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Political Conflict and Economic Competition

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A key ingredient for a dynamic economy is a modicum of competition, but with weak institutions powerful elites have strong incentives to collude to generate economic rents. Weak institutions also increase the scope for political violence, as an array of powerful elites have incentives to use coercion for private gains. This paper explores the link between political conflict and the economy's competitiveness by developing a framework where elites use coercive means to bargain over economic rents that arise through market manipulation. In the absence of a conflict, incumbents create restrictive markets to maximize their rents. A moderate but credible coercive threat against the regime forces incumbents to allow a greater mass of participants in the economy, thus making it more competitive. Economic competitiveness reflects the equilibrium of the underlying intra-elite conflict and shocks to the balance of power alter the competitiveness of the economy. Testing the framework explanatory power on England's historical development, the paper challenges the popular argument that political and economic development in early modern English development was driven by a rising middle class. Instead, economic and political policy over a six century period follows the changing dynamics of a continuous intra-elite conflict.

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I. Introduction

Economic growth necessitates a modicum of competitiveness to incentivize innovation and facilitate efficient resource allocation.[1] Yet such policies often run counter to the interests of economic incumbents, who benefit from oligopolic competition. This problem is particularly acute in the presence of weak political and economic institutions (institutions for short), where a range of actors can use their influence to manipulate policy for private gains (Acemoglu 2005; Rodrik 2000). Perhaps the most obvious mechanism frequently used to this effect is barriers to entry (Djankov et al. 2002). But a host of other factors influence the viability of entrepreneurship and these too are often manipulated, such as preferential access to capital, favorable tax regulations, or ambiguous legislation that enables discriminatory enforcement.[2] Ultimately, the creation of private rents necessitates a measure of exclusion that engenders political opposition. With weak institutions, such opposition becomes effective only once it poses a credible threat to the incumbent regime. With weak institutions, economic policy reflects a coercive political conflict among coalitions of powerful elites.

This paper undertakes two tasks. First, it develops a framework where political conflict and economic policy are endogenous to a politico-economic equilibrium. Elites face an investment problem with regards to their political power and the expected gains from such power. The resultant balance of power determines the mass of firms in the market, and thus the degree of economic competition. The framework highlights that with weak institutions, the lack of moderate intra-elite conflict is associated with narrow markets and low economic productivity. A moderate threat of a violent regime change can induce support for a more dynamic economy, but this support can be sustained only insofar as the threat persists. Conversely, too much intra-elite conflict induce political instability. The second task of this paper is to test the framework's explanatory power in a rigorous analysis of English early modern history. Over six centuries considered here, economic and political changes are intimately linked changes in the balance of power that drives a continuous intra-elite conflict. Moreover, the analysis shows that while social issues occasionally present the elite establishment with policy dilemmas, economic or political changes cannot fully be understood through the conventional perspective of a class conflict between an aristocratic elite and an emerging middle class.

The paper is structured as follows: section II briefly presents the research design; section III surveys previous literature and develops the foundations for why intra-elite conflicts is related to economic competitiveness; section IV develops a full framework; section V applies this framework to the early modern history of England and section VI concludes.

[1] Growth through competition is often characterized as a process of innovation through creative destruction (Aghion and Howitt 1992; Aghion, Akcigit and Howitt 2014; Schumpeter 1942).

[2] Among others, see Acemoglu (2006); Acemoglu, Johnson and Robinson (2001); Goldstein and Udry (2008); Haber (1997); Hall and Jones (1999); North (1990); North and Thomas (1973); Rajan and Zingales (2003); Rodrik (2000); Shleifer and Vishny (2002) as well as references therein.

II. Research Design

A. Purpose and Contribution

How political conflict affects economic outcomes has only recently reached the fore of economic research. On the one hand, a relatively large and growing literature has considered the economics of conflict itself, but abstracts from how the latent threat of this conflict affects the structure of the economy even in the absence of violent confrontation (Garfinkel and Skaperdas (2007) surveys the literature). On the other hand, abstracting from the dynamics of conflict, a growing literature attempts to explain economic institutions as the outcome of political asymmetries (e.g. Acemoglu 2008; Acemoglu and Robinson 2000, 2005; Alesina and Rodrik 1994; Bourguignon and Verdier 2000; Engerman and Sokoloff 1997; Galor and Zeira 1993; Grossman 1994, 1995; Roemer 1985; Shleifer and Vishny 2002). The link between the dynamics of conflict and economic institutions is however relatively unexplored. A notable exception is Besley and Persson (2011*b*), who consider how economic and political incentives co-determine political conflict and the strength of fiscal and legal institutions. However, to the best of my knowledge, the endogenous link between political conflict and competition in the economy has not yet been scrutinized.

My purpose in this paper is to explore that link by drawing on previous research in a set of related but relatively independent strands of literature. Conceptually, this paper is closely related to the work by North, Wallis and Weingast (2009) and Besley and Persson (2011*b*), but differs significantly from both in its focus on economic competitiveness. Moreover, since the work of North, Wallis and Weingast (2009) is purely conceptual, this paper provides an extension and a complement to their work by presenting a formal model embodying several of their notions. This model is distinct from that of Besley and Persson (2011*b*) both in the structure of political conflict and in the economic variables under scrutiny.

In terms of contribution, the results contained herein extends previous literature by establishing a formal link between political conflict and economic competition. The theoretical work ties together a set of related but independently developed strands of literature on economic development, the political economy of industrial organization and the economics of conflict. Testing the model on the history of England, this paper challenges the predominant interpretation of England's historical development as a conflict between elites and the "masses," and highlights instead that England's history is better explained as a contingent outcome of an "elite versus elite" dynamism.

B. Method

To develop a theory of intra-elite conflict and economic competitiveness, insights from previous literature on (a) the economics of conflict, (b) economic development and growth and (c) rent seeking and industrial organization are combined with observations from broad empirical patterns. In principle, the object of study are societies with weak institutions (defined more precisely momentarily), and the

research I draw on focus primarily on environments where policymakers and economic elites have overlapping incentives and where coercion is used strategically in economic settings. Empirically, weak institutions are almost exclusively the domain of economies in the low- to medium-income range, and the theory I develop is motivated by empirical patterns that separate "developing" economies from their "developed" counterparts.

Based on insights from previous literature, I develop a framework of intra-elite conflict and economic competition through a formal game-theoretic model. I apply the principle of Occam's Razor to keep the model tractable and to derive sharp predictions. In particular, I keep the model static to avoid an unnecessarily complicated mathematical treatment. In fact, the cost of ignoring the dynamic dimension is slight as the key rent function, introduced in section IV, can be interpreted as a reduced form solution to a dynamic problem, as we will see later.

To gauge the explanatory power of the model, I conduct an out of sample test of its predictions through a case study of England's early modern history. The choice to refrain from a quantitative study rests primarily on two arguments. First, the data required to quantitatively test the model in a convincing manner does not exist. Because the key variables are inherently unmeasurable (such as the coercive ability of individuals) convincingly parametrizing the model or estimating effects from shocks to the equilibrium is at our current state of knowledge not possible. Second, since theories of economic development frequently turn to the case of England's historical development, there is value in considering how the current model—which differs substantially in its focus on intra-elite conflict—explains historical observations. Among economists, an often cited argument holds that England's historical development resulted from a conflict between an aristocratic elite challenged by an emerging middle class (e.g. Acemoglu and Robinson 2000, 2012; Justman and Gradstein 1999; North and Weingast 1989). This paper does not find support for this argument; instead, through a rigorous historical analysis it shows that changes in economic and political policy are fundamentally determined through the dynamics of the intra-elite conflict surrounding policymaking.

Nevertheless, as with any choice of method, there are drawbacks to a qualitative study. The three primary concerns relate to (a) small sample size, (b) nonrandom selection and (c) subjective interpretation of facts. A small sample weakens the case for generalizations; the latter two concerns make empirical testing biased towards finding supporting evidence, in turn further weakening the power of the empirical test. In this regard, the choice of England was driven by two factors. First, English history sports a massive availability of primary research as it has been one of the primary targets of historical research for over two centuries. As such, the empirical study avoids relying on a few sources and can instead draw on a wide range of observations. This mitigates (but does not eliminate) the risk of bias from subjective interpretation. Second, because English history is well preserved, it is possible to adopt a long-run perspective which allows deeper understanding of the causal web affecting economic institutions. Thus, while the country-wise sample is small, in terms of within-country variation the sample of observations is instead quite large. Finally, by conducting the

analysis from a formal causal framework developed upon other sets of data, the analysis avoids ex-post rationalizations and achieves a measure of objectivity in its interpretation of historical events. All told, the wealth of historical research together with England's popularity among economists makes it both a highly attractive and relevant case to study.

C. A Note on Methodology

Because a theory of economic and political institutions not only is concerned with highly complex phenomena, but also suffers from sampling issues, the critique of Popper (1935) applies with full force: in general, it is not possible to empirically verify an economic theory as true. Not only does economic theory reduce a complex social system to a set of core (hypothesized) causal relationships, there is also a lack of observations. In fact, because most countries with strong institutions made the transition roughly at the same time, empirically it is not obvious that this transition actually can be repeated. These limitations mean that a theory concerned with economic institutions should be thought of as an incremental improvement on previous theories insofar it provides a better fit to empirical observation (Friedman 1953; Lakatos 1970, 1980; Popper 1935). Applying the same logic to this paper, in no way does this work constitute a complete socio-economic theory. It contributes to an imperfect and continually improving research program that gradually allows a richer understanding of the process of economic change and development.

III. Empirical and Theoretical Foundations

A. Comparative Puzzles of Growth

Most growth models study a steady state growth path or a smooth transition path, but as Easterly et al. (1993) were first to point out, not only is growth highly volatile, it shows little persistence over the medium to long run.[3] Moreover, while the growth literature traditionally emphasizes variation in country characteristics as determinants of growth (such as savings and taxes), Easterly et al. (1993) find little support for this prediction; while growth is highly erratic, country characteristics are instead very stable. Indeed, Jones and Olken (2008) find that virtually all countries converge on the U.S. GDP per capita over some 10-year period—but also diverge from the U.S. over some 10-year period. In a similar vein, the results of Hausmann, Pritchett and Rodrik (2005) tentatively indicate that the majority of positive growth episodes are not directly caused by political or economic reforms. Taken together, these findings suggest the central issue of development is not whether countries *can* grow, but whether they can *sustain* growth episodes once initiated.

This is not to say that country characteristics are irrelevant per se, quite the opposite; a country's social institutions fundamentally shape the structure of

[3] For an overview of growth models, see Acemoglu (2009) and references therein. Easterly and Levine (2001) survey the literature on growth.

the economy and thereby its ability to sustain growth. As a testament to the importance of country-level differences, Pritchett (2000) compares within-country growth patterns across a wide set of countries. While most OECD countries experience a stable growth trend, the vast majority of developing countries experience growth that eventually level out on plateaus or even revert into economic decline. Jerzmanowski (2006) estimates a Markov Switching Regime model and finds that better institutions increase the persistence of positive growth episodes while weak institutions increase the average length of stagnation while limiting the sustainability of growth episodes. Indeed, focusing on the (very) long run, the importance of a country's institutions has been demonstrated time and again (e.g. Acemoglu, Gallego and Robinson 2014; Acemoglu, Johnson and Robinson 2001; Easterly, Ritzan and Woolcock 2006; Easterly and Levine 2003; Hall and Jones 1999; Rodrik, Subramanian and Trebbi 2004).

But this merely pushes the question one step further. For if institutions matter, what determines a society's intuitions? Political and economic institutions do not evolve in a vacuum; after all, social institutions must be respected and enforced. The social processes that shape such collective decision-making therefore fundamentally influence the structure and dynamics of the economy. As has been argued by North, Wallis and Weingast (2009) and Besley and Persson (2011*b*) among others, a crucial difference between low- and medium-income countries and most high-income countries is the prevalence of political violence among the former. But how political violence affects economic policy even in the absence of outright conflict is a problem where economists have only scratched the surface. As such, results from a relatively small body empirical studies are mixed (e.g. Alesina et al. 1996; Besley and Persson 2011*a*; Keefer 2007; Rodrik 1999). Such inconsistencies underscore a need for deeper understanding of the causal links between political violence and economic outcomes.

B. Regime Instability

While empirical evidence must be taken with due caution, it is nevertheless a fact that low- and medium-income countries suffer from substantially greater political instability—the hallmark of weak institutions. For instance, defining a regime as a "state that experiences an uninterrupted sequence of nonviolent leadership successions," Cox, North and Weingast (2015) find violent regime changes to be a ubiquitous phenomenon: between 1840 and 2005, 10% of all regimes last less than a year, while *half* of all regimes do not make it past the 8-year mark. But regime instability is also unequal; countries below the median income level have a median regime duration of 7.5 years, while the median among countries above the 90^{th} percentile is 60 years. Even the highest performing developing countries do not curb the prevalence of violent regime changes; countries between the 75^{th} and 90^{th} decile have a median regime duration is 12.5 years, only some 10% of the total distance between the poorest and richest countries. While this measure could overstate the difference as past regimes are more heavily weighted, the above pattern is robust to other representations. Figure 1 plots the relative frequency of coups d'état across the income spectrum using the Polity IV Project's Coup d'état

dataset that documents attempted, plotted or rumored coups for 167 countries between 1946–2014.[4] Regime instability is negatively correlated with income, but experience a paradigm shift around the 90th percentile, above which coups are almost completely absent. But why is regime instability so common in low- and medium-income countries?

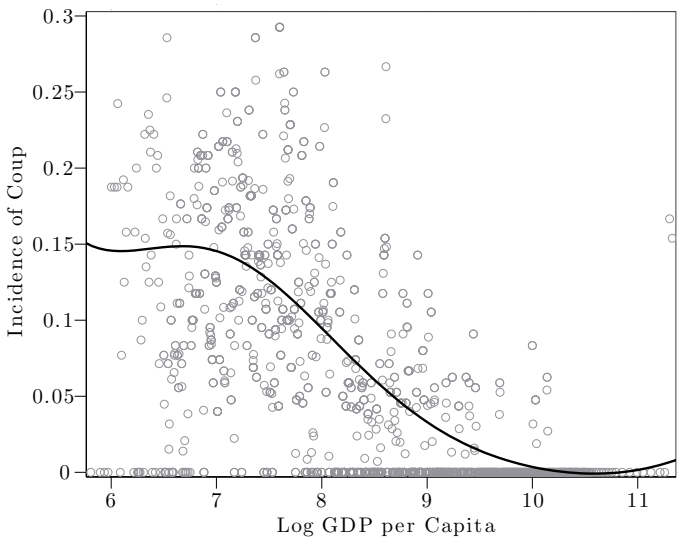

Figure 1. Coups and Income, 1946-2014

Note: Line fits local linear regression (bandwidth=0.8). Circles plot averages of neighbouring observations (non-overlapping sets of 5). GDP at PPP in 2005 USD. *Source*: (1) Polity IV, coup d'état dataset (scoup1, atcoup2, pcoup3, apcoup4, agcoup), (2) Penn World Tables (8.1, rgdpe).

C. The Logic of Political Violence

To fully understand the link between political instability and economic prosperity, we must first have a theory of political violence. The problem of political violence arises as policies generate winners and losers. As such, agents have incentives to use coercion to force outcomes that are favorable to them. With *strong institutions*, the society is characterized by the rule of law, relatively unencumbered entry into economic and political competition, a constitutionally constrained polity and a state monopoly on coercive capacity. Importantly, strong institutions decouples incentives between economic and political incumbents; to stay in power, political incumbents must adhere to the interest of a broad set of the society rather than the vested interests of economic incumbents. The monopoly on violence in turn ensures that economic elites cannot use coercive force to protect their interests. With *weak institutions*, economic and political incumbents often have overlapping interests and use their power to manipulate the polity and

[4] See Marshall and Marshall (2015) for details.

the economy to generate private rents. Importantly, weak institutions entail a multitude of actors both within and outside the state with the capacity to use coercion.

The key factor determining political instability in the presence of weak institutions is therefore the dispersion of *coercive capacity*; the extent to which a group can use coercion to influence policy-making. To fix ideas, coercive capacity will here exclusively refer to a coalition's ability to attempt a *violent regime change*; the attempt to forcibly remove the incumbent regime (in violation of formal institutional arrangements).

Figure 1 indicates that all except the high-income countries feature weak institutions. To show this more explicitly, figure 2 uses the PolityIV project's Polity2 score to measure the quality of institutions. This variable grades a country's polity on a scale from -10 to 10 in terms of political access, political competition and political constraints.[5] In general, the stronger the institutions, the higher the income. In particular, except for a few outlying autocratic regimes (oil producing countries primarily in the Middle East), all high-income countries feature strong institutions. Some economists have argued that strong institutions came only after these countries grew rich (e.g. Alvarez et al. 2000; Barro 1999; Glaeser et al. 2004; Lipset 1960), but most evidence do not support this claim; instead, a wide range of studies find that strong institutions are pivotal for generating long-term growth (Acemoglu, Gallego and Robinson 2014; Acemoglu et al. 2008; Acemoglu, Johnson and Robinson 2001; Acemoglu et al. 2014; Dollar and Kraay 2003; Doucouliagos and Ulubaşoĝlu 2008; Easterly, Ritzan and Woolcock 2006; Easterly and Levine 2003; Hall and Jones 1999; Rodrik, Subramanian and Trebbi 2004).

