose function was to screen business coming before the Assembly (membership consisted of 100 men chosen from each of the four traditional Athenian tribes). Solon is also credited with the creation of the system of law courts – the *heliaea* – on which all citizens over age 30 could sit. See, e.g., Starr (1990, 9) for detail. Solon's rule was followed by disputes among elite factions that culminated in the establishment of the tyrant Pisistratus. "Tyrant" originally meant "ruler" rather than "despot," and Pisistratus was not especially tyrannical in the modern sense of the word, and left Solon's institutions intact. (In fact, his reign was a time of economic growth, and his rule may have increased the likelihood the Athens would make a successful transition to democracy – see Fleck and Hanssen 2013.)

century, had not rested on a formal base.[32] The new laws specified not only expectations regarding individual behavior, but the rules under which political bodies were expected to operate. Thus, it could be argued that the Athenian legal code became a de facto written constitution.[33]

Of course, for a constitution to govern, it must be enforced. In Athens, this meant that the Assembly had to give up the right and ability to alter *nomoi* (fundamental laws) easily or capriciously; furthermore, a process had to be established to reconcile Assembly actions with existing *nomoi*, and to ensure that those who interpreted and applied *nomoi* did so properly. Thus, Athenians did the following three things (see Appendix B for a more detailed description). First, they established a new body charged specifically with scrutinizing the laws and approving changes in the law; this was the *nomothetai* (literally, the "layers down of the law"). Second, they established a new public action whereby any citizen could challenge those in the Assembly who proposed new laws that ran counter to existing *nomoi*: the *graphe nomon me epitedeion theinai*, or "public action for having proposed and carried out an unsuitable law." Athens also adapted an existing procedure and focused it on prosecuting the proposers of "unconstitutional"

[32] For all practical purposes, the terms *nomoi* and *psephisma* were used indiscriminately before the reforms of 403 BC. Kleisthenes' laws had been called *nomoi*, presumably with the intention of distinguishing them from the earlier laws of Solon and Draco, which were called *thesmos* (something "laid down"). *Psephisma* refers to decision taken by means of *psephoi*, or pebble, which apparently were used for voting in the Assembly early in the 5th century – see Hansen (1999, 161). However, the later clear distinction between *nomoi* (laws) and *psephisma* (decrees) is evident in this passage from the orator Andokides (400/399 BC), "No decree [*psephisma*] passed by the Assembly or the people may have higher validity than a law [*nomos*]. No law [*nomos*] may be passed that applies only to a single person. The same law [*nomos*] shall apply to all Athenians, unless otherwise decided [in a meeting of the Assembly] with a quorum of 6000, by secret ballot." Quoted in Hansen (1999, 170). The collection and ratification (or rejection) of the new laws were entrusted to two separate bodies; membership of the first chosen by the Council of 500, and of the second by the *demes*. The Assembly played no direct role in the process, other than setting it in motion.

[33] See, e.g., Otswald (1986), Hansen (1999), Harris (2006). On the similarities between the Athenian system and modern judicial checks on majoritarian decisions, see Lanni (2009) on judicial review and Lanni and Vermeule (2013) on "precautionary constitutionalism" as a mechanism Athens used in an effort – sometimes but not always successful – to avoid undesirable collective choice outcomes.

decrees. Third, Athenians empowered an existing institution to oversee the application of the law: the Areopagus, whose powers had been circumscribed in the 5th century as part of the movement towards unconstrained Assembly decision making.

To summarize: After removing checks on the Assembly in the 5th century, Athens established checks on the Assembly in the 4th century. The reason, we suggest, is that 4th century Athens – a commercial center where people from around the Mediterranean signed and sought enforcement of complex contracts – faced circumstances analogous to those created by a large value of δ.

Did the Assembly Succeed in Constraining Itself?

In view of the fact that Athens remained a direct democracy, and thus in principle the Assembly could have undone any constraints it imposed on itself, a natural question to ask is whether the counter-majoritarian checks described above actually mattered in practice. Although few of the relevant records have survived, the evidence that exists does suggest that those checks brought fundamental changes.[34] In particular, we will discuss three very famous legal cases: one from the 5th century and two from the 4th century.

The best known example of the 5th century Assembly allowing a majority to set whatever policies it wanted – and in doing so override previous policies – was the "Trial of the Generals." In 406 BCE, eight generals commanding newly commissioned ships with inexperienced crews won an important and unexpected victory over the Spartans near the island of Lesbos. However, the Assembly became angry when messengers reported that the generals had failed to retrieve survivors (and corpses) from the water – bad weather threatening the ships was the reason given

[34] The historical records from the Assembly (such as what laws and acts were passed) are insufficient to allow a systematic analysis of changes brought about by the establishment of new rules impossible. That said, classicists have identified 488 Assembly decrees (*psephisma*) passed in 4th century Athens, while fining only seven new fundamental laws (*nomoi*). See Hansen (1999).

for departing from standard practice. The generals were ordered home (two of them fled; the other six returned to Athens), and the Assembly debated the proper venue for a trial. After a recess at which the deceased were commemorated, the Assembly reconvened in an angry mood. It was proposed that rather than try the generals (who had been imprisoned), the Assembly simply vote on whether to execute them as a group. When a relative of one of the generals protested that the vote would be unconstitutional (a right to individual trial was ordained by law), he, himself, was threatened with execution. The philosopher Socrates was serving as chairman of the Assembly on that day (citizens were chosen for this duty by lot); when he refused to bring the motion for execution to a vote, saying he would not engage in an act that was contrary to the law, he was shouted down with the phrase, now famous (Starr 1990, 47): "It is shocking not to let the people do whatever they wish." In the end, a vote was taken and the execution of the imprisoned six was approved and carried out.[35]

Contrast that story with the following 4th century accounts. In 348, a member of the Athenian council named Apollodoros proposed that certain funds be assigned for a military use despite the fact the funds had been allocated for a different purpose. The justification that Apollodoros offered was that "the *demos* [people] should be free to do whatever it wished with its own money." (An echo of the famous response to Socrates at the Trial of the General is clearly heard.) The Assembly passed the motion, but a rival prosecuted Apollodoros under a *graphe paranomon* – the charge of introducing in the Assembly a decree that is in violation of the law. The court upheld the charge, and Apollodoros was sentenced to pay a fine of one talent.[36] Another 4th century example involves the famous statesman Demosthenes. In 323 BCE,

[35] Hansen (1999, 41) writes, "The Trial of the Generals was cited by contemporaries as evidence that assembly democracy [radical democracy] was a bad form of government."
[36] For details on both cases, see, e.g., Sealey (2007, 253-4).

a court found Demosthenes guilty of accepting a bribe and sentenced him to pay a fine of 50 talents; Demosthenes, unable to pay, fled into exile. Facing troubles abroad, the Assembly sought to recall him to seek his advice, but found itself unable to act against a court decision. Instead, the Assembly voted to allocate fifty talents to Demosthenes, so that he might pay the fine.

These cases show that, by writing down laws and establishing other counter-majoritarian checks, the Athenians brought about a fundamental change. They were not merely formalizing preexisting norms. Nor were they merely promising – in writing – to follow laws that they would later ignore. In sum, the Athenians established a rule-of-law system that enhanced the Athenian government's ability to commit to what it would do in the future.

IV. Further Evidence: Other Actions Taken to Establish Credible Commitment

Further evidence that Athens' sought to constrain the Assembly in order to promote its ability to commit to promises is available in the form of other costly actions that Athens undertook at the same time. Athens did three things in the late 5th century (concurrent with the development of its new rule-of-law institutions): 1) repaid debts run up by the temporary Spartan-imposed government, 2) undid the debasement of its currency engaged in during the war years, and 3) established procedures whereby, in commercial disputes, Athenians and non-Athenians litigated on equal legal footing.