Weak institutions are pernicious because they enable an individual or a group of individuals to use the threat of violence to manipulate the behavior of others. Thus an asymmetry arises between those with the power to coerce others, and those without.[6] While these politically empowered *elites* may not themselves have the ability to use violence, each has access to it. For instance, powerful economic agents may collude with the police, paramilitary organizations or the military itself. This gives rise to what North, Wallis and Weingast (2009) call the "fundamental problem of violence." Crucially, for societies to emerge out of the Hobbesian state of nature, powerful individuals most find it in their self interest to refrain from appropriating other individual's goods. Throughout human recorded history, almost all societies have solved this problem by creating social hierarchies that give powerful individuals control over political institutions. These in turn, allow elites to generate economic rents by manipulating the economy. Economic rents therefore are intimately linked to the structure of society. With strong institutions, rent-seeking is primarily channeled through Schumpeterian creative destruction in competitive markets (North, Wallis and Weingast 2009, chap. 4). When institutions are weak however, it is much more lucrative to straddle the

[5] See Marshall, Gurr and Jaggers (2014) for details.

[6] The population must also be geographically constrained for coercive threats to be credible. Without such constraints individuals can relocate beyond the reach of coercive entities (Fukuyama 2011).

divide between politics and economics to generate economics rents.[7]

To create rents, powerful elite coalitions impose exclusion restrictions that concentrate rents in their sphere of influence, thereby giving the excluded elites incentives to challenge such restrictions. Weak institutions are therefore intimately linked with fluid coalitions of elites engaging in an implicit bargaining over economic rents. Each coalition trade off expected gains from using their coercive capacity against the rents they can extract when they refrain from doing so. To produce a stable outcome, rents must be allocated so that no group finds it in

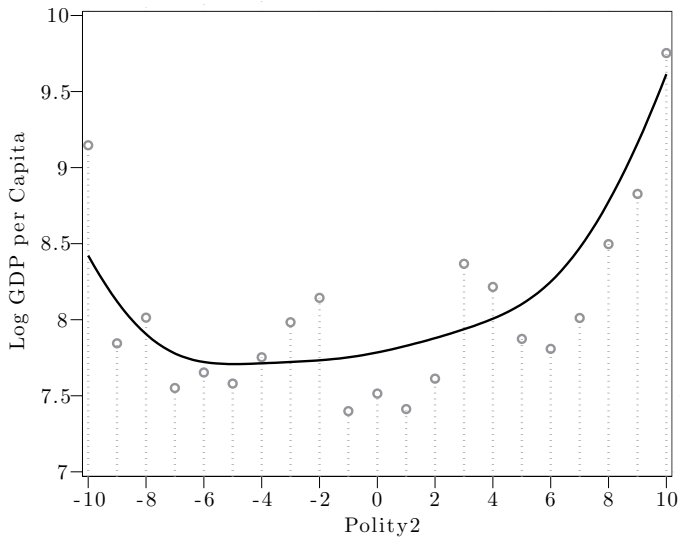

Figure 2. Income And Regime Type, 1960-2011

Note: Line fits a local linear regression (bandwidth=3). Circles plot the average GDP per capita per polity2 score. GDP at PPP in 2005 USD.
Source: Penn World Tables (8.1, rgdpe); Polity IV (Polity2).

their interest to use coercion (Cox, North and Weingast 2015). This entails what North, Wallis and Weingast (p. 20) calls a "double balance" between the distribution of coercive capacity among elite coalitions and the distribution of economic benefits. But because political power can shift much faster than the distribution of rents, this structure is inherently unstable and frequently experiences break downs followed by political violence.

To illustrate these fairly abstract concepts, it is helpful to consider an illuminating example, such as the case of Sierra Leone. The dictator during the 1970s and 1980s—Siaka Stevens—ran the entire country as a private fiefdom. Dismantling coercive organizations such as the military and police, he gained total political control by relying instead on brutal paramilitary units. But such policies alienated other elites. As such, upon his retirement, he was compelled to pick a weak successor to ensure his own survival. Almost overnight, the incumbents lost

[7] For a full comparison of societies with strong and weak institutions see North, Wallis and Weingast (2009) as well as Acemoglu (2005).

almost their coercive power, allowing aggrieved elites to take local control. The sudden shift in balance of power proved too drastic for the equilibrium to absorb and as the government collapsed, the country slid into a 10 year long civil war.[8]

The case of Sierra Leone highlights the inherent problem facing a group of elites in control of political institutions: extracting as much rents as possible today fuels opposition tomorrow and increases the likelihood that shocks to the politico-economic equilibrium results in political violence. To limit the scope for opposition, powerful elites can use two mechanisms. To fix ideas, consider a society where the elite class is divided into two coalitions, one of which is in control of political institutions and therefore enjoy considerable rents. Refer to this coalition the *incumbent elites*, or simply incumbents. Call the remainder *opposing elites*. Incumbents can moderate opposing elite opposition by:

(i) reducing the expected ex-post gains from a violent regime change. This entails credibly constraining executive power ex-post.
(ii) increasing the incumbent's relative power, what I will refer to as *entrenchment*, by reducing the (relative) coercive capacity of the opposing elites.
(iii) increasing the opposing elite's value of status quo. This entails redistributing rents towards a sufficiently large portion of the opposing elites.

Clearly, constraints on the executive that are enforceable ex-post require very complex set of interdependent institutional arrangements, since (a) they must be enforced by the same regime they are constraining and (b) survive a violent regime change. Such an institutional environment amounts to what we I have referred to as strong institutions, and has been the subject of considerable scrutiny (Acemoglu 2005; Acemoglu and Robinson 2008; Besley and Persson 2011*b*; Gates et al. 2006; Geddes 1999; Rodrik 2000).

With weak institutions, such constraints are either not in place or not credible. Instead, incumbents face an implicit bargaining over economic policy that reflects the relative position of the two elite groups. By increasing its entrenchment, the incumbents reduce the likelihood of a successful coup and thereby improve their bargaining position.[9] This bargaining position ultimately dictates to what degree economic rents have to be shared with opposing elites in order to avoid an attempted violent regime change. Increasing entrenchment is however not always feasible and often entails considerable political and economic costs. Interestingly, the results of La Ferrara and Bates (2001) indicate that entrenchment can exhibit economies of scale, with powerful elites using relatively more coercion and providing less public goods.

On the other hand, co-opting subsets of the opposing elites through economic concessions reduce the amount of rents accruing to incumbents themselves and is therefore costly. Moreover in the future, it also risks empowering opposing elites financially and organizationally. As such, incumbents run the risk of undermining their future bargaining position. Indeed, Siaka Stevens preferred dismantling the entire military (at a non-negligible risk of falling prey to for-

[8] The above account summarizes Reno (1995, 1998, 2003) and Snyder and Bhavnani (2005).
[9] Related is the concept of repression, see Davenport (2007).

eign aggression) than risk losing control over its organization. Olson (1965) was early to highlight why organizational capacity is important; in groups attempting collective actions, members have an inherent incentive to free-ride. For opposing elites, the dilemma arises as every individual stand to gain from a regime change, but privately each is better off not investing or participating in the coup. Originating in Tullock (1971), subsequent research stresses the ability to monitor and selectively reward group members (e.g. Grossman 1999).[10] Both these mechanisms require an organizational capacity. Therefore, as incumbents expanding access to economic rents towards opposing elites, they also undermine their own power base by increasing the opposition's ability to coordinate in the future (Bloch, Sánchez-Pagés and Soubeyran 2006; Garfinkel 2004). This makes concession doubly unattractive, they reduce not only incumbent's contemporary rents, but also their expectation of future rents. Studying a diverse set of developing countries, North et al. (2012) consistently find that societies where coercive capacity is distributed among elite coalitions have an inherent tendency to limit access to economic and political organizations, giving giving rise to societies dominated by a narrow elite while the general population face severe restrictions on their political and economic rights. Somewhat paradoxically then, rent creation is both the cause of, and solution to, political instability and violence.

Finally, it remains to answer why Pareto-optimal transfers cannot be achieved. First, once the opposing elite gain access to rents, they no longer have an economic incentive to compensate incumbents (e.g. Acemoglu 2003; Fernandez and Rodrik 1991). Hence, the incumbents must have the ability to punish the opposing elites. But since both groups possess coercive capacity, the risks associated with such punishment may far outweigh any gains and simply increasing entrenchment ex-ante may preclude the need to share rents in the first place. Second, the notion of a transfer scheme is itself problematic. In reality, individuals do not fall into a set of well defined, mutually exclusive categories. Nor is the true distribution of coercive capacity known. Moreover, it is contingent on the behaviors of others. In fact, a Pareto-optimal transfer need not exist and even if it does, identifying it is a practical impossibility.

D. The Political Economy of Competition

To create rents in economic markets entail barring possible entrants. While some industries admit this on purely economic grounds—such as through economies of scale—in others there are strong incentives to influence regulation (Stigler 1971). When economic incumbents succeed in this regard, the reduction in competition means that the remainder expand despite being relatively unproductive in the margin. The overall impact is inefficient resource allocations and lower productivity (Acemoglu et al. 2013; Murphy, Shleifer and Vishny 1991). On the other side, weak institutions also allow bureaucrats to use market regulation as a means to generate rents (Olken and Pande 2012; Svensson 2005). In formal studies, long-term growth is also limited by a systemic bias against technology adoption, as

[10] See Acemoglu and Robinson (2005), pp. 123-128, and Blattman and Miguel (2010) for overviews of the literature on collective action in conflicts.

entrepreneurs with superior production technology are prevented from entering (Krusell and Ríos-Rull 1996; Parente and Prescott 1999). These causal mechanisms have received considerable empirical support. Linking barriers to entry with weak institutions, Djankov et al. (2002) show that countries with higher average entry costs have higher corruption and larger informal economies, but not higher quality of public or private goods. That preferential access to credit inhibits technology adoption has been given support by Ayyagari, Demirgüç-Kunt and Maksimovic (2012), who find that a firm's access to finance in emerging markets is an important determinant of the extent to which the firm undertakes productivity-enhancing investments. In contrast, firms shirking such investments are typically state owned firms facing no foreign competition. Carlin, Schaffer and Seabright (2004) find a modicum of competition necessary to provide incentives for innovation and efficient resource allocation in transitioning economies.

IV. A Framework for Conflict & Competition

To characterize the causal link between political conflict and economic competition, consider a society where the elite establishment is divided into two coalitions, each with a measure 1 of individuals.[11] One coalition, the incumbents (e), is in control of economic policy, while the other comprises opposing elites (o). Assume agents have linear preferences in income.

A. Economy

The economy consists of a measure $\sigma \in [1, 2]$ of elites that operate a firm in the economy. The amount of rents each firm generates depends only on the degree of competition, as measured by the mass of firms; let $f : [1, 2] \to \mathbb{R}^+$ denote the rent function of a firm. While competition need not always restrict the scope for rent-creation, as the economy approaches perfect competition private rents deteriorate. For our purposes, assume $f(\sigma)$ is decreasing on the relevant interval.

To keep the model minimal, I refrain from explicitly modeling the aggregate economy and instead assume that total output $Y(\sigma)$ is increasing in σ. This reduced-form approach allows a parsimonious model and a focused analysis without imposing restrictions on the economy as such. At this level of generality, rents can accrue from a multiplicity of sources and be affected by competition through a variety of channels. That being said, appendix B provides micro-foundations that supports the rent function and its relationship with total output.[12] Formally, assume $f(\sigma)$ is positive but decreasing over the relevant domain and sufficiently flat to allow for non-violent equilibria:

$$-f(\sigma)/\sigma < f'(\sigma) < 0, \quad f''(\sigma) \leq 0, \tag{I}$$

where $f' = df/d\sigma$.[13,14]

[11] The loss of generality from assuming equal mass is minor since one can alter mappings of relative power to account for size effects.

[12] I consider a standard one-sector production economy, but where firms face decreasing returns to scale and fixed supply of a subset of inputs. Additionally, I consider risks associated with Schumpeterian creative destruction. All told, fairly week modifications to the standard production model generate these dynamics.

[13] For ease of exposition, I restrict attention to a concave rent function. However, the results hold for a sufficiently flat convex rent function too, but requires more involved algebra.

[14] A function satisfying (I) is $f(\sigma) = m - k\sigma$ with $0 < 4k < m$.

B. Polity

With weak institutions, coercive capacity is dispersed. The opposing elites can invest in coercive capacity $v \in [0, \infty)$ at a linear marginal cost, $c \in [0, \infty)$, to increase the probability $p(v; \cdot)$ that a violent regime change—if attempted—will be successful. Let $\mu \in \{0, 1\}$ denote the opposition's decision, with $\mu = 1$ representing an attempt at a violent regime change, which I interchangeably refer to as a *coup*. If a coup does take place, the winner become incumbents while the coercive capacity of the looser is extinguished. Thus, the winner of a coup sets policy unrestrained by any coercive threats. I abstract away from direct economic costs of conflict.[15]

The incumbent elites can manipulate the incentives of the opposing elites by (a) increasing the cost of acquiring coercive capacity or (b) by increasing the value of status quo. With respect to (a), I model this as an investment problem; by investing in entrenchment, $z \in [0, \infty)$, at a constant marginal cost, $\lambda \in [0, \infty)$, incumbent elites raise the marginal cost of acquiring coercive capacity for the opposing elites.[16] Hence, write $c(z)$ and let $c : [0, \infty) \to \mathbb{R}^+$ be twice differentiable, strictly increasing and concave:

$$c'(z) > 0, \quad c''(z) < 0. \tag{II}$$

As for (b), the incumbent elites can increase the expected value of status quo among opposing elites by increasing the mass of firms in the economy (conditional on the opposing elites refraining from a coup). Thus, elites set σ against a coercive threat $p(v; \cdot)$ of a violent regime change.[17]

Finally, let $\epsilon \in [0, \bar{\epsilon}]$ capture exogenous factors impacting the balance of power, and suppose that ϵ acts as a level shift of $p(v; \epsilon)$. Let $p : \mathbb{R}^+ \times [0, \bar{\epsilon}] \to [0, 1]$ be strictly increasing and twice differentiable in v and differentiable in ϵ with:[18,19]

$$\begin{aligned} &a) \quad p_v(v;\epsilon) > 0, \quad p_{vv}(v;\epsilon) < 0, \quad p_{vvv}(v;\epsilon) = 0, \\ &b) \quad p(0;\epsilon) = \epsilon, \\ &c) \quad p_\epsilon(v;\epsilon) > 0, \quad p_{v\epsilon}(v;\epsilon) = 0, \end{aligned} \tag{III}$$

where $p_i \equiv \partial p / \partial i$, $i = v, \epsilon$. Note that p is bounded from above and being strictly increasing, this implies $\lim_{v \to \infty} p_v(v) = 0$.

Since the collective action problem itself is not the primary concern here, I follow convention and assume each coalition solves this problem with full participation. Since each individual within a coalition faces identical incentives, I solve the model using two representative agents. The timing of events is as follows:

[15] These two assumptions may not be entirely realistic, but as they only affect the continuation value of winning a contest—a constant in an agent's optimization problem—the loss of generality is slight.

[16] I assume z is privately financed to avoid second-order effects of tax-financed entrenchment.

[17] To focus the discussion I assume the incumbent elites set $\sigma \in [1, 2]$ directly without cost. While an obvious simplification, it allows a tractable analysis.

[18] I impose $p_{vvv} = 0$ to ensure that other functions are as general as possible. One could allow higher order derivatives in p, but this would entail narrower restrictions on other key functions.

[19] A simple function satisfying (III) is $p(v; \epsilon | v \in [0, \frac{1}{2\beta}]) = \phi(v - \beta v^2) + \epsilon$ with $\beta \in (0, 1)$, $0 < \phi \leq 4\beta(1 - \bar{\epsilon})$.

1 Nature moves and sets ϵ.
2 The society inherits a representative incumbent and a representative opposing elite.
3 The incumbent sets z.
4 The opposing elite sets v.
5 The incumbent sets σ.
6 The opposing elite decides on $\mu \in \{0, 1\}$;
   (a) If $\mu = 0$, a measure σ of elites operate firms and extract rents. While all incumbents are guaranteed access to a firm, a measure $\sigma - 1$ are randomly drawn among the opposing elites.
   (b) If $\mu = 1$, nature determines a winner who resets σ facing $v = 0$.

C. Equilibrium

Since the model is static, the solution can be thought of as the steady state equilibrium of a particular regime. I solve the model for a (pure strategy) Subgame Perfect Nash Equilibrium, which entails backward induction from stage 6. An economic model that accounts for political behavior endows each individual with two roles; one as an economic agent, and one as a political agent. The economic agent maximizes consumption subject to a budget constraint. Here this is simply given by the level of rents. The political agent acts according to what maximizes economic payoff conditional on the behavior of other political agents (Persson and Tabellini 2002, p.20). In this model, the indirect utility functions for the incumbent and the opposing elite involve investments in entrenchment or coercive capacity, respectively, and expected rents. Thus, given some strategy of the opposing elite, $S^o \equiv (v, \mu)$, the problem for the incumbent elite can be written:

$$\begin{aligned} U^e(S^o, \epsilon) = \max_{z,\sigma} \quad & -\lambda z + (1-\mu) f(\sigma) + \mu \left(1 - p(v;\epsilon)\right) \bar{f}, \\ \text{subject to} \quad & z \geq 0,\ \sigma \in [1, 2]\,. \end{aligned} \tag{1}$$

For brevity, $\bar{f} \equiv f(1)$ denotes the most preferred policy in the absence of a coercive threat. This constant represents the continuation value of becoming incumbent. Since it's absolute value is immaterial for the main purpose of this analysis, I use $f(1)$ as a convenient normalization. Let $S^e \equiv (z, \sigma)$ denote the incumbent's strategy. The opposing elite solves:[20]

$$\begin{aligned} U^o(S^e, \epsilon) = \max_{v,\mu} \quad & -c(z)v + (1-\mu)(\sigma - 1) f(\sigma) + \mu p(v;\epsilon) \bar{f}, \\ \text{subject to} \quad & v \geq 0,\ \mu \in \{0, 1\}. \end{aligned} \tag{2}$$

Economic Competition.—First consider the problem facing the opposing elite. She can either refrain from attempting a coup for an expected payoff of $\left(\frac{\sigma-1}{1}\right) f(\sigma)$,

[20] Note that $(\sigma - 1)$ denotes the probability of gaining access to a firm (i.e. rents).

or attempt a coup for an expected payoff of $p\bar{f}$. For $\mu = 0$ to be optimal, we must have:

$$(\sigma - 1)f(\sigma) \geq p(v;\epsilon)\,\bar{f}. \tag{3}$$

This expression shows that the incumbent elite can prevent a coup by increasing the expected value of status quo for the opposing elite above a minimum threshold. First, note that the expected value of status quo is increasing in σ: differentiating the left hand side gives $F(\sigma) \equiv (\sigma-1)f' + f(\sigma)$ which is positive by assumption (I). For ease of notation, let $F(\sigma)$ denote the marginal increase in the expected value of status quo for opposing elites. From (3) it follows that there is some minimum level of economic concessions, σ^{ϵ}, such that (3) is satisfied with equality. By the Implicit Function Theorem, this minimum level of concessions is increasing in the coercive threat against the incumbent; $d\sigma^{\epsilon}/dp = \bar{f}/F(\sigma) > 0$. The opposing elite will find it optimal to refrain from a coup, $\mu = 0$, if the expected value of status quo satisfies (3), which entails economic concessions of at least σ^{ϵ}. Crucially, since the incumbent control σ, (3) is necessary but not sufficient. From (1), for the incumbent to prefer to avoid a coup, σ must satisfy:

$$f(\sigma) \geq (1 - p\,(v;\epsilon))\,\bar{f}. \tag{4}$$

Since entrenchment and coercive capacity are already set, $p(v;\epsilon)$ is taken as given. Combine (3) and (4) to obtain the interval for which a coup can be avoided:

$$\bar{f} - f(\sigma) \leq p(v;\epsilon)\,\bar{f} \leq (\sigma - 1)f(\sigma). \tag{5}$$

Hence, given $p(v;\epsilon)$, if some $\sigma \in [1, 2]$ exists such that (5) is satisfied, then both elites prefer to avoid a coup. This underscores a *dual incentive compatibility* necessary for the existence of stable regimes in the presence of weak institutions. The incumbent's loss of rents from supporting a more competitive economy cannot be greater than the expected rents under political instability (i.e. an attempted violent regime change). Simultaneously, the opposing elite must find the expected gains from accepting status quo sufficiently large to refrain from risking a coup. Figure 3 illustrates this dynamic: while the value for the incumbent of avoiding a coup decreases with σ, the opposing elite's expected value of status quo increases. The horizontal lines show the respective elite's payoffs in the case of a coup and for dual incentive compatibility to arise, the incumbent must find status quo at least as lucrative as the opposing elite. An important aside from figure 3 is the concavity of the opposing elite's payoff function. This is quite a general feature and stems from the fact that as σ increases, the marginal gain in probability to access rents is being off-set by the a deterioration in the value of those rents.

In this model, for all $p(v;\epsilon)$ less than or equal to some upper limit $\overline{p}$, dual incentive compatibility holds. To see this, manipulate the lower and upper bound in (5): for a nonempty interval to exist we must have $\sigma f(\sigma) \geq \bar{f}$. This trivially holds for $\sigma = 1$. Differentiating the left hand side gives $\sigma f'(\sigma) + f(\sigma) > 0$ by (I). Moreover, because $dp/d\sigma^{\epsilon} > 0$, $\sigma = 2$ represents the highest coercive threat for

which any concessions will appease the opposing elites, $\overline{p}$. From (3), we find this limit as $\overline{p} \equiv f(2)/f(1) \in (0,1)$. To avoid trivial cases, assume $\overline{\epsilon} \leq \overline{p}$. Finally, since $f(\sigma)$ is decreasing in σ, the incumbent will never choose σ higher than σ^{ϵ}. With this in mind, we can establish each agent's best response function:

$$\hat{\mu}(\hat{\sigma}) = \begin{cases} 0 & \text{if } \hat{\sigma} \geq \sigma^{\epsilon}, \\ 1 & \text{otherwise.} \end{cases}$$
$$\hat{\sigma}(p) = \begin{cases} \sigma^{\epsilon} & \text{if } p \leq \bar{p}, \\ 1 & \text{otherwise.} \end{cases} \tag{6}$$

Coercive Capacity.—Because the incumbent set $\sigma = \sigma^{\epsilon}$ if $\hat{\mu} = 1$, the opposing elite faces the same ex-ante payoff regardless of $\hat{\mu} = 1$ or $\hat{\mu} = 0$. Hence, the opposing elite maximizes coercive capacity investments as if a coup will occur and is indifferent as to the final outcome. Thus, set $\hat{\mu} = 1$. The goal function

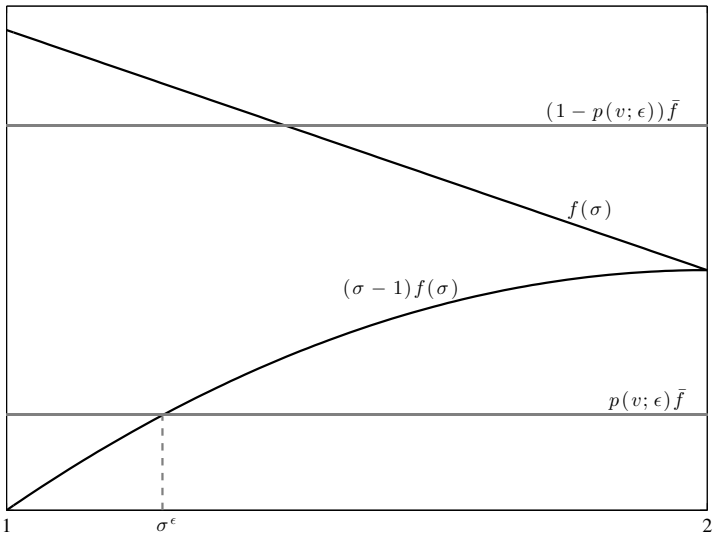

Figure 3. Dual Incentive Compatibility

Source: Author's calculation of equilibrium behavior for a parametrization of example functions (see footnotes 14, 19 and 22).

in (2) is continuous and strictly concave. Differentiate to find the first order condition: $-c(z) + p_v(v)\bar{f} \leq 0$, which holds with equality for $v > 0$. A unique interior solution $\bar{v}$ is implicitly defined through

$$\bar{f} p_v(\bar{v}) = c(z).$$

The full solution is therefore

$$\hat{v}(z) = \begin{cases} \bar{v}(z) & \text{if} \quad \bar{f} p_v(0) > c(z), \\ 0 & \text{otherwise.} \end{cases} \tag{7}$$

ENTRENCHMENT.—The problem facing the incumbent elite is somewhat more intricate as their goal function shifts with $\hat{\mu}$. To see this, note that (4) generally does not hold with equality. For $\hat{\mu} = 1$ the incumbent optimizes on $(1 - p(v; \epsilon))\bar{f}$ while for $\hat{\mu} = 0$ the incumbent optimizes on $f(\sigma^{\epsilon})$. To characterize the structure of the incumbent's problem, suppose that at $z = 0$, a coup occurs. This requires $p(\hat{v}; \epsilon) > \overline{p}$. As I show momentarily, increasing z induces a decrease in $\hat{v}$ and therefore in p. Hence, at some point $Z_{\min}$ entrenchment has reduced coercive capacity to reach $p(\hat{v}; \epsilon) = \overline{p}$ and a coup is avoided. Hence, $Z_{\min}$ is such that for $z < Z_{\min}$, $\hat{\mu} = 1$ while for $z \geq Z_{\min}$, $\hat{\mu} = 0$.[21] But the incumbent may have incentives to further invest in entrenchment so as to reduce opposing elite's coercive capacity. As such, the incumbent improves her bargaining position. At some point $Z_{\max}$, entrenchment is so deep that opposing elite abstains from coercive capacity investments altogether. Coercive capacity becomes monopolized in the incumbent and further investments are never optimal. Formally, use (7) to define $Z_{\max}$ through $\bar{f} p_v(0) = c(Z_{\max})$ and note that $Z_{\max} \in [Z_{\min}, \infty)$. It will be helpful to incorporate these thresholds into the incumbent's goal function; let $g(z)$ denote the incumbent's goal function and write:

$$g(z) = \begin{cases} g_1(z) \equiv -\lambda z + (1 - p(v; \epsilon))\bar{f} & z \in [0, Z_{\min}], \\ g_2(z) \equiv -\lambda z + f(\sigma^{\epsilon}) & z \in [Z_{\min}, Z_{\max}], \end{cases}$$

with $g(Z_{\min}) = g_2(Z_{\min})$. Figure 4 plots the incumbent's goal function; below $Z_{\min}$, the incumbent optimizes anticipating a coup and the goal function is therefore $g_1(z \in [0, Z_{\min}])$. At $Z_{\min}$, dual incentive compatibility holds and a coup is avoided. The incentive structure changes for the incumbent, who now maximizes $g_2(z \in [Z_{\min}, Z_{\max}])$. As figure 4 shows, the incumbent may have incentives to push entrenchment beyond $Z_{\min}$ in order to tilt the balance of power so as to improve the bargaining position. For the incumbent's investment problem to be interesting, entrenchment cannot be too effective. For this reasons, I limit the curvature of $c(z)$, and given this restriction lemma 1 ensures a well-behaved solution:[22]

$$\text{(IV)} \qquad \frac{c'(z)^2}{-c''(z)} < c(z) \qquad \forall z \geq 0.$$

Lemma 1. Let $f(\cdot), c(\cdot)$ and $p(\cdot)$ satisfy (I)-(IV). Then $g(z)$ is piecewise strictly concave. Moreover, over each domain, a unique point $\hat{z}_i$ that maximizes $g_i(z)$, $i = 1, 2$, exists where $\hat{z}_1 < \hat{z}_2$. For each i, $\hat{z}_i$ satisfy the Karusch-Kuhn-Tucker conditions. The global unique optimum $\hat{z}$ satisfies $\hat{z} \in \{\hat{z}_1, \hat{z}_2\}$.

To save space, the proof is relegated to appendix A. From lemma 1 it follows that the unique global optimum, $\hat{z}$, is given by the point-wise comparison of the two

[21] Note that $Z_{\min}$ could be 0 (in which case a coup never occurs) or arbitrarily large.
[22] A simple function that satisfies the restrictions on $c(\cdot)$ is $c(z) = z^{\alpha}$ for $\alpha < 1/2$.

solution candidates, $\hat{z}_1$ and $\hat{z}_2$.

First, let us establish how z and $\hat{v}$ are related. To emphasize that $\hat{v}$ depends on z indirectly, I write $\tilde{v}[z] \equiv \hat{v}(c(z))$. Implicit differentiation of (7) shows that:

$$\frac{d\tilde{v}}{dz} = \frac{c'(z)}{p_{vv}(\tilde{v})\bar{f}} < 0,$$

if $\hat{v} = \bar{v}$ and 0 otherwise. First consider $\hat{z}_1$, the optimal solution on $z \in [0, Z_{\min}]$. Let $\mathcal{L}_1(z) = g_1(z) + \gamma_1^1 z - \gamma_1^2(z - Z_{\min})$ be the Lagrangian of the incumbent's maximization problem over $[0, Z_{\min}]$. The first order condition is $g_1'(z)+\gamma_1^1-\gamma_1^2 = 0$ with complementary slackness and $g_1'(z) = -\lambda - p_v(\tilde{v})[d\tilde{v}/dz]\bar{f}$. Now, if the entrenchment technology is too cost-inefficient, no investment take place. By strict concavity of g_1, this requires $g_1'(0) < 0$. Conversely, if the entrenchment

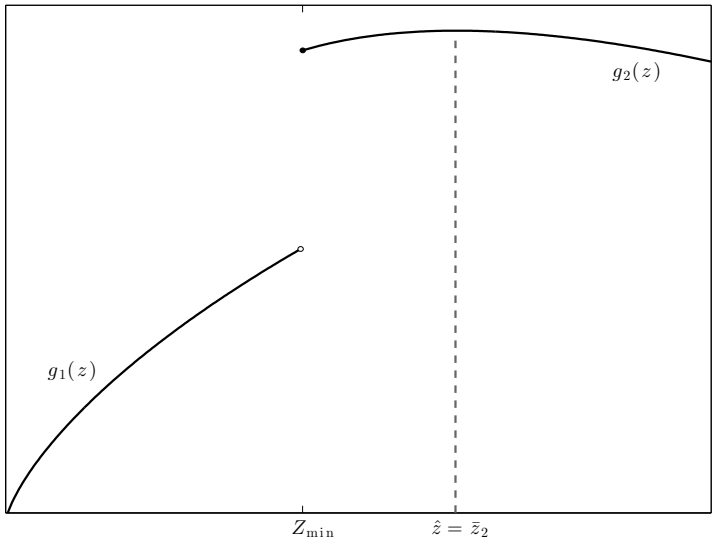

Figure 4. The Incumbent's Optimization Problem

Source: Author's calculation of equilibrium behavior for a parametrization of example functions (see footnotes 14, 19 and 22).

technology is highly cost-effective, the incumbent may invest to the point where dual incentive compatibility holds, which requires $g_1'(Z_{\min}) \geq 0$. In this case, further investments in entrenchment depends on what is optimal given that a coup is avoided. Last, an interior solution $\bar{z}_1$ satisfies $g_1'(\bar{z}_1) = 0$, or:

$$-p_v(\tilde{v})\frac{d\tilde{v}}{dz} = \frac{\lambda}{\bar{f}}.$$

We can therefore write $\hat{z}_1$ as:

$$\hat{z}_1(\epsilon) = \begin{cases} 0 & \text{if} \quad g_1'(0) < 0, \\ Z_{\min} & \text{if} \quad g_1'(Z_{\min}) > 0, \\ \bar{z}_1 & \text{otherwise.} \end{cases} \tag{8}$$

Yet whether this is the optimal behavior depends on what would happen if the incumbent invests beyond $Z_{\min}$. Mathematically, this depends on how $g_2(z)$ behaves; intuitively, the incumbent may have incentives to further invest in entrenchment so as to limit the expansion of firm mass required to appease the opposing elites. To emphasize this causal chain I write $\tilde{\sigma}[z;\epsilon] \equiv \sigma^{\epsilon}(p(\tilde{v}[z];\epsilon))$. Because this link is so crucial, I state it formally:

Proposition 1. *Given the absence of a coup, i.e. $\hat{\mu} = 0$, investments in entrenchment reduce the equilibrium mass of firms. We have: $\partial\tilde{\sigma}/\partial z < 0$.*

Proof. First, if $\hat{v} = 0$, $\sigma^{\epsilon} = 0$ and the statement is vacuous. If $\hat{v} = \bar{v}$, applying the Implicit Function Theorem on (3) yields:[23]

$$\frac{\partial\tilde{\sigma}}{\partial z} = \frac{c(z)}{F(\tilde{\sigma})}\frac{d\tilde{v}}{dz} < 0. \tag{9}$$

■

In short, absent a coup, the incumbent finds a payoff-maximizing 'bundle' of entrenchment and economic concessions. As before, let $\mathcal{L}_2(z) = g_2(z) - \gamma_2^1(Z_{\min} - z) - \gamma_2^2(z - Z_{\max})$ define the Lagrangian of the incumbent's maximization problem over $z \in [Z_{\min}, Z_{\max}]$; the necessary and sufficient first order condition for the unique solution is given by $g_2'(z) + \gamma_2^1 - \gamma_2^2 = 0$, with complementary slackness and $g_2'(z) = -\lambda + f'(\tilde{\sigma})[\partial\tilde{\sigma}/\partial z]$. Since $g_2(z)$ is strictly concave, we can characterize the solution in the same manner as with $\hat{z}_1$: if entrenchment is very cost-ineffective, i.e. $g_2'(Z_{\min}) < 0$, the solution is $Z_{\min}$; conversely, if it is highly cost-effective, i.e. $g_2'(Z_{\max}) > 0$, the solution is $Z_{\max}$. An interior solution $\bar{z}_2$ solves:

$$f'(\tilde{\sigma})\frac{\partial\tilde{\sigma}}{\partial z} = \lambda.$$

Combining these observation, $\hat{z}_2$ can be written as:

$$\hat{z}_2(\epsilon) = \begin{cases} Z_{\min} & \text{if} \quad g_2'(Z_{\min}) < 0, \\ Z_{\max} & \text{if} \quad g_2'(Z_{\max}) > 0, \\ \bar{z}_2 & \text{otherwise.} \end{cases} \tag{10}$$

Finally, by lemma 1 the complete solution entails comparing expected net gain under these strategies:

$$\hat{z} = \underset{z \in \{\hat{z}_1, \hat{z}_2\}}{\arg\max} \; g(z). \tag{11}$$

[23] Using $p_v \bar{f} = c(z)$ from the opposing elite's FOC.