Scholars who study modern efforts to establish credible pro-growth policies will find Athens' actions first two actions very familiar. Note that in the modern literature on time-consistency problems, the repayment of debts and the stability of currencies are two of the standard illustrations: Borrowers can benefit from committing ex ante to repay loans, but may ex

post prefer to renege; similarly, when issuing a currency (e.g., "printing money"), a country can benefit by committing ex ante to non-inflationary policy, but may ex post prefer to let inflation roar.

First, the Athenians agreed to honor the state debts run up by the Spartan-imposed regime of "the Thirty Tyrants," that ruled briefly after Sparta's defeat of Athens in the Peloponnesian War. The Thirty had confiscated Athenian property and killed as much as five percent of the Athenian citizen body. By no stretch of the imagination was this a lawful government, and the Athenians united to overthrow it – the regime lasted only 13 months. Yet rather than refusing payment on the grounds that the debt had been undertaken illegitimately, Athens agreed to repay all the money the Thirty had borrowed.[37] Athens thus provided a very strong signal that it would stick to its agreements in the future.

Second, the Athenian silver coin, the owl, had been the region's de facto currency during most of Athens' empire period, but the financial pressures of warfare had led Athenians to debase (plate) their currency. In the post-war years, Athens withdrew the plated coins from circulation, and instituted aggressive measures (such as market inspectors) to ensure the soundness of its coinage. Note that this decision, like the decision to repay the Thirty's debts, was majoritarian, rather than required by a rule of law, but they complement the rule of law: The Assembly's actions signal a willingness to honor commitments even if, ex post, doing so turned out to be costly to voters (and beneficial to foreigners). Such actions are what we expect from well-functioning, rule-of-law states, whether ancient or modern.

Third, Athenians took steps to ensure that all parties to contracts had formal mechanisms to adjudicate disputes over contracts and by establishing institutions to reduce the costs of

[37] See, e.g., Ober (2008). On the way the Athenians employed their legal system in their recovery from the rule of the Thirty Tyrants, see Lanni (2010).

adjudication. Very importantly, Athens expanded the scope of its commercial law code so that resident foreigners (*metics*), and perhaps even slaves, could litigate contracts on equal legal footing with Athenian citizens. This mattered greatly because Athens' commercial courts litigated contracts of extraordinary complexity involving long distance trade and risk-sharing.[38] Furthermore, Athens empowered new financial officers, who were charged with overseeing the application of standardized weights and measures, thereby reducing the cost of transacting. The 4th century also saw a sharp increase in special grants (*enktesis*) allowing non-citizens to own real estate, and "Some foreigners active in overseas trade were granted full citizenship" (Ober 2008, 68).

The emphasis Athenians put on adherence to contracts is demonstrated in the following speech by a litigant in a commercial dispute, appealing to a jury of several hundred men:

> Do not ignore the fact that by resolving one dispute you are passing a law for the entire port of Athens. Many of the men who have chosen to engage in overseas trade are watching you to see how you will decide this case. If you think that written contracts and agreements between partners should be binding and you will not take the side of those who break them, those involved in lending will more readily make their assets available. As a result, the port will thrive, and you will benefit."[39]

This statement would serve well to illustrate the view – now standard in economics and positive political economy – that establishing a credible commitment to growth-enhancing rules can

[38] Cohen (2005, 298) writes of a particular commercial arrangement involving seaborne trade: "The vessel used for this transaction [traveling from Athens to Crimea] carried numerous merchants and agents pursuing their own separate undertakings: retainers of a certain Apollonides of Halikarnassos, a 'partner in the ship', were on board; a loan had been made to the ship operator secured by the vessel and by goods being transported to the Pontos; freight was being carried from Pantikapaion to Theodosia (in the Crimea) under arrangements unrelated to the loan. . . . So disparate were the transactions that in addition to crew members, eight other persons offered depositions concerning cargo transported from Mende to the Pontic, relating to other goods on board when the vessel was sailing along the Crimean coastline, and mentioning various financial arrangements covering diverse freight. The preserved contract clearly anticipates multiple cargos independently owned . . . To keep track of these multitudinous obligations, Greek ship operators (*naukleroi*) are known to have carried numerous written documents."