This completes the characterization of the incumbent's optimal entrenchment strategy. To summarize, when the opposing elite is relatively powerful an attempt at a violent regime change occurs. Anticipating this, the incumbent can choose to increase their entrenchment to make such an attempt less likely to succeed. With sufficient entrenchment, both however find it more lucrative to preserve the status quo by bargaining over rents, modeled as access to rent-generating firms. Given this, the incumbent can find further entrenchment optimal, as it improves her bargaining position and thus enables less rent-sharing. Whether the incumbent prefers keeping the market narrow and risking a coup or expanding the market in order to avoid it depends on which regime generates the highest net payoff.

D. Steady States

In section III, an important dimension of extending access to economic organizations was the increased organizational capacity of the opposing elites going forward. While the current model ignores this explicitly, interpreting the model as characterizing steady-states allows us to incorporate this dimension. Specifically, a dynamic steady state can be partitioned into instantaneous effects and expected future effects. Since increasing σ affects both components negatively, there is no difficulty in interpreting $f(\sigma)$ as incorporating both. The rent function can thus be written $f(\sigma) = r(\sigma_1) + \mathbb{E}[R(\sigma_1)]$, where $r(\sigma_1)$ denotes instantaneous rents in the current period. The latter term, $\mathbb{E}[R(\sigma_1)]$, denotes the expected (equilibrium) impact on the future stream of rents, that is, the continuation value. In a similar manner, $\bar{f}$ denotes the continuation value of conflict. The exact value partly depends on the continuation value of being incumbent, and the economic cost of conflict. For our purposes, the absolute value itself is less relevant, as it only shifts the domain of σ where dual incentive compatibility holds. Because the static framework we have developed can be interpreted as a reduced-form steady-state equilibrium of a dynamic model, the added benefit of explicitly adding this dynamic dimension is small relative the cost of a more complex mathematical machinery. Interpreting the model this way allows us to characterize the equilibria as steady-states regimes. I distinguish between a *stable* regime marked by the absence of a coup an *unstable* regime featuring a coup.

Proposition 2. *With weak institutions, low entrenchment produces an unstable regime where the opposing elite attempts a violent regime change. In such environments of political instability, markets are at their most restrictive. A modicum of entrenchment allows a stable regime to emerge, where both elites prefer to preserve the status quo. In such a regime, entrenchment and coercive capacity are used as bargaining tools, and the balance of power determines the necessary level of economic concessions required to avoid a coup. As such, the incumbent has incentives to increase entrenchment, which in turn results in a narrower market and therefore less economic competition. At some point, coercive capacity is monopolized by the incumbent, which results in a minimum of economic competition. Formally, let $f(\cdot), c(\cdot)$ and $p(\cdot)$ satisfy assumptions (I)-(IV) and fix some $\epsilon \in [0, \bar{\epsilon}]$. The unique pure strategy Subgame Perfect Equilibrium that solves (1) and (2) is given by the strategy profile $\left(\hat{S}^o, \hat{S}^e\right)$, with $\hat{S}^o = (\hat{v}, \hat{\mu})$ and $\hat{S}^e = (\hat{z}, \hat{\sigma})$ as defined through (6), (7) and (11).*

When entrenchment is too low, conflict ensues. However, with some measure of entrenchment, a non-violent equilibrium 'in the shadow of violence' can be achieved. This regime features an implicit bargaining over economic rents, whereby the incumbent essentially transfers a portion of her rents to a sufficiently large subset of the opposing elite. But since the structure of the economy is founded on an implicit bargaining between coalitions with coercive capacity, proposition 1 shows that once stability is achieved the incumbent has an inherent incentive to increase entrenchment so as to limit competition. While this benefits the incumbent, it is detrimental for both the opposing elite and the aggregate economy.

This antagonistic relationship between political power and a competitive economy makes growth through competitive markets hard to sustain. This is perhaps most vividly captured in the implication that with weak institutions, if the incumbent monopolizes coercive capacity, far from the 'Weberian' efficient state, the result is a maximum of market restrictions. Proposition 2 establishes the main result of this paper: support for economic competition depends on a latent threat of political violence. For a competitive economy to arise, this coercive threat cannot be too weak nor too great.

E. Comparative Statics

It remains to consider how shocks to the balance of power affect equilibrium mass of firms. The two exogenous factors considered here are (a) shocks to the balance of power—such as foreign influences and support from non-elite actors—as captured by ϵ, and (b) the incumbent's ability to finance entrenchment, captured by λ. Consider first the effects of a higher level of threat against the incumbent. Intuitively, this worsens their bargaining position and thus requires further economic compensation. It turns out that while this indeed is the outcome, the incumbent also increases entrenchment. Hence the net increase in the mass of firms can be quite small.

Proposition 3. *In a stable regime, an exogenous shock to the balance of power in favor of the opposing elite induces a greater mass of firms and thus increased economic competition. However, it also induces greater entrenchment, thereby reducing the opposing elite's coercive capacity investment. For large enough a shock, a stable regime becomes unstable. In an unstable regime, a small exogenous shock to the balance of power has no impact on the mass of firms but increases the probability of a violent regime change. Conversely, a shock favorable to the incumbent leads to the reverse of these effects. Formally, let $f(\cdot), c(\cdot), p(\cdot)$ satisfy (I)-(IV). For an arbitrarily small positive change in ϵ, if the regime is stable ($\hat{\mu} = 0,\ \hat{z} = \hat{z}_2$),*

$$d\sigma^{\epsilon}/d\epsilon > 0.$$

Moreover, if $\hat{z} = \bar{z}_2$,

$$d\hat{z}/d\epsilon > 0,$$

so that $d\tilde{v}/d\epsilon < 0$. For $\Delta\epsilon > 0$ sufficiently large, we have $\hat{z}_2 \to \hat{z}_1$ and thus a shift to an unstable regime. If instead the regime is unstable ($\hat{\mu} = 1,\ \hat{z} = \hat{z}_1$), then both $d\sigma^{\epsilon}/d\epsilon = 0$ and $d\hat{z}/d\epsilon = 0$ while $dp/d\epsilon > 0$. For a negative change in ϵ, the above results are reversed.

Proof. First suppose $\hat{\mu} = 1$. First, $p_\epsilon > 0$. Because $p_{v\epsilon} = 0$, $\hat{v}$ is not affected by a small change in ϵ. By inspection of (8), it then follows that $\hat{z}$ is also unaffected. Now suppose $\hat{\mu} = 0$. If entrenchment is a corner solution, a small change in ϵ induce no change in $\hat{z}$; the full effect is therefore captured by $d\sigma^\epsilon/d\epsilon = \partial\tilde{\sigma}/\partial\epsilon$. Implicit differentiation of (3) gives:

$$\frac{\partial\tilde{\sigma}}{\partial\epsilon} = \frac{p_\epsilon \bar{f}}{F(\tilde{\sigma})} > 0. \tag{12}$$

If $\hat{z} = \bar{z}_2$, we must take into account equilibrium adjustment to $\bar{z}_2$. Thus the full effect of a change to ϵ becomes $\frac{d\tilde{\sigma}}{d\epsilon} = \frac{\partial\tilde{\sigma}}{\partial\epsilon} + \frac{\partial\tilde{\sigma}}{\partial\bar{z}_2}\frac{d\bar{z}_2}{d\epsilon}$. To characterize the latter term, begin by considering the equilibrium effect on $\bar{z}_2$. Treating the first order condition of $\bar{z}_2$ as an identity, implicit differentiation gives:

$$\frac{d\bar{z}_2}{d\epsilon} = -\frac{\partial g_2'(\bar{z}_2)/\partial\epsilon}{g_2''(\bar{z}_2)} > 0.$$

To establish the sign, note that by lemma 1, $g_2''(\bar{z}_2) < 0$. As for the numerator:

$$\begin{aligned}\frac{\partial}{\partial\epsilon}\left[f'(\tilde{v})\frac{\partial\tilde{\sigma}}{\partial\bar{z}}\right] &= f''(\tilde{v})\frac{\partial\tilde{\sigma}}{\partial z}\frac{\partial\tilde{\sigma}}{\partial\epsilon} + f'(\tilde{v})\frac{\partial^2\tilde{\sigma}}{\partial z\partial\epsilon} \\ &= \left(f''(\tilde{v}) - f'(\tilde{v})\frac{F'(\tilde{\sigma})}{F(\tilde{\sigma})}\right)\frac{\partial\tilde{\sigma}}{\partial z}\frac{\partial\tilde{\sigma}}{\partial\epsilon} > 0.\end{aligned}$$

In the last line, the term multiplying the parenthesis is clearly negative. Since $f'' \leq 0$, $f' < 0$, $F > 0$ and $F' = 2f' + (\tilde{\sigma} - 1)f'' < 0$, the sign follows. By proposition 1, $\partial\tilde{\sigma}/\partial\hat{z} > 0$ and the conclusion now follows. In fact, totally differentiate $\tilde{\sigma}[\bar{z}_2(\epsilon); \epsilon]$ by applying the Implicit Function Theorem on (3) to get:

$$\frac{d\tilde{\sigma}}{d\epsilon} = \frac{p_\epsilon + p_v(\tilde{v})\frac{d\tilde{v}}{d\bar{z}}\frac{d\bar{z}}{d\epsilon}}{F(\tilde{\sigma})}\bar{f} = \frac{\partial\tilde{\sigma}}{\partial\epsilon} + \frac{\partial\tilde{\sigma}}{\partial\bar{z}_2}\frac{d\bar{z}_2}{d\epsilon} > 0. \tag{13}$$

For details on the second equality, see appendix A. Because these comparative statics are in the form of derivatives, it follows that a decrease in ϵ yields reversed signs. Finally, suppose that $\epsilon' > \epsilon$ such that $\hat{z}(\epsilon') = \hat{z}_1$ and $\hat{z}(\epsilon) = \hat{z}_2$ (which can always be achieved by setting $\epsilon' = \overline{p}$, $\epsilon = 0$). Then, a shift from ϵ to ϵ' will cause $\hat{z}$ to switch from $\hat{z}_2$ to $\hat{z}_1$ and an unstable regime ensues. Clearly, by reversing the scenario we reach the opposite conclusion. ■

The gist of proposition 3 is that in a stable regime, the degree of economic competition fluctuates with shocks to bargaining position of the incumbent elites. When external factors intensify the coercive threat facing the incumbent, the mass of firms expand.

A subtler point is that such a shock may also induce greater entrenchment and less coercive capacity on the part of the opposing elite. While the net effect is always positive, the effect can be marginal. It highlights the importance of

fostering not only economic development, but also political development. While external pressure (including grass-root movements) can induce the incumbent to expand access to the economy, without changes to the polity, such market expansions are always at the risk of being reversed. Once the external pressure subsides, if the polity remains unchanged the incumbent reverts policy to engineer a restrictive market. Mathematically, that an exogenously induced deterioration of the incumbent's bargaining position cause increased entrenchment follows from the concavity of the opposing elite's payoff curve from accepting status quo (which was given in (3) as $(\sigma - 1)f(\sigma)$). From figure 3 it can be seen that, holding everything else fixed, an increase in ϵ shifts the $\bar{fp}(\hat{v}; \epsilon)$ curve upwards. This means that, on the margin, opposing elites have less to gain from coercive investments since each firm generates less rents. Thus, the opposing elites become more sensitive to investment in entrenchment which in turn renders entrenchment more cost-effective. This amounts to risk-averse behavior on the part of the opposing elite, despite risk neutral preferences (and in fact, risk-averse preferences would only reinforce this pattern). To see this clearly, figure 5 shows graphically how an increase in ϵ affects the incumbent's incentive; while their net payoff is reduced, on the margin the incentive to use entrenchment increases.

A corollary is that exogenous shocks to the balance of power has the greatest impact when entrenchment is ineffective in the margin; either because it is too costly or because it is too inefficient:

Corollary 1. Given a stable regime ($\hat{\mu} = 0$), a small shift in ϵ has the greatest impact on $\hat{\sigma}$ when $\hat{z} \in \{Z_{\min}, Z_{\max}\}$.

Proof. For $\hat{z} = Z_{\max}, Z_{\min}$: $d\sigma^{\epsilon}/d\epsilon = \partial\tilde{\sigma}/\partial\epsilon$. For $\hat{z} = \bar{z}_2$: $d\sigma^{\epsilon}/d\epsilon = d\tilde{\sigma}/d\epsilon$. By (12)-(13): $\partial\tilde{\sigma}/\partial\epsilon > d\tilde{\sigma}/d\epsilon$. ■

The intuition is that when entrenchment either is too costly ($\hat{z} = Z_{\min}$) or monopolized by the incumbent ($\hat{z} = Z_{\max}$), the incumbent can only respond by altering economic concessions. On the one hand, this means that positive shocks can have a relatively large impact on competition in the economy. On the other hand, negative shocks can drastically reduce it.

Turning to the financing of entrenchment, historically many political disputes have concerned incumbents right to taxation and ability to targeted transfers. To some extent, this reflects a conflict over rents and has been formalized through so-called "social conflict" models (see section II). But an overlooked dimension of state finances is that it allows the incumbent to support entrenchment. In this model, the incumbent's ability to finance entrenchment is captured in a reduced form through the incumbent's marginal cost of entrenchment, λ.

Proposition 4. *In a stable regime, an exogenous positive shock to the incumbent's cost of entrenchment induces less entrenchment and causes the opposing elite to invest more in coercive capacity. The resultant shift in bargaining positions induces a greater mass of firm and thereby intensified economic competition. However, for large enough a shock, a stable regime becomes unstable. In an unstable regime, an exogenous positive shock has no impact on the mass of firms but*

increases the probability of a violent regime change. Conversely, an exogenous negative shock reverses these effects. Formally, let $f(\cdot), c(\cdot), p(\cdot)$ satisfy (I)-(IV). For an arbitrarily small positive change in λ, if the regime is stable ($\hat{\mu} = 0,\ \hat{z} = \hat{z}_2$),

$$\begin{aligned} d\sigma^{\epsilon}/d\lambda > 0 \quad &\text{if} \quad \hat{z} = \bar{z}_2, \\ d\sigma^{\epsilon}/d\lambda = 0 \quad &\text{otherwise.} \end{aligned}$$

For $\Delta\lambda > 0$ sufficiently large, we have $\hat{z}_2 \to \hat{z}_1$ and thus a shift to an unstable regime. If instead the regime is unstable ($\hat{\mu} = 1,\ \hat{z} = \hat{z}_1$), then $d\sigma^{\epsilon}/d\lambda = 0$ while $dp(\hat{v};\epsilon)/d\lambda > 0$ conditional on $\hat{z}_1 = \bar{z}_1$. For a negative change in λ, the above results are reversed.

Proof. First suppose $\hat{\mu} = 1$. If $\hat{z}$ is a corner solution, i.e. $\hat{z} = \{0, Z_{\min}\}$, a small change in λ has no impact. For $\hat{z} = \bar{z}_1$, implicit differentiation of the interior solution shows that:

$$\frac{d\bar{z}_1}{d\lambda} = -\frac{1}{c'(\bar{z}_1) + p_v(\tilde{v})\frac{c''(\bar{z}_1)}{p_{vv}(\tilde{v})}} < 0.$$

Because $d\tilde{v}/dz < 0$, we have:

$$\frac{dp(\tilde{v};\epsilon)}{d\lambda} = p_v(\tilde{v};\epsilon)\frac{d\tilde{v}}{d\bar{z}_1}\frac{d\bar{z}_1}{d\lambda} > 0.$$

Suppose $\hat{\mu} = 0$. Again, if $\hat{z}$ is a corner solution, i.e. $\hat{z} \in \{Z_{\min}, Z_{\max}\}$, a small change in λ has no impact. For $\hat{z} = \bar{z}_2$, implicit differentiation of the interior solution gives:

$$\frac{d\bar{z}_2}{d\lambda} = \frac{1}{g_2''(\bar{z}_2)} < 0,$$

by lemma 1. Again, because $\partial\tilde{\sigma}/\partial z < 0$ we find:

$$\frac{d\tilde{\sigma}}{d\lambda} = \frac{\partial\tilde{\sigma}}{\partial\bar{z}_2}\frac{d\bar{z}_2}{d\lambda} > 0.$$

Because these comparative statics are in the form of derivatives, it follows that a small decrease in λ yields reversed signs. Finally, let $\lambda' > \lambda$ and suppose that $\hat{z}(\lambda') = \hat{z}_1$ while $\hat{z}(\lambda) = \hat{z}_2$ (which can always be achieved by setting λ' sufficiently large and λ sufficiently small). Then, a shift from λ to λ' will cause $\hat{z}$ to switch from $\hat{z}_2$ to $\hat{z}_1$ and thus an unstable regime ensues. By reversing the scenario we reach the opposite conclusion. ■

The intuition of proposition 4 is straightforward. If the pre-shock equilibrium features a corner solution, a small shock to the financing cost has no effect on equilibrium behavior. An interior solutions is however sensitive to the financing cost, and entrenchment responds negatively if it increases. This leads to ripple effects as the opposing elite finds coercive capacity investments more lucrative and the shift in bargaining positions forces the incumbent to concede greater

economic concessions. Yet with too weak finances, the incumbent's position becomes so insecure that political instability follows. Figure 5 shows this clearly, an increase in λ unambiguously reduce the marginal gain gain from entrenchment across all levels.

Through propositions 1–4, this model characterizes the link between political conflict. The basic tenet was captured in proposition 2, which characterized the stable and the unstable equilibrium as dependent on the balance of power between the incumbent and the opposing elite. In stable regimes, proposition 1 showed how the incumbent has incentives to use political power to restrict access to the economy so as to limit competition and maximize private rents. In a comparative sense, proposition 3 showed that greater coercive threats against the

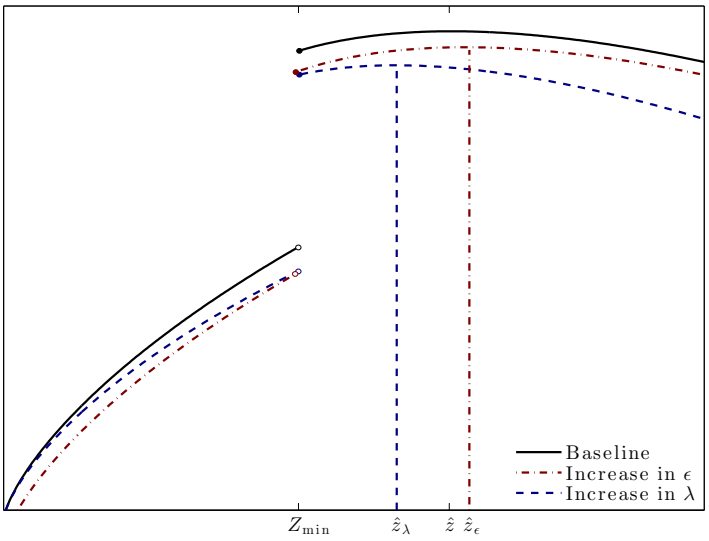

Figure 5. Comparative Statics

Source: Author's calculation of equilibrium behavior for a parametrization of example functions (see footnotes 14, 19 and 22).

incumbent induced greater economic concessions conditional on dual incentive compatibility, it also highlighted the risk that external factors could tip the balance too far, leading to political instability. Finally, proposition 4 showed that a key factor is the incumbent's ability to finance entrenchment and, all else equal, a financially stronger incumbent results in a more restrictive market.

Nevertheless, as with any model that reduces the complexity of social systems into a simple causal framework, assumptions made on the way exposes the model to misrepresenting true causal effects. As such, for a model to have practical relevance it is necessary to test how its explanatory power outside of the sample that generated it. To achieve this substantive task, I now turn to the second part of this paper: analyzing English early modern history through the lens of the model.

V. Analysis of English History

The analysis of English early modern history stretches from 1066 and the Norman invasion, to ca. 1640 and the outbreak of civil war. To test the model's predictive power, I focus on how shocks to the balance of power affected the distribution of rent-generating opportunities in the economy. The analysis is divided into three broad periods of relatively stable politico-economic structures. Part A considers the era following the Norman conquest which is marked by a wide distribution of coercive capacity among elites. This part serves as an introduction to the political and economic landscape examines the emergence of commercial markets in England. Part B turns to the Tudor era which saw a marked increase in government centralization. Finally, part C analyzes the Stuart era of growing authoritarianism and the events leading up to civil war.

A. Normans

Politico-Economic Structure.—The social structure of the early modern English society has its roots in the Norman Conquest of England in 1066 by William the Conqueror. Being a foreign occupant, William needed to spread out his army across the land to ensure that popular uprisings would not threaten his rule. But rather than replacing the existing elites—a risky alternative that would have required significant violence—William I put his generals on top of the existing client-patron networks by creating so-called tenants-in-chief. The political system was a feudal one, where tenants-in-chief gained land and the rents from them, but owed allegiance to the Crown and were expected to supply manpower to the army when called upon.[24] These lords ruled over so-called subinfeudated lands, that is, where they gave lesser lord right to parts of their land in exchange for rents and military allegiance who in turn could do the same. In this manner, English society was a vast client-patron network where all but a few privileged elites were peasants working a plot of land owned by a local lord, who in turn owed allegiance to a greater lord—all the way up to the tenants-in-chief and ultimately, the King.

Power then, came through the control of land and the allegiance of lesser lords that it entailed. Beyond the landed elites were the *gentry*, comprised of landless nobles, self-made knights and entitled merchants. The gentry as such were the most numerous category of elites and incorporated diverse interests. While they had little coercive capacity individually, groups of gentry members would ally with more powerful elites to further their interests. In all, the elites combined—some .5–1% of the population— controlled in the region of 70% of all land.[25] For the purpose of this analysis, the incumbents denotes the *Crown*—the regent and the network of clients directly tied to that persona—and those elites allied with it. The incumbent coalition varied over time as different kings had different agendas that benefited different elites. Against the incumbents stood the elites and their clients.

While creating powerful tenants-in-chief over the existing client-patron network initially allowed William I to spread out his army and control the kingdom, this diffusion of coercive capacity was to create precarious situations for his

[24] For details on the social structure following the Norman Conquest, see Simpson (1986), pp. 80–84.
[25] North, Wallis and Weingast (2009), pp. 93–95.

successors. As the original conquerors perished and new elites filled their shoes, old allegiances eroded and later kings would find a serious challenge to their rule in the wide dispersion of coercive capacity among thousands of elites with private armies.[26] In fact, the Crown had to raise its army by calling on tenants-in-chiefs to supply manpower. Hence, not only did the tenants-in-chief control considerable coercive capacity, the Crown had none on its own. As long as kings did not alienate the entire nobility, the Crown constituted the most powerful entity of the elite establishment. However with coercive capacity ultimately residing in local lords, opposing elites constantly sought greater autonomy. Landed titles (titles with rights to land) evolved into hereditary titles. Individuals with these titles—Barons, Earls, Marquises and Dukes—evolved into the most powerful class of the elite establishment, known as the *peerage*. A landmark concession by Crown that were to reverberate through much of England's early modern history was the signing of the Magna Carta in 1215.[27] The Crown formally agreed to not to have a standing army, to not recruit mercenaries or raise taxes without prior consent from the peers of the Great Council.[28] The Magna Carta set a precedence for illegitimate taxation and as we will see, this precedent was to severely constrain both Tudor and Stuart monarchs.

Coercive Capacities and the Economy.—In the early Norman era, only small local markets existed. However, by the 15th century, England featured a nationally integrated commercial market economy (although agricultural production still dominated). In explaining the emergence of these markets, Greif (2015) argues that the continuous conflict between the Crown and the remaining incumbents on the one side and opposing elites (which at various times drew support from both peers, gentry and sections of the church) on the other side facilitated the emergence of commercial markets. In particular, Greif contends that to counter the balance of power in favor of the Crown, kings supported the growth of autonomous market towns that had their own coercive and financial capacity. This argument is supported by Smith (1976)[1776] who noted that:

> The lords despised the burghers, whom they considered not only as of a different order, but as a parcel of emancipated slaves, almost of a different species from themselves. The wealth of the burghers never failed to provoke their envy and indignation, and they plundered them upon every occasion without mercy or remorse. The burghers naturally hated and feared the lords. The king hated and feared them too; but though perhaps he might despise, he had no reason either to hate or fear the burghers. Mutual interest, therefore, disposed them to support the king, and the king to support them against the lords. They were the enemies of his enemies, and it was his interest to render them as secure and independent of those enemies as he could. (p. 402)

Both Greif and Smith argues that by granting autonomy to these town, they were able to develop relatively secure property rights—for the merchants and gentry, that is—which in turn facilitated the establishment of functioning markets where investments in land, inventory and production were made feasible. In fact, these towns grew in power to the point the Crown itself could not interfere in

[26] North, Wallis and Weingast (2009), pp. 80–84.
[27] North, Wallis and Weingast (2009), pp. 80–104.
[28] The text of the Magna Carta is available at `http://avalon.law.yale.edu/medieval/magframe.asp`.

issues of taxation or military recruitment.[29] Hence, the Crown faced incentives to increase the size of the incumbent establishment by recruiting emerging elites that gained an ability to operate economic and political organizations, precisely as our framework predicts. Indeed, in line with our model, Smith further notes that:

> The princes who lived upon the worst terms with their peerage seem accordingly to have been the most liberal in grants of this kind to their burghs. King John of England [who conceded the Magna Carta], for example, appears to have been a most munificent benefactor to his towns. (p. 402)

Estimating the amount of new marketplaces licensed by the Crown between 1200–1349 in 21 counties (covering 55% England's area), the results of Britnell (1981) supports the argument that markets grew considerably during this period. As figure 6 shows, new markets were routinely established throughout the 13th and 14th centuries, peaking around the end to the 13th century. Importantly, while markets controlled by peers and more entrenched

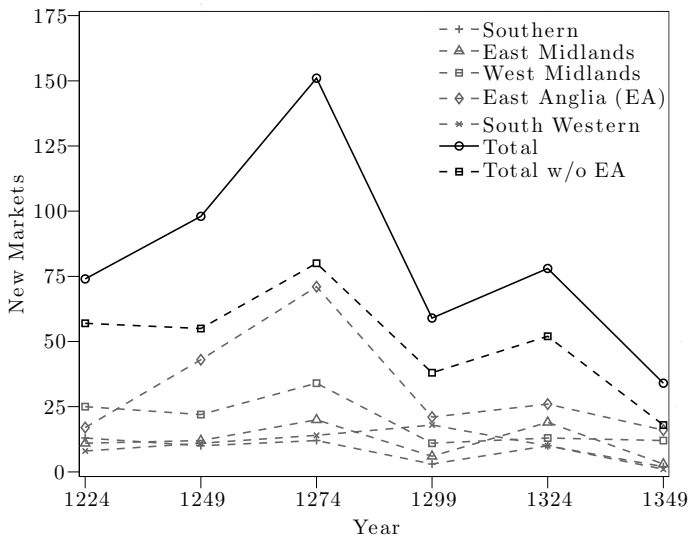

Figure 6. Licensing of New Markets, 1200–1349

Note: Estimated number of royal licenses for new markets places per 25-year period. Data covers 21 counties, representing 55% of England's area. *Source:* Britnell (1981).

incumbents could operate on tradition, new markets needed the direct support of the Crown. In particular, because new markets needed a royal license that established markets operators could waive, the issuing of royal licenses identifies new markets in towns previously outside of the incumbency. However, royal support had also to be forthcoming in enforcing these rights, as new markets hampered the scope for rent-seeking amount already established ones.[30] Indeed, Britnell (1981) note a trend towards greater enforcement of rights to operate markets throughout the period, as royal courts increasingly protected licensees

[29] Maitland (1961), pp. 52–53.
[30] Britnell (1981).

against the whims of landlords and aggressive neighboring commercial elites, in line with the Crown's policy of supporting the emergence of commercial towns. Yet while elites generally prospered, average subjects benefited little. Rigid labor mobility controls and biased legal systems allowed elites to generate quasi-rent by increasing prices and levying fees on ordinary subjects.[31] Of the profits accruing to a narrow economic elite, little was reinvested and average productivity per laborer was stagnant or declined somewhat.[32]

As the 14th century progressed, the Norman political equilibrium crumbled. By mid 14th century, powerful elites hired soldiers directly into their service, so-called retainers, and this structural break had a profound effect on the dynamics of the political equilibrium.[33] With such wide dispersion of coercive capacity, the polity grew increasingly unstable. Following the demise of English wool exports (trade volumes decreased 80% during the 14th century) and defeat in the Hundred Year's War, England descended into the Wars of the Roses (1455–1487), a bloody dynastic civil war.[34]

B. Tudors

New Incumbents and Redistribution of Rents.—Eventually, Henry VII Tudor and his supporters emerged as victors of the civil war and established themselves as new incumbents.[35] Theoretically, a shift in the distribution of power would entail a redistribution of rents towards the empowered groups, at the expense of the old incumbents. Predictably, economic policy under Henry VII followed this paradigm, and below I briefly outline the general manner in which this was achieved.

To subdue peers among the opposing elites—who constituted the most serious threat against the new incumbents—the Crown engaged in a set of ruthless policies aimed at financially constraining peers among the opposing elites, as well as to gradually confiscate their lands. In particular, inheritance laws were exploited to expropriate peers titles and redistribute them to the new incumbents.[36] Yet, perhaps the most substantial shift in political influence came through Henry VII's systematic use of royal officials in local administration, previously the domain of the local lord. This allowed the Crown not only to take de jure control of more land, but also de facto.[37] Importantly, this shift towards central administration meant that royal office-holders gained in political influence. Since these were drawn from the gentry, the reign of King Henry VII saw stark shift in bargaining power away from the peers and towards the gentry at large—previously overwhelmingly opposing elites. A clear indication of the increasing centralization can be seen in a marked increase in regulation, as well as an increased control

[31] Miller (1964).

[32] Using modern techniques, Broadberry et al. (2012) show that GDP per capita was stagnant between the start of their analysis in 1270 until the Black Death in 1349.

[33] Maitland (1961), pp. 11–14, 97–99. The replacement of loyalty ties with payments in military service has been dubbed *bastard feudalism*. McFarlane (1981) and Hicks (1995) conduct detailed studies of the social and political effects of this development from traditional feudalism.

[34] Bell, Brooks and Dryburgh (2007), pp. 8–9; Hicks (2003), pp. 10–29; Miller (1964); Power (1941), pp. 50–57 and Lloyd (1977).

[35] Grummitt (2007); Hicks (2003), pp. 82–91.

[36] Grummitt (2007).

[37] Grummitt (2007) argues that the increased control of county administration was crucial in defeating the serious Cornish rebellion of 1497.

over enforcement through by shift jurisdiction away from manorial courts towards common law courts.[38]

Nevertheless, it is important to recall that King Henry VII's position was still quite insecure. Fiscal needs and dependence on royal officials from the gentry necessitated an increased use of parliament and respect for their concerns.[39] Hence, while the peers saw a general decrease in their coercive capacity, that of the gentry increased materially. As theory predicts, this shift in bargaining power towards the gentry saw a commensurate increase in access to economic organizations. Indeed, of the over 50 parliamentary statutes Henry VII passed, the vast majority originated in petitions from the gentry and merchant community. These statutes helped to stabilize terms of trade, especially by unifying measures and currency, and vested control from foreign merchants. The gentry's growing influence can be seen in the statute of 1497, which temporarily weakened the power of the incumbent trade monopoly, the Merchant Adventurers, and opened up cloth trade with the Low Countries (contemporary Netherlands and Belgium), Spain and Italy to new merchants.[40] As such, new groups of commercial elites were able to influence foreign policy—a domain traditionally off-limits to all but the peers.[41] The effects of increasing economic competition in trade are clearly visible in the data available on English primary export good, cloth. As figure 7 shows, traded quantities hovered around 60,000 units per year during the early years of Henry VII's reign, but took off around 1500 and by the end of his reign averaged around 85,000—approximately a 40% increase in the span of two decades.[42] Importantly, because native English merchants (denizens) were the primary benefactor of this growth, figure 7 is evidence of a reallocation of rents towards previously opposing elites, as theory predicts.[43] Taken together, Henry VII's rule closely fit the framework's comparative statics predictions of a reallocation of rents following a redistribution of coercive capacity.

Centralization and Entrenchment.—The accession of King Henry VIII saw a general continuation of Henry VII's policies. Under a succession of competent administrators, Henry VIII continued the process of state centralization and consolidation of Crown authority which afforded the incumbents a marked increase in entrenchment, as royal legislation gained greater national influence and local elites grew increasingly dependent on royal favors.[44] Importantly, by replacing the Great Council, a large and unwieldy assembly of peers, by the *Privy Council*, a committee handpicked by the Crown, the incumbents gained total control over both legislative and executive power.[45]

[38] Tittler (1998), pp. 10–11.
[39] Morris (2002), p. 138.
[40] Fisher (1940).
[41] Chrimes (1972), p. 203; Morris (2002), p. 138.
[42] Ramsey (1953).
[43] While incumbent merchants certainly benefited from this growth, there is clear evidence of a surge in new merchants (Fisher 1940).
[44] Elton (1977), especially pp. 60–63, 213–217 & 323; Hindle (2007) as well as Neale (1953), p. 15.
[45] Dean (2007); Elton (1975). This occurred especially under Cardinal Woolsey and later Thomas Cromwell. Woolsey extended the jurisdiction and influence of the royal court of appeal, the Star Chamber, as well as the King's control over its decisions—it gradually evolved into a political power-tool used to enforce royal interests through dubious legal procedures that included perjury and torture (Elton 1977, pp. 48–63; Pollard 1922; Maitland 1961, pp. 220–221, 263–263). Cromwell was instrumental in replacing the King's Council with the much narrower Privy Council to which the King was free to appoint members.