[39] Quoted in Harris (2006, 143).

provide an institutional cornerstone for economic development. And this makes perfect sense in the context of our model: After the loss of empire made long run success dependent on committing ex ante to policies that a majority – whether in the Assembly or court – might prefer ex post to reverse, Athenians thrived by using the rule of law to rein-in their own future ability to change policies and rules.

V. Conclusion

The Athenians designed institutions so as to establish a system of unchecked rule by the Assembly, and then redesigned institutions so as to place checks on the Assembly, producing a system bearing a strong resemblance to a modern rule of law. As our model shows, the design and redesign of Athenian institutions make sense as rational responses to changes in economic opportunities – changes brought about, first, when Athens became the leader of an empire and, later, when Athens lost its empire. Managing the empire made a rule-by-majority system desirable, because it enabled the majority to respond to new information, and the majority's decisions would typically match the interests of the broader citizenry. Once the empire had been lost, a rule-of-law system was desirable, because the wealth that Athens generated as a commercial center required a commitment to policies that future majorities might prefer to reverse.

The model and historical narrative presented in this paper offer several lessons for the modern world. Perhaps the most fundamental point is that operating under the rule of law has costs as well as benefits. Research on modern countries has found a strong positive relationship between rule-of-law institutions and per capita income. Indeed, rule-of-law measures have been used to proxy for "good" institutions (e.g., Rodrik et al 2004) – and that is for good reason.

Indeed, using the rule of law as a proxy for good institutions would be appropriate in the case of 4th century Athens, because the rule-of-law period generated enormous wealth from mutually beneficial, voluntary transactions. Nevertheless, establishing the rule of law necessarily required the imposition of constraints on the Athenian Assembly's ability to change policy – and such constraints may preclude first-best outcomes.

Might similar tradeoffs matter today? As a thought experiment, consider the plight of modern Greece. Recall that when ancient Athenians set out to rebuild after being defeated by Sparta, they chose (i) to repay Athens' debts, including what the Spartan-installed regime had borrowed, and (ii) to accept silver-plated Athenian coins at face value. Those actions were costly but valuable, because Athenians had much to gain by committing to commerce-supporting policies. In those circumstances, it made good sense for Athenians to employ mechanisms, including the rule of law, to increase the cost of walking away from debt. Modern Greece has also employed mechanisms that increase the cost of walking away from debt; notably, Greece joined the European Union and the Eurozone. Perhaps that was a good idea at the time: Had the shared shock (σ) in the following years been positive – say a worldwide economic boom combined with effective Greek leadership – by choosing to constrain their own ability to set future repayment and monetary policies, the Greeks might have encouraged investment and economic development. Yet reality corresponded to a negative shock – the Great Recession combined with corrupt (or at best inept) Greek leadership – and Greece has no easy way to exit its ongoing debt crisis. There is, of course, no way of knowing how alternative institutional designs would have played out, but suppose that Greece had established a rule-by-majority system in which the repayment of public debts remained conditional on the electorate favoring repayment. By doing so, Greece would have reduced its access to cheap credit, but it would

have retained the ability to adjust to shocks – including the ability to reduce debt by legislative action or by inflating the drachma. In other words, the institutional choice for modern Greece involved a tradeoff, as it did for ancient Athens.