Theoretically, such drastic increase of entrenchment entails a concentration of rents among incumbents, as the bargaining power of the opposing elites diminishes. Indeed, this is precisely what happened. The Crown's long standing commercial ally, the Merchant Adventurers, regained much of its past political power and with it, its economic privileges.[46] Indeed while the cloth trade went into general decline, the Merchant Adventurers kept their sales steady and saw modest growth.[47]

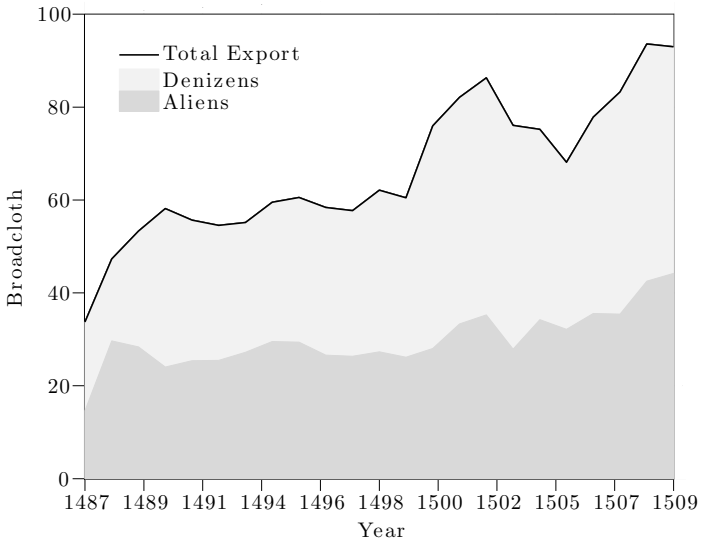

Figure 7. Exports of Cloth, 1487–1509

Note: Estimated amount of cloth exported by denizens (native English) and aliens (foreigners) based on the enrolled customs accounts of Henry VII. *Source:* Ramsey (1953), p. 181.

Ironically perhaps, Henry VIII himself was to cause decades of severe political instability. By taking on a succession of wives (presumably in the quest for a male heir), he caused profound religious and political rifts among the elites and the population at large.[48] Upon his death, the polity collapsed into a prolonged period of violent political instability as different factions vied for power.[49]

Low Entrenchment and Redistribution of Rents.—Eventually Elizabeth I, Henry VIII's last living child, inherited the throne. To properly analyze the political dynamics of her regime, I first consider the political context of her time, turning then to explaining economic policy.

The first Privy Council of 1540 shows that out of 19 members, eight were knights, eight were peers and three were prelates. The last three held no administrational office, but were simply there to represent the church's interests. With the Privy Council, the administrational powers of the Crown and the peerage increased markedly (Elton 1975, 1977, pp. 213–217; Guy 1986).

[46] Fisher (1940); Lingelbach (2010), pp. xxvii–xxviii.

[47] Brenner (1993), pp. 8–11. Primarily the trade of the Hanse Merchants was damaged during this time. Indeed, after the demise of the so-called Staplers, the Merchant Adventurers set their target on the Hanse League, going as far as a direct invasion of the Hanse League's territory (Lingelbach 2010, pp. xxvii–xxix).

[48] MacCaffrey (1968), pp. 16–17.

[49] As he was succeeded by his 9-year-old son from his third wife, the regency council ruling in the young king's stead featured intense power struggles and general political breakdown (Hoak 1978, 1980).

After decades of political instability, facing the young queen were coercive threats on multiple fronts. First were the religious rift that divided the country at large. It was a chief cause of popular unrest and produced both militant protestant and catholic zealots among the elites whose intransigence seriously threatened stability.[50] Second, her court was factionalized into powerful camps that had developed over the tumultuous years of past regimes, each with the primary objective of gaining power at the other's expense.[51] Moreover, herself a professed protestant, she faced serious international threats. Finally, because she had been declared illegitimate by her father, Henry VIII, her claim to the throne was tenuous; to the north the avowed catholic Queen Mary of the Scots had a better claim to the throne and could call on both France and Spain for support.[52] The political instability facing Elizabeth I was very real; the first half of her reign featured frequent outbreaks of violent confrontation between coalitions of elites. Using Brecke's (1999) Conflict Catalog to measure the incidences of internal political violence, figure 8 shows the stark difference in coercive threat environments across the Tudor monarchs. Admittedly, the incidence of a violent conflict is not a perfect proxy for the coercive threat facing the incumbents, but

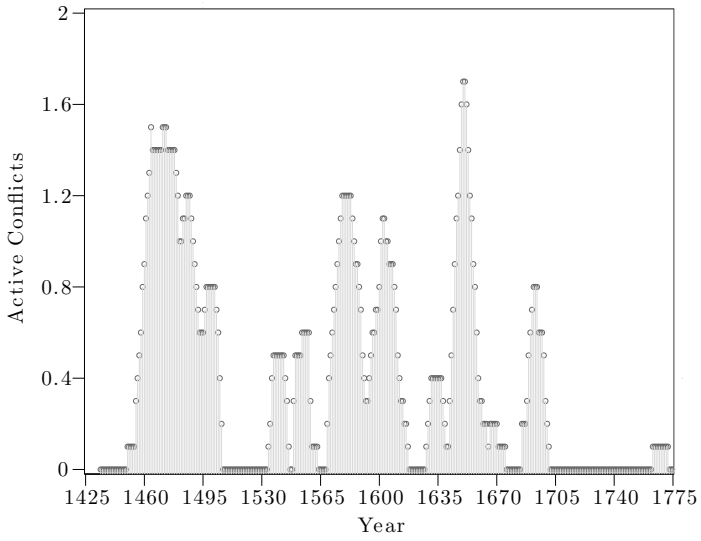

Figure 8. Trends in Internal Conflicts, 1425–1775

Note: 10-year moving averages of the number of active conflicts registered in a year. A conflict is registered if it leads to more than 32 deaths. Internal conflicts are coded by the author as conflicts with intra-state actors. *Source:* The Conflict Catalog (Brecke 1999).

it does highlight the stark difference in political (in)stability that Elizabeth I faced. Her accession to the throne in 1558 marks the onset of a period with markedly higher levels of violent conflict incidences; only in her last years (1600–1603) does coercive threats recede entirely. It was primarily the older and more

[50] See MacCaffrey (1968), esp. chs. 1, 2.
[51] Elton (1976); MacCaffrey (1968), pp. 35–36.
[52] Neale (1953), pp. 15–25. Following her excommunication by the Pope, King Philip II of Spain attempted numerous invasions of England, continually supported intrigues at both the English and the Scottish court, and even occupied Ireland.

catholic lineages of the peers that were alienated from Elizabeth's regime, causing dual incentive compatibility to break on multiple occasions.[53]

Our model suggests that such shocks to the balance of power results in a weakened bargaining position of the incumbents (especially its central entity, the Crown) and thereby induce greater economic concessions. Moreover, the financial costs of entrenchment also increased along with the multiplicity of new sources of threats. From a theoretical point, this too should induce greater economic concessions. In accordance with these predictions, the Crown made considerable economic concessions. To mitigate confrontation with opposing elites, Elizabeth I reduced the Privy Council to a mere 13 members and avoided calling Parliament insofar she could afford it.[54] Nevertheless, the high coercive threat against the incumbents coupled with poor finances inevitably gave opposing elites (and incumbents) a much enlarged scope for rent seeking. In this respect, the Statute of Artifices (1563) is highly illuminating. The statute sought to increase the control over labor markets by limiting labor mobility, reducing new entry by imposing onerous apprentice rules, as well as fixing maximum wages and prices—measures designed to increase the rents accruing to the elites.[55] Restrictions on entry were particularly severe; potential entrants in commercial industries had to spend 7 years in apprenticeship to an incumbent artificer, and every incumbent was limited in the amount of apprentices they could hold.[56] Moreover, legislation was aimed at preventing non-elites from entering altogether.[57] Another example of rent seeking—particularly egregious case—was a parliamentary bill that made it compulsory to eat fish on Wednesdays—motivated explicitly as a means to prop up declining export profits.[58]

In general, English merchants used the Crown's weak entrenchment to tilt the competitive landscape against foreign merchants, who were all but removed from the English cloth trade. In London alone, foreign trade went from an annual average of between 20–40,000 cloths to virtually 0 at the end of the 16$^{\text{th}}$ century, while the market grew from an annual average of between 40–60,000 to well above 100,000.[59] In fact, it is in the Elizabethan era that the famous East India Company, Levant Company, Turkey Company and Muscovy company were all created, and these would later replace the Merchant Adventurers as the dominating merchant elite entities.[60] Importantly, at the time of their creation, these companies represented an expansion of the market towards opposing elites who traded financial support of the Crown in exchange for economic privileges.[61]

Reduction in Coercive Threats.—By 1600, the coercive threats against Elizabeth I had all but receded. From a theoretical point of view, such a reduction in

[53] Dean (2007), pp. 47–48, 54; MacCaffrey (1968), ch. XIII. The gravest threat occurring in 1569, when the old ruling peerage of the north rose against Elizabeth I with the purpose of placing the catholic Queen Mary of the Scots on the throne.

[54] Dean (2007), pp. 45–46. See also Neale (1953, 1957).

[55] Fisher (1940); Woodward (1980).

[56] Dunlop (1911); Woodward (1980); Hill (1961), p. 114.

[57] Dunlop (1911); Woodward (1980). Unless the son of a noble or merchant, the apprentice's father had to pay an annual fee and only if a rural family owned property could it send a son into apprenticeship in a town—otherwise he had to stay in the countryside.

[58] Neale (1953), pp. 114–115.

[59] Brenner (1993), pp. 8–11; Fisher (1940).

[60] Brenner (1993), pp. 61–65.

[61] Brenner (1993), p. 61.

threat environment instead prompts a concentration of rents among incumbents, and that is precisely the course of events in Elizabeth I's later years. In particular, it is now that the practice of granting monopolies to incumbent elites takes off. Originally, monopolies were intended to incentivize large capital investments in industries like mining. However, they quickly evolved into a rent-sharing scheme where the Crown sold off monopolies to incumbents; both parties transacting purely out of rent-seeking motives.[62] While opposing elites were pushed out of a growing number of markets, incumbents benefited greatly.[63] A telling case is the Turkey Company. Created in 1581 by royal proclamation, it comprised twelve of the most powerful incumbent merchant elites. The Turkey Company was granted an exclusive monopoly on trade with the entire Middle East—a trade worth some £100,000 a year (of which £10,000 reached the Crown's exchequer).[64] Incidentally, the Turkey Company provides a clean indication on the economic effects of these monopolies. In 1589 the monopolies of the Turkey Company and Venice Company lapsed, but intra-elite conflict delayed their renewal to 1592. During this three-year period of almost free trade with the Middle East and the Mediterranean, an average of 18,000 "hundredweights" of currant was imported annually. When the monopolies were reintroduced as the privilege of the Levant company, average annual trade volumes dropped by 50%.[65,66]

Having reached the end of the Tudor era, it is helpful to briefly consider some broad observations about the economy. The absence of ravaging wars together with the Tudor monarchy's centralizing efforts—especially standardization of weights and measures—allowed a degree of economic growth.[67] However, this growth did not benefit ordinary subjects, but was funneled by the elites. To support the above qualitative analysis, figure 9 uses data from Clark (2007) on real wages (farm labor, but other types of labor is highly correlated during the time-period considered) to plot income per capita. As can be seen, real wages were almost halved during the Tudor-era.[68] In contrast, Broadberry et al. (2012) shows that using aggregate output, GDP per capita remained stable during this period (see also figure 10). As the bargaining power of various groups shifted, economic regulation followed suit so as to redistribute rends in accordance with the balance of power. Overall, Tudor era economic policy fits well within a framework of intra-elite conflict. Ultimately, the unambiguous losers of this conflict were ordinary subjects, whose liberty and welfare were the first victims.

[62] Dean (2007), p. 50; Price (1906), pp. 5–6.

[63] Dean (2007), p. 48; Price (1906), 7–25. This of course, was not lost on the opposing elites. In 1571, Robert Bell criticized monopolies in parliament, famously arguing that "by licenses, a few only were enriched and the multitude impoverished." (Neale 1953, p. 218).

[64] Brenner (1993), pp. 62–63. The company's history is quite remarkable. Of the twelve merchants, eight were aldermen (governors) of London. Most were also related to or worked closely with the top echelon of the Privy Council. The creation of their charter "coincided" with a £5,000 loan—later made a gift—to Elizabeth I.

[65] Brenner (1993), pp. 64–65.

[66] In her very last years, Elizabeth I disbanded many of these monopolies to gain parliamentary financial support. In the Parliament of 1593, Lord Burghley noted that the last subsidy—which had been extraordinary in that a double subsidy had been granted—had only generated £280,000 while the Crown had spent in the region of £1,030,000 on protecting English interests against foreign aggressors; indeed only the support of the Dutch rebellion cost the Crown £150,000 annually (Neale 1957, pp. 300–302, 352–361, 376–393). Monopolies however, enter center stage again only a handful of years later.

[67] Hill (1961), pp. 30–32.

[68] Supporting Clark's (2007) estimates, Knoop and Jones (1933, p. 238) finds a similar pattern for skilled labor while Rogers (1887, pp. 664–671) finds an even steeper decline for unskilled labor.

C. Stuarts

Entrenchment and Intra-Elite Conflict.—By the time of Elizabeth I's passing, the incumbent elites were relatively firmly entrenched in a stable political equilibrium. The accession of the Scottish King James I was notable for its relative tranquility.[69] As figure 8 shows, the early years of James I's reign features an almost total lack of internal conflict. Moreover, James I's catholic ties served to markedly reduce the coercive threats from abroad, particularly the belligerent Spain. The entrenchment build up under previous regents, together with the sudden reduction in external coercive threats, afforded a narrow group of incumbents to dominate policy through the Privy Council.[70] Their policies of exclusion, together with a king bent on resisting any economic concessions, quickly sparked intensified intra-elite conflict that lead to the dissolution of parliament

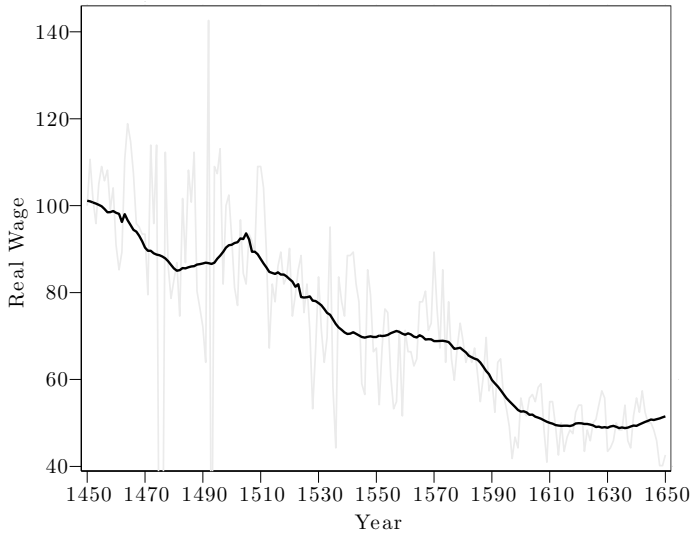

Figure 9. Real Wage of Farm Labor, 1450–1650

Note: 1450=100; grey line plots original data, black line fits Savitzky–Golay filter (N=3, M=61). *Source:* Clark (2007).

in 1610 before any bills could be presented; in 1614, the House of Commons refused to finance the Crown, depriving it of some £100,000 in annual revenues.[71] Left without tax income, the Crown's finances deteriorated rapidly. Hume (1983)[1778] estimated that in 1617, James I's Exchequer was running an 8% deficit.[72] In its absence, the Crown resorted to a set of unsustainable policies, chief among which was the selling off of royal land, thereby exacerbating future budget deficits.[73] The Crown also attempted to indirectly levy taxes through im-

[69] Smith (2003).

[70] Smith (2003). The exact identity of the incumbents varied; the first coalition was centered around the Cecil family, then followed a coalition build around the Howard family and later a coalition centered on the duke of Buckingham.

[71] Price (1906), pp. 26–31.

[72] Hume (1983), p. 135. Total revenues amounted to £450,000. Of these, land rends of £80,000, customs and new impositions of £190,000, and wardships (control of peerage titles inherited by a minor) of £180,000. Total expenditures amounted to £486,000.

[73] Around 1600, Land rents constituted approximately 39% of total revenues. By 1640, this figure

positions (customs duty) that circumvented parliamentary consent, which sparked intense opposition—precisely because it threatened to grant the Crown financial independence from the Parliament.[74] We can understand their resistance against the model's comparative statics: by gaining greater financial control, the cost of entrenchment decreases dramatically, leading to a worsened bargaining position for the opposition elite.

As intra-elite conflict persisted at relatively high levels, political institutions grew increasingly ineffective in mediating disputes. Circumventing Parliament altogether, the Crown took to auctioning monopolies as a means of obtaining financial support while simultaneously reinforcing incumbent elite's loyalty.[75] Under the Stuarts, monopolies were created solely to maximize rents accruing to its benefactors.[76] Such opportunism and the Crown's short-sightedness destabilized the incumbent coalition as its members frequently found themselves the target of the Crown's hunt for revenue. The Cockayne project serves to illustrate this point: Cockayne, an alderman (member of governing council) of London, and his fellow cronies persuaded the Crown that they could create a cloth finishing industry in England if given a monopoly, and would in turn provide the Crown with annual revenues of £47,000.[77] Unfinished cloth had dominated English exports for over a century and was firmly in the hands of the Merchant Adventurers, but dying the cloth into the final good was an industry dominated by artisans in the Low Countries. To create this industry, domestic cloth had to be retained at home. Hence, the Crown put an embargo on the Merchant Adventurer's exports, causing financial ruin for its incumbents. But the Cockayne consortium did not possess enough skilled artisans to meet demand. Foreign customers switched suppliers and trade volumes dropped 33%.[78] The Merchant Adventurers were eventually allowed to repurchase their charter for a lump-sum of £80,000, but by then their market power had eroded substantially. Trade volumes in 1640 were a mere 45% of the quantities traded on the eve of the Cockayne project in 1614.[79] The Cockayne project also serves as a vivid illustration of the forces keeping economies with weak institutions trapped in low-growth environments; growing enterprises are at any time liable to expropriation by the very regime supposedly protecting them. In fact, as the more profitable they are, the greater the incentives among other elites to expropriate them.

Peak of Entrenchment.—As with the analysis of Elizabeth I regimes, before delving into economic policy, I begin with characterizing the political context of Charles I's regime. With the accession of Charles I in 1625, intra-elite conflict

had dropped to 14% (Hoyle 1992, pp. 5–6). See North and Weingast (1989) for an analysis of Crown finances; see Hoyle (1992) for a detailed treatment of Crown lands.

[74] Brenner (1993), pp. 205–206, Smith (2003).

[75] Price (1906), pp. 20–34. This link underscores an important degree of endogeneity between the incumbent's finances (i.e. λ) and the distribution of rents (i.e. σ) not captured by our model. The pattern shows how incumbents in need of further finances in times of high intra-elite conflict respond by increasing the concentration of rents even further among incumbents, in exchange for political and financial support. While this narrows the access to rent-generating opportunities, thereby eroding incentive compatibility among opposing elites, it also strengthens the cohesion of the incumbent coalition. An obvious motive behind such moves is to prevent collective action problems from arising by aligning incumbent's incentives.

[76] While many monopolies had been abolished under Elizabeth I, the prerogative to issue new ones still remained with the Crown (Price 1906, pp. 20–34).

[77] Brenner (1993), p. 210.

[78] Muldrew (2003).

[79] Brenner (1993), pp. 23–24, 211.

intensified as the king systematically attempted to increase entrenchment to the point of absolutist rule.[80] Charles I steadily increased entrenchment through a series of political maneuvers that greatly entrenched a narrowing circle of empowered incumbents. In particular, the Crown's failure to summon Parliament deprived the opposing elites a political platform through which to coordinate themselves. Instead, Charles I expanded the Privy Council to 40 members and relied on it for the execution of his policies. But true policy-making instead moved out of the council, with a small circle of highly powerful trustees formulating policy; the Privy Council thus grew into the role previously reserved to the Parliament.[81] The difference was that Charles I could control the members of this "parliament" and thus ensure it enforced the Crown's policies. To facilitate the increased entrenchment, the Crown had to strengthen its ability to enforce regulation. To do so, it encroached on the jurisdiction of Common Law by the use of the *Star Chamber*, the royal prerogative court. Because the judges were appointed by the Crown and paid through its Exchequer, Charles I simply fired or failed to remunerate judges that ruled against his interests. In this way, the Star Chamber became the legislative body of the Crown.[82] The basis of this concentration of power had been laid by the Tudor regents, under whom the government centralization had progressed rapidly, allowing policy to penetrate most parts of society. The lack of standing armies had evened out the coercive capacity of opposing elites relative that of the incumbents, and recent development in military technology had tilted the balance in favor of the incumbents. During the 16th century, replacement of bows and swords with guns and cannons enabled the incumbents to monopolize the domestic production of military materiel, de facto shifting the balance of power in the favor of the Crown.[83] Hence, throughout the Tudor and Stuart period, coercive capacity gradually converged on the state, now firmly controlled by the incumbents. Predictably, such a drift in the balance of power eventually resulted in a reallocation and concentration of rents.

Gradually, private property rights deteriorated. Deprived of direct means of taxation, the Crown even auctioned off rights to collect trade customs, giving rise to customs farms, which empowered a few incumbent elites to collect customs from other merchants.[84] To circumvent growing opposing elite resistance, the Crown increasingly empowered a narrowing circle of dominating commercial elites, who received favorable economic policies in exchange for financial and political support.[85] The Crown even engaged in overt expropriation; in 1640 the "government seized £130,000 of bullion which private merchants had placed in the Tower [of London] for safety, causing numerous bankruptcies."[86]

[80] Andrews (1912), p. 262; Brenner (1993), pp. 222–225, 281; Reeve (1989), pp. 3–4, 173, 211; Rowley and Wu (2014), p. 46; Smith (2003).

[81] Smith (2003).

[82] Maitland (1961), pp. 218–311; North and Weingast (1989); Price (1906), p. 30.

[83] Neale (1957), pp. 369–423. This point also highlights why political and economic development in 17th century England was not an "elites versus masses" case: the subjects simply lacked any coercive power whatsoever. While several popular revolts and incidents of social unrest occurred during both the 16th and 17th centuries, none was successful (Hill 1961, pp. 26–27).

[84] Braddick (2003); Brenner (1993), pp. 201–202; customs farms were used by the Crown to extend its patronage network beyond the landed classes. Since land and administration of land were allocated through court, much of the non-landed commercial elite was excluded from rent-generating opportunities. By outsourcing royal offices related to trade, non-landed elites could be incorporated.

[85] Brenner (1993), pp. 240–241.

[86] Hill (1961), p. 103.

Monopolies became the principal means through which incumbents took command of the economy. Importantly, new monopolies were issued to corporations that allowed groups of incumbents to pool their resources together. These newer monopolies had a devastating effect on the mass of economic enterprises in the market, prompting a slump in economic performance during much of the early 17th century.[87] In fact, the incumbents attempted to subject all London merchants to a set of monopoly corporations. Given that London accounted for approximately 90 % of all trade, this plan amounted to controlling the economy from the top down through a set of incumbent oligarchs.[88] Because monopolies could use a right of "search" to penalize firms outside of the monopoly, they were granted enormous market power.[89] The Playing Cards monopoly serves to illustrate the rent-seeking logic of Charles I:

> The Playing-card makers in London and within a radius of 10 miles were incorporated [granted monopoly], with the right to search throughout England. Whatever card makers were without the corporation would fall in the general fate of all independent producers whose work was subject to inspection and sealing of competitors. A rent of 12s. per gross was reserved to the King, and another another 12s. was to be exacted as a fee for sealing. Later, the king undertook to engage directly in the business. By the new indentures, the king covenanted to purchase of the company a weekly quantity of cards. The King expected to sell at an advance that would yield him £5,000 or £6,000 annually.[90]

While the domain of the monopoly was a narrow region around London, it could push out competitors by artificially inflating their costs. In this manner, small-scale independent manufacturers either succumbed to monopolies or faced financial ruin. But buying into a corporation was expensive and designed so as to benefit the incumbents.[91] In a time when average subjects had assets worth at most £3, the Earl of Salisbury extracted £7,000 *a year* in rents from his monopoly on silk, while the Earl of Suffolk enjoyed monopoly rents of £5,000 p.a. and the Earl of Northampton of £4,500 p.a..[92] Scarcely a single consumer good was left untouched, as captured by Hill's (1961) description of a man living

> in a house built with monopoly bricks, with windows (if any) of monopoly glass; heated by monopoly coal.[...] His walls were lined with monopoly tapestries. He slept on monopoly feathers, did his hair with monopoly brushes and monopoly combs. He washed himself in monopoly soap, his clothes in monopoly starch. He dressed in monopoly lace, monopoly linen, monopoly leather, monopoly gold thread.[...] He ate monopoly butter, monopoly currants, monopoly red herrings, monopoly salmon, and monopoly lobsters. His food was seasoned with monopoly salt, monopoly pepper, monopoly vinegar. He smoked monopoly tobacco in monopoly pipes, played with monopoly dice or monopoly cards, or on monopoly lutestrings; read (through monopoly spectacles, by the light of monopoly candles) monopoly printed books[...] printed on paper made from monopoly-collected rags, bound by sheepskin in monopoly alumn.[...] A monopolist collected fines which he paid for swearing.[...] When he made his will, he went to a monopolist. (p. 32)

[87] Hill (1961), p. 36. Broadberry et al. (2012) estimate that the GDP per capita declined by 0.04% p.a. during 1600–1650, as compared to a an average increase of 0.12% p.a. between 1550–1600.
[88] Hill (1961), p. 21; Price (1906), p. 39.
[89] Price (1906), pp. 35–40. Another typical case is the monopoly on starch: their monopoly was only local, but their aggressive use of "search" as well as apprenticeship rights effectively forced other actors out of the market or into subservient positions within the monopoly corporation.
[90] Price (1906), p. 39.
[91] Price (1906), pp. 37–41.
[92] Stone (1952).

Overseas trade grew dominated by a group of capitalists centered on a few coalitions of elites—the Aldermen of London, the customs farmers, and the trading companies—as the Crown manipulated regulations in exchange for increased financial support.[93] As an indication of the effects of these policies, figure 10 uses Broadberry et al. (2012) GDP per capita estimates to plot the long-term trend across two centuries. The accession of Charles I coincides with the positive trend reversing, followed by a sustained declined during his reign that hits a two-century low point in 1638. In fact, the long term trend fits the model's predicted pattern quite well; the early years of Henry VII's reign featured low entrenchment and is associated with a strong growth in GDP per capita. His later years, when power

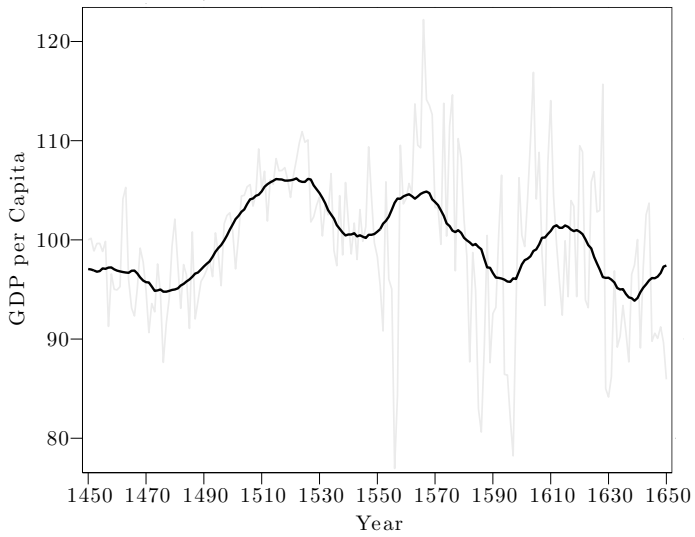

Figure 10. GDP per Capita, 1450–1650

Note: 1450=100; grey line original data, black line Savitzky–Golay filter (N=3, M=61). *Source:* Broadberry et al. (2012).

had been consolidated, coincides with a reversal of the trend and the start of a long run decline throughout the remaining Tudor and Stuart era. This period is features a long run trend towards growing entrenchment.[94] Tellingly, sustained productivity growth (not shown, see Broadberry et al. (2012)) is only achieved after the civil war, when monopolies were essentially dismantled and market regulations drastically reduced.[95]

Invariably, these policies hurt both opposing elites and ordinary subjects. In order to extract rents from these groups, the Crown would levy fees and customs on incumbents, only to later change regulations so as to guarantee their profits while shifting the burden down- or upstream.[96] For instance, when the Vintners Company were obliged to pay an annual cash fee of £30,000, the Crown

[93] Brenner (1993), pp. 200–201.

[94] Furthermore, the years after Henry VIII and early years of Elizabeth I's reign when entrenchment was low coincides with an increase in GDP per capita. Elizabeth I's later years of growing entrenchment is associated with a trend reversal. Nevertheless, it is important to bear in mind that these trends are indicative at best.

[95] For post-war policies, see Braddick (2003) and Muldrew (2003).

[96] Brenner (1993), pp. 284–290.

ensured their rents by proclaiming by royal decree a minimum quantity to be bought by domestic retailers at a given price.[97] As the incumbent's entrenchment grew, rents were reallocated and concentrated in the incumbents in a manner tightly fitting the model's predictions.

By 1638, the personal rule of Charles I was firmly entrenched and on its way to financial stability.[98] The Crown's ordinary budget had nearly doubled, and by the 1630s it generated revenues in the region of £900,000. Of these, at least £100,000 were monopoly rents; customs impositions generated north of £200,000, with total customs-related revenues amounting to £400,000; Ship Money amounted to over £200,000.[99] With the expanded Privy Council assuming the role of a cherry-picked Parliament, government was firmly controlled by the incumbents.[100] Supported by increasingly powerful incumbent elites, ranging from peers and landed gentry to merchants and capitalists, the Crown could manipulate both legislation and enforcement through the tightly controlled royal judicial corps and the Star Chamber.[101] Meanwhile, the opposition lacked the sufficient coercive capacity; having been deprived of the political organization through which to organize opposition—Parliament—the collective action problem was immense; it only allowed for small pockets of active opposition.[102] Without any external shocks to the political system, the Crown would most likely have triumphed in its absolutist ambitions.

Break of Dual Incentive Compatibility.—Suddenly, the coercive threat environment of the incumbents took a sharp turn for the worse as the peers of Scotland rose in rebellion. The very real effects of this event can be seen in figure 8; incidences of violent internal conflict spikes in the final years of the 1630s and persist through the 1640s. Recall that while our model predicts that moderate shocks to the equilibrium induce an expansion of access to economic organizations and therefore increased competition in the economy, too large shocks instead break dual incentive compatibility and induce political instability. Fitting tightly with this prediction, that was precisely the consequences of the Scottish rebellion.

For while Charles I's budget was barely balancing in normal times, he had no means to raise an army against the Scots, and could only watch as the Scottish peers crossed the border, occupied Newcastle and demanded £850 a day to not advance further south.[103] At this point, Charles I faced a desperate financial situation and a crumbling polity. While firmly supported by incumbent elites, after a decade of arbitrary policies and widespread corruption, the hostile opposing elites had swelled to include several peers and much of the gentry and commercial elites.[104] Summoning the English peers in York, the King faced pres-

[97] Brenner (1993), pp. 283–285.
[98] Braddick (2003).
[99] Russell (1973), p. 100; Thomas (1983), pp. 106, 120–121, and Hill (1961), p. 55. As for monopoly rents, Hill (1961, p. 32) puts it at £100,000, while Price (1906, p. 42) finds that the wine-, tobacco- and soap-monopolies alone yielded revenues of £30,000, £13,000 and £31,000, respectively, for a grand total of £74,000. While the remaining monopolies were not as profitable, the sheer amount of them makes £100,000 a conservative estimate.
[100] Smith (2003).
[101] Brenner (1993), pp. 291–292; Peacey (2003); Smith (2003).
[102] Peacey (2003).
[103] Smith (2003).
[104] Adamson (1990); Brenner (1993), p. 203, ch. VI; Hill (1961), pp. 101–103, 117–119; the leading figures of the early opposition were the Earls of Essex, Pembroke, Northumberland, the Viscounts Saye

sure from several prominent peers (many of whom were leading opposing elites) to summon Parliament.[105] Charles I duly obliged. This time however, the opposing elites—who had loosely allied with the Scots—where bargaining from a position of strength.[106] As theory predicts, the dramatic shift in the balance of power prompted a flurry of legislation that was meant to markedly constrain the Crown; the Triennial Act (1641) secured regular meetings of Parliament even if the King failed to summon it; domestic monopolies were dissolved and Parliament revoked all non-parliamentary taxes and fees not approved by it, royal prerogative courts, such as the Star Chamber, where abolished.[107] Indeed the Grand Remonstrance (1641) contained as many as 204 clauses designed to nullify Charles I's rule.[108]

The incumbent elites pushed back by increasingly coercive means, once by marching into parliament with 80 soldiers to imprison the opposing elite leaders.[109] As the intra-elite conflict escalated throughout 1638–1642, a string of violent local power struggles occurred between peers exploiting the situation to regain or increase control over local area of influence.[110] The conflict dragged on and the elite establishment degenerated into a complex web of fleeting coalitions that made reaching a settlement increasingly unlikely.[111] Eventually, after negotiations ground to a halt, followed by a radicalization of opposing sides that combusted into full scale civil war.[112]

VI. Discussion

A. England's Development

A frequently cited argument of English development holds that as a side effect of the Black Death, the English aristocracy lost its stranglehold on the general population, allowing a trading class to gradually emerge. Colonization led to exponential growth of trade, which in turn produced an affluent middle class that increasingly challenged the decaying aristocracy, to the point the aristocracy willingly implemented self-constraining institutions rather than facing a revolution (e.g. Acemoglu and Robinson 2000, 2012; Justman and Gradstein 1999; North

and Sele, and the lords Brooke and Mandeville, all of whom had been shunned throughout Charles I's reign. Moreover, Saye, Sele and Brook had substantial interests in colonial trade and had over the 1630s forged an alliance with opposing merchant elites. Hence, the peers among the opposing elites enjoyed quite broad support, even control over London. For instance, 22 London merchants were elected into the House of Commons. Of these, 12 were incumbent monopolists: they were later expelled from Parliament by the House of Commons. In general, among the gentry with business connections, there were more against the Crown than supporting it.