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Appendix A
Institutional Changes in the Transition to Radical Democracy

Credit for establishing Athens' first democracy typically goes to Kleisthenes, who became archon (magistrate) in 507 BCE and implemented the first of two major democratic reforms.[40] Kleisthenes began by replacing the traditional structure of four tribes, on which policymaking was based, with a structure based on ten newly constituted units, each of which consisted of three districts (*trittyes*), one in the city and two in rural areas (these districts might be contiguous but were usually separated by some distance).[41] Kleisthenes also replaced the oligarchic Council of 400 (which prepared the agenda for the Assembly) with the more democratic Council of 500, whose membership was drawn equally from the ten new tribes.[42] Starr (1990, 14) writes that these changes served to weaken "old geographical blocks, cult groups, and local control by well-to-do."

The only remaining body with power largely independent of the Assembly was the Areopagus, which saw its responsibilities sharply curtailed several decades later in a second set of democratic reforms, this led by Ephialtes and Pericles in the mid-5th century.[43] The

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[40] Kleisthenes referred to his reforms as *isonomia* ("equality before the law") rather than democracy ("rule by the people"); see, e.g., Starr (1990, 13). Kleithenes's democracy was preceded by rule by the tyrant Pisistratus and his sons.

[41] The *demes* were geographic units, but membership in a *deme* did not change regardless of where a family chose to live subsequently. Each *tritty* was composed of one or more *demes*, normally preexisting villages in the Attic countryside (by the 4th century, there were about 140 *demes*). Hansen (1999, 47) states that it is "still universally believed" that Kleisthenes created 139 *demes*. From that point forward, it was inscription in the *deme* that established a man's citizenship, and thus his ability to engage in policymaking, rendering the *deme* an important unit of local government; see Hansen (1999, 96). Major political offices were filled in equal proportions from the *demes*. Furthermore, when Pericles tightened up the rules for Athenian citizenship, the mother's ancestry became an issue as well – she had to be the daughter of an Athenian citizen. It fell to the *deme* assemblies to certify the citizenship of each young man when he reached the age of 18 and was brought forward by his father or guardian. Any member of the *deme* assembly had the right to object, and the whole assembly voted. See Hansen (1999, 96).

[42] The Council of 500 prepared an agenda for each meeting of the Assembly; the Assembly was required to discuss and decide only matters listed on this agenda. Hansen (1999, 138) writes "The rule *meden aprobouleuton*, 'nothing without a *probouleuma*' [a preliminary decree issued by the Council when adding an item to the Assembly's agenda], seems to have been a fundamental principle of Athenian democracy." That said, the Council often placed open, rather than specific, *probouleuma* on the agenda, so that the Assembly meetings could begin with the simple agenda item, "Who wishes to speak?" Indeed, after the reforms of 403, any mention of the Council was dropped from the text of decrees, which would begin with the phrase "The people have decided" rather than the 5th century phrase, "The people and the council have decided" (see Hansen 1999, 139-40). Hansen continues, "Certainly the Council had a powerful influence, and the prior discussion of a matter by the Council was a precondition for the Assembly to function at all; but the process of deciding lay for the most part in the hands of the people in their Assembly."

[43] Kleisthenes had eliminated wealth requirements for archonship, but had left the powers of the Areopagus otherwise intact, with the single exception of transferring to the Assembly responsibility for political trials. Whether the subsequent changes to the Areopagus were due entirely to Ephialtes, or

Areopagus – an "island of aristocratic power" (Hansen 1999, 37) – was reduced to a single function, the hearing of cases involving the homicide of an Athenian citizen.[44]

whether the Areopagus had some of its powers reduced by earlier reforms, is not entirely clear – see Starr (1990, 25). When Ephialtes was murdered shortly thereafter, he was succeeded by Pericles, who introduced pay for political activity (including sitting on the Assembly), the final democratic reform.

[44] It is believed that at some point between the term of Kleisthenes in 507 and that of Ephilates in 462, the choice of public officeholders ("magistrates") was switched from election to lot – the lot was considered a more democratic form of selection (elections were believed to favor those with wealth). Hansen (1999, 49) writes that "Deep disunity prevails among historians as to when the Athenians first began to select magistrates by lot." Election continued to be used for positions requiring special skills, such as military general or chief architect. See Hansen (1999, 36, 49-50). The archon positions were still subject to property requirements, but those requirements were reduced so that even agricultural small holders could become archons. Solon's reforms defined four wealth-based classes, members of the third of which – the *zeugitai* ("owners of a yoke of oxen") were allowed to become archons in the mid-5th century (previously, only the top two classes were permitted to become archons). That left only the *thetes* – the landless – ineligible to serve as archons. See Hansen (1999, 37).