[105] Peacey (2003). Many of these twelve would play leading roles in the Civil War against the King (Smith 2002, ch. 4).

[106] Smith (2003).

[107] Hill (1961), pp. 109–110, 152; Rowley and Wu (2014), pp. 47–48. The Parliament earned its name from its refusal to dissolve upon the request of the King, staying until 1648.

[108] Smith (2003).

[109] Hexter (1978).

[110] Adamson (1990)

[111] Peacey (2003).

[112] The causes and effects of the civil war are highly complex and still a hotly debated topic. Broadly, three competing schools of thought disagree about whether conflict was due to long-term factors—making it more or less inevitable—or an accidental outcome of a set of intermingled short-term factors. See Peacey (2003) for an introduction to the debate. For an account of the civil war and interregnum (1640–1660), see Adamson (2008); Hill (1961), pp. 116–239; (Hirst 1999), chs. 8–13.

and Weingast 1989). But once we allow the elites to feature groups with diverging interests, English early modern history cannot convincingly be explained as a growing conflict between an emerging middle class and a decaying aristocracy. While it is certainly true that both the power and affluence of gentry, industrialists and merchants alike grew rapidly under this period, these groups were not in uniform opposition to the aristocracy and nor were the aristocracy united in opposition against them. Instead, subgroups of each of these classes merged in coalitions with fleeting mutual interests in attempts to nudge policy in their direction. And despite the growth of power among non-landed elites, it is a basic fact that the inner circles of power were the reserves of peers. It was their interests that dominated policy. The civil war, often thought of as a popular revolt, had more in common with a "baronial" war than with a middle class revolution; the Glorious Revolution—often claimed to be the final victory over the old aristocracy—was engineered by none other than peers among the opposition elites (Hill 1961, pp. 194–259).

English institutional evolution during its early modern history cannot be understood as a product of this purported class struggle. Once elites are unpacked into groups with competing interests, institutional evolution is in fact driven largely by the necessities and opportunities that arise from the intra-elite conflict. For instance, the most prominent feature of the Tudor era, the centralization of government, was largely driven by Henry VII's need to reign in the overly powerful peerage. The success of this enterprise depended partly on the temporary weakness of the peers, who had taken a heavy toll after a century of continuous warfare, and partly on the constellation of elites that supported or opposed it. Throughout, economic policy was closely linked to the distribution of power. As the bargaining position of elite coalitions shifted, so did the distribution of rents.

Beyond the close relationship between power and policy in this environment of weak institutions, a striking feature of English history is that over almost six centuries, on an institutional level very little changed. Conflict was invariably structured around a coalition of powerful elites propping up the government financially and politically in exchange for political power and economic privileges. These privileges were created by restricting access to economic organizations for the subjacent elites and for ordinary subjects. While the economy experienced periods of high growth, these were never sustained; following such periods were long spells of zero or no growth and over the course of six centuries, per-capita income remained nearly stagnant. It was precisely this (lack of) trend, ubiquitous to all countries at that time, that compelled de Tocqueville (1856, p. 88) to quip that "history, it is easily perceived, is a picture-gallery containing a host of copies and very few originals."

B. Political Conflict and Economic Competition

The above description of a sclerotic, stagnant economy with alternating episodes of growth and contraction applies to most contemporary "developing" countries (see for instance Pritchett 2000). In fact, the term "developing" is rather misleading. If anything, with a few exceptions, these countries exhibit near-stagnant

economic and political development while the "developed" countries continue to grow (Easterly and Levine 2001; Pritchett 1997). Delving into lackluster economic performance among contemporary economies, North et al. (2012) find a political economy eerily similar to that of the early modern England in countries as disparate as Mexico, the Philippines and Congo.

Just how much can England's experiences inform us about modern politico-economic processes? At some level, there are obvious structural differences that weakens the case for generalization; land is no longer the basis for power, royal courts have no political meaning and the economy is more dynamic and fluent. Yet, client-patron networks exist in virtually all low- and medium-income countries; in fact, North et al. (2012) finds just as intimate a link between political influence and economic privilege in contemporary countries as the one uncovered here. While contemporary politico-economic transitions are of a different kind that past ones, the fundamental problem of enabling strong institutions to emerge endogenously from an environment of weak institutions is the same.

The results of this paper indicates that with weak institutions, the dispersion of coercive capacity is the key factor in determining the structure of the politico-economic equilibrium. The existence of a stable political equilibrium hinges on the ability of the incumbency to finance a sufficient degree of entrenchment to deter opposing elite coalitions from attempting violent regime changes. But once a stable equilibrium emerges, entrenchment becomes a bargaining tool that incumbents can use to trade off economic concessions. Hence, the economy has a natural tendency towards a restrictive state that maximize rents and concentrate them among a narrow group of elites. For a relatively competitive economy to emerge, the intra-elite conflict must be sustained at a fairly intense, but yet moderate, level. However, this makes the political equilibrium prone to sharp reactions. First, if a shock improves the incumbent's bargaining position, the result is a sharp contraction of market access.[113] Second, if a shock improves the bargaining position of the opposing elites, dual incentive compatibility may break down with political instability as the result. Inherent in the intra-elite dynamism is this dual incentive compatibility that requires both incumbents and opposing elites to prefer the status quo. A more subtle point is that a stable political outcome necessitates that the incumbents have more to gain from the status quo, since otherwise there is no room for dual incentive compatible economic concessions.

The results of this paper complement the work of North, Wallis and Weingast (2009). In line with their results, I find support both on theoretical and empirical grounds for an implicit bargaining over rents that is driven by the dispersion of coercive capacity among individuals in the society. I find a causal link from shocks to the balance of power to changes in economic policy and the distribution of rents. Expanding their framework, this paper emphasizes that coercive capacity is broader than a capacity for political violence. In stable equilibria, the ability to manipulate the incentives and constraints of opposing coalitions is the

[113] Owing to the concavity of the opposing elite's payoff function, and the greater sensitivity of economic concessions to shocks (corollary 1).

central source of political power among incumbents. These capacities need not rely on a threat of political violence, but rather on an ability to manipulate the economy and the polity by aligning incentives among a critical mass of elites. In a comparative sense, institutional design of the polity and the economy become sources of political power and important determinants of the implicit bargaining process.

In line with Besley and Persson (2011*b*), I find that the prevalence of and capacity for coercion are directly related to the expected economic payoff from such investments, and in particular the trade-off between the expected payoff under the status-quo and the expected payoff under political instability. The model developed here extends previous research by showcasing an important causal circularity. On the one hand, the structure of the economy affect investments in coercive capacity. But these investments determine the outcome of the implicit bargaining and thus the structure of the economy. Hence, weak institutions give rise to strong self-reinforcing mechanisms, whereby a profitable economy induce greater coercive investments to channel rents from it. As exclusive policies are put in place, the economy stagnates. Moreover, an important contribution of this paper is to highlight an important coercive asymmetry, as incumbents enjoy a first-mover advantage in their ability to shape the constraint the opposing elites face in acquiring coercive capacity. Finally, the results of this paper underscores the central importance of the incumbent's ability to finance entrenchment, which typically hinges on their control of state finances and their ability to tax the economy. Hence, the puzzle of why weak states have so low tax rates (Besley and Persson 2014) is directly related to the intra-elite conflict; the opposing elite's bargaining position deteriorate with an expanded tax base, and so they have every incentive to limit taxation.

A fundamental implication of the framework developed here is that countries with weak institutions are not in a state of transition. In fact, they are of better characterized as in an absorbing steady state subject to strong self-reinforcing mechanisms. A transition therefore, is not the smooth growth-path of neoclassical economics, but a bifurcation at a discrete point in time when a confluence of factors produces the right conditions for a transition to occur and prevail. Indeed, through English early modern history, neither growth of capital nor labor had any structural impact on economic development. Ultimately, while growth of input factors certainly is necessary for development to occur, the work of this paper indicates they are far from sufficient. Instead, the central factor determining the feasibility of a transition is the dynamics of the intra-elite conflict inherent in weak institutions. Crucially, incumbent elites—those with the power to drive change—have strong incentives to opposite it. Allowing a dynamic, competitive economy that is decoupled from political decision making is strictly against their material interests. Yet without a vibrant economy free from the dynamics of intra-elite conflict growth cannot be sustained. Eventually, the balance of power shifts and as this happens, the economy is manipulated to accommodate this. Hence, private property is inherently insecure, and dynamic markets liable to sharp contractions at any point in time.

This underscores the necessity of political development accompanying economic development for a proper transition to succeed. The fundamental issue is the decoupling of the polity and the economy to remove direct interests in the economy among policymakers. For such a decoupling to prevail against vested elite interests, a commensurate centralization of coercive capacity must be achieved. How to achieve this dual institutional change is perhaps the central question of contemporary development.

C. Concluding Remarks

This paper has taken some initial steps towards understanding how intra-elite conflicts affect the economy's degree of competitiveness—one of the key element for sustained economic growth. The degree of competitiveness is contingent on the degree of political conflict and balances on a double-edge sword. Too little and incumbents concentrate economic enterprise among themselves; too much and political instability ensues. But even with a moderate degree of political conflict, markets are still relatively narrow. Even worse, sudden shocks risk turning the political system on its head, and this instability makes weak institutions liable to set-backs even once transitions has begun.

Going forward lies a need for quantitative approaches. While case studies allow a richness into the nature of weak institutions, the analysis is inevitably biased towards the hypothesis under which the analysis takes place. To test the explanatory power of intra-elite conflict in a stringently objective manner requires a quantitative approach, but persuasive quantitative results are hard to obtain. The two central problems are (a) to identify instruments that measure the degree of intra-elite conflict accurately—and much work remains in this regard—and (b) to develop plausible causal links that can be mapped to an econometric model. The lack of good instruments partly reflects the nature of the variable, but also a lack of previous modeling approaches from which empirical strategies can be extracted.

Ultimately, future research must ask: under what conditions does a bifurcation from weak institutions to strong institutions successful occur? To answer that question, a dynamic framework is needed that explicitly accounts for endogenous development out of weak institutions. This in turn requires an explicit link between the structure of the polity and the structure of the economy, the distribution of coercive capacity, as well as the role of ordinary people in demanding representation. There is much to be learnt from research on these fundamental issues of development. Given what is at stake, such research carries great potential.

References

Acemoglu, Daron. 2003. "Why Not a Political Coase Theorem? Social Conflict, Commitment, and Politics." *Journal of Comparative Economics* 31(4):620–652.

Acemoglu, Daron. 2005. "Politics and Economics in Weak and Strong states." *Journal of Monetary Economics* 52(7):1199–1226.

Acemoglu, Daron. 2006. Modeling Inefficient Institutions. In *Advances in Economics and Econometrics*, ed. Richard Blundell, Whitney K. Newey and Torsten Persson. Vol. 1. Cambridge, England: Cambridge University Press, pp. 341–380.

Acemoglu, Daron. 2008. "Oligarchic Versus Democratic Societies." *Journal of the European Economic Association* 6(1):1–44.

Acemoglu, Daron. 2009. *Introduction to Modern Economic Growth*. Princeton, New Jersey: Princeton University Press.

Acemoglu, Daron, Francisco A. Gallego and James A. Robinson. 2014. "Institutions, Human Capital, and Development." *Annual Review of Economics* 6(1):875–912.

Acemoglu, Daron and James A. Robinson. 2000. "Why Did the West Extend the Franchise? Democracy, Inequality, and Growth in Historical Perspective." *Quarterly Journal of Economics* 115(4):1167–1199.

Acemoglu, Daron and James A. Robinson. 2005. *Economic Origins of Dictatorship and Democracy*. Cambridge, England: Cambridge University Press.

Acemoglu, Daron and James A. Robinson. 2008. "Persistence of Power, Elites, and Institutions." *American Economic Review* 98(1):267–93.

Acemoglu, Daron and James A. Robinson. 2012. *Why Nations Fail: The Origins of Power, Prosperity and Poverty*. New York, New York: Crown Business.

Acemoglu, Daron, James A. Robinson, Simon Johnson and Pierre Yared. 2008. "Income and Democracy." *American Economic Review* 98(3):808–842.

Acemoglu, Daron, Simon Johnson and James A. Robinson. 2001. "The Colonial Origins of Comparative Development: An Empirical Investigation." *American Economic Review* 91(5):1369–1401.

Acemoglu, Daron, Suresh Naidu, Pascual Restrepo and James A. Robinson. 2014. Democracy Does Cause Growth. NBER Working Papers No. 20004. National Bureau of Economic Research, Inc.

Acemoglu, Daron, Ufuk Akcigit, Nicholas Bloom and William Kerr. 2013. Innovation, Reallocation And Growth. Working Papers No. 13–23. Center for Economic Studies, U.S. Census Bureau.

Adamson, John. S. 1990. "The Baronial Context of the English Civil War: The Alexander Prize Essay." *Transactions of the Royal Historical Society* 40:93–120.

Adamson, John S. 2008. *The English Civil War: Conflict and Contexts, 1640-49*. London, England: Palgrave McMillan.

Aghion, Philippe and Peter Howitt. 1992. "A Model of Growth Through Creative Destruction." *Econometrica* 60(2):323–351.

Aghion, Philippe, Ufuk Akcigit and Peter Howitt. 2014. What Do We Learn From Schumpeterian Growth Theory? In *Handbook of Economic Growth*, ed. Philippe Aghion and Steven N. Durlauf. Vol. 2. Amsterdam, The Netherlands: Elsevier, pp. 515–563.

Alesina, Alberto and Dani Rodrik. 1994. "Distributive Politics and Economic Growth." *Quarterly Journal of Economics* 109(2):465–490.

Alesina, Alberto, Sule Özler, Nouriel Roubini and Phillip Swagel. 1996. "Political Instability and Economic Growth." *Journal of Economic Growth* 1(2):189–211.

Alvarez, Michael, José A. Cheibub, Fernando Limongi and Adam Przeworski. 2000. *Democracy and Development: Political Institutions and Well-Being in the World, 1950-1990*. Cambridge, England: Cambridge University Press.

Andrews, Charles M. 1912. *A short history of England*. Boston, Massachusetts: Allyn and Bacon.

Ayyagari, Meghana, Asli Demirgüç-Kunt and Vojislav Maksimovic. 2012. "Firm Innovation in Emerging Markets: The Role of Finance, Governance, and Competition." *Journal of Financial and Quantitative Analysis* 46(6):1545–1580.

Barro, Robert J. 1999. "Determinants of Democracy." *Journal of Political Economy* 107(S6):158–183.

Bell, Adrian R., Chris Brooks and Paul R. Dryburgh. 2007. *The English Wool Market, c.1230–1327*. Cambridge, England: Cambridge University Press.

Besley, Timothy and Torsten Persson. 2011*a*. "The Logic of Political Violence." *Quarterly Journal of Economics* 126(3):1411–1445.

Besley, Timothy and Torsten Persson. 2011*b*. *Pillars of Prosperity: The Political Economics of Development Clusters*. Princeton, New Jersey: Princeton University Press.

Besley, Timothy and Torsten Persson. 2014. "Why do developing countries tax so little?" *Journal of Economic Perspectives* 28(4):99–120.

Blattman, Christopher and Edward Miguel. 2010. "Civil War." *Journal of Economic Literature* 48(1):3–57.

Bloch, Francis, Santiago Sánchez-Pagés and Raphaël Soubeyran. 2006. "When Does Universal Peace Prevail? Secession and Group Formation in Conflict." *Economics of Governance* 7(1):3–29.

Bourguignon, François and Thierry Verdier. 2000. "Oligarchy, Democracy, Inequality and Growth." *Journal of Development Economics* 62(2):285–313.

Braddick, Michael J. 2003. The Rise of the Fiscal State. In *A Companion to Stuart Britain*, ed. Barry Coward. Vol. 1. London, England: Blackwell Publishing, pp. 69–87.

Brecke, Peter. 1999. Violent conflicts 1400 AD To the Present in Different Regions of the World. In *1999 Meeting of the Peace Science Society*.

Brenner, Robert. 1993. *Merchants and Revolution*. Cambridge, England: Cambridge University Press.

Britnell, Richard H. 1981. "The Proliferation of Markets in England, 1200-1349." *Economic History Review* 34(2):209–221.

Broadberry, Stephen, Bruce Campbell, Alexander Klein, Mark Overton and Bas van Leeuwen. 2012. British Economic Growth, 1270-1870: An Output