Appendix B
Institutions Supporting the Rule of Law in Athens

1. Rules for changing the law

The new institution created by the Athenians to consider changes to the fundamental law was called the *nomothetai*; literally, the "layers down of the law."[45] The members of the *nonomothetai* were drawn by lot from the same group of citizens men who served on *dikasteria*. The *nomothetai* was thus effectively a specialized *dikasterion* (people's court) and as a result enjoyed the same democratic legitimacy as the *dikasteria*. This ensured that the *nonomthetai* had sufficient support to play the necessary role of gatekeeper for proposed changes to the fundamental law.

Once per year, at the first Assembly meeting of the year, the entire law code was read aloud the Assembly (Hansen 1999, 139). The membership of the Assembly would then vote on whether to revise any of the laws. Most often, no changes were proposed; however, any member of the Assembly had the right to propose and argue for a particular revision. If this happened, the proposed new law, along with any law to be altered or invalidated, were posted in the marketplace and filed with the clerk of the Assembly, who read them at the two succeeding meetings of the Assembly. At that point, if the proposer wished to continue, a *nomothetai* of ten men was established. At the same time, five members of the Assembly were designated to defend the old law. It was the duty of the *nomothetai* to listen to the proposer of the new law (or amendment), to the five public advocates defending the existing law, and to any other citizen who cared to speak. The *nomothetai* then voted, and the issue was decided by simple majority (a tie preserved the old law intact). The Assembly had no power to overrule the *nomothetai*. If the *nomothetai* rejected the proposed change, the revision was set aside; if it accepted the change, the law code was altered.

However, the process did not end there. Even after the formal revision to the legal code, individual citizens retained the right to challenge revised laws, either on the basis of the character of the new law, or on the basis of a failure to observe proper procedure in proposing and enacting the new law. If this occurred, the case was heard in a *dikasterion*. However, the challenge took place under a newly constituted legal procedure: *graphe nomon me epitedeion theinai*, or "public action for having proposed and carried out an unsuitable law." The citizen who proposed the original revision to the law code in the Assembly was required to defend his revision, while the citizen who brought the challenge played role of prosecutor, explaining in what way the fundamental law was thus violated.[46] If the *dikasts* agreed that the new law was indeed "unsuitable," the original proposer paid a fine at the very least; at the extreme, he could lose the right to bring any future revision to the laws.

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[45] During the initial process of revision of the law code, two *nomothetai* were created; one charged with collecting the laws, and the second (as above) with ratifying. The former was established by the Council of 500 and dissolved once the collection process had been completed. See Hansen (1999, 163). The latter was reconstituted every time a change in the law code was proposed – see what follows. See Bonner (1969, 98-9), Hansen (1999, 165-78).

[46] Professional advocates were not used in ancient Athens in legal cases of any kind – the party claiming injury brought a case and prosecuted it himself, while the accused party acted as his own defense attorney. A majority vote of *dikasts* decided the issue. See Fleck and Hanssen (2012) for descriptions, citations, and an economic explanation of the procedures.

2. Institutions to ensure Assembly legislation in conformance with law

With the establishment of the *graphe nomon me epitedeion theinai*, the previously existing public action directed at laws and Assembly decrees (when the two were less clearly distinguished) – *graphe paranomon* – evolved into a means of challenging the conformance of Assembly decrees with the fundamental law (i.e., the "constitutionality" of the Assembly's actions).[47] The proposer of the challenged decree was required to defend himself in court (the challenger acting as prosecutor); if the decree was deemed to violate the fundamental law, the proposer again faced a fine, loss of legal rights, or (in extreme cases) exile.[48]

Thus, the reforms of 403 produced in Athens a new concept of the law; specifically, a *formal* distinction between fundamental law (*nomoi*) and acts of the Assembly (*psephisma*); a new review body; and a new legal procedure to adjudicate challenges to the fundamental law. The Athenians distinguished clearly between fundamental laws and decrees from that time forward: If a decision involved a fundamental law, the public declaration began with phrase, "It was decided by the *nomothetai*," while if the decision involved a decree, the public declaration began with the phrase, "It was decided by the Assembly", or "It was decided by the Council and the people" (Hansen 1999, 167).

3. The reinvigoration of the Areopagus

The final major institutional change involved re-empowering the Areopagus to serve as a formal and long-lived overseer of the law.[49] This re-empowerment proceeded in two major steps. The first occurred in 403, at the same time the law code was being formalized. In addition to its powers to hear homicide cases, the Areopagus was empowered to once again supervise the administration of laws by the archons. Such supervision was an important part of the formalization of the laws. Under the democratic regime, the "law" was much less clearly-defined, and archons relied on customary law as much as formal law (in fact, the distinction between the two was far from sharp). Thus, when the law code was formalized, the application of informal (unwritten) law was prohibited – all laws henceforth were written. See Hansen (1999, 170). Hansen writes, "It is important to notice that the prohibition of unwritten law was directed against *magistrates*." [emphasis in original]

The second occurred about 50 years after the formal codification.[50] In the mid-fourth century, a new procedure known as *apophasis* was established to prosecute offenses against the state (such as treason and attempts to overthrow democracy). Responsibility for bringing the charge rested not with private citizens or individual magistrates (as was the case for most other offenses), but with the Assembly or Areopagus directly. Regardless of which body made the

[47] It is not clear whether *graphe paranomon* was introduced under Cleisthenes or Ephialates – see the discussion in Starr (1990, 26-8).

[48] See Starr (1990, 27); Hansen (1999)

[49] We introduced the Areopagus above, describing how 5th century reforms had reduced it to a homicide court, eliminating its powers to supervise archons and interpret the laws. The Areopagus' membership consisted of all men who had been archons; after undergoing an initial process of scrutinization, members of the Areopagus served for life. The Areopagus was as close to an independent (of the Assembly) body as existed in Athens – not only did its members serve for life, but its decisions could not be challenged in people's law courts or before the Assembly. The precise size of the Areopagus is not known, but an average membership of 150 ex-archons is thought to be typical. Only 36 archons who served between 403 and 322 can be identified by name, but the vast majority of these were not "politicians" (*rhetores*), suggesting the Areopagus was not a forum for the political elite. See Hansen (1999, 290).

[50] In 352/1, the Areopagus was also given joint responsibility with the Council of 500 (and several other boards) for supervising all sanctuaries in Athens and Attica (Hansen 1999, 291).

initial charge, the Areopagus was responsible for conducting a preliminary investigation (including summoning of witnesses, taking testimony, and so forth). The word "*apophasis*" refers to the report the Areopagus made to the Assembly following its investigation. The report included a provisional recommendation of "guilty" or "not guilty". After the report had been read and discussed, if the Areopagus' recommendation was for acquittal the case was abandoned; if it was for condemnation, the Assembly would confirm (or not) by a show of hands – if it were confirmed, the case passed to the *dikasteria* for final judgement (Hansen 1999, 134).

Finally, in the latter half of the fourth century, the Areopagus became a venue for judging all citizens charged with a broad range of political offenses (not just treason). In effect, the Areopagus was transformed into a specialized court of last resort, available to prosecutors who preferred it to the *dikasteria* and their constantly changing *dikasts*.[51]

[51] This last power is believed to have been pushed through by Demosthenes during the original panic over invasion from Macedon, but was still in force more than a decade later. See Hansen (1999, 292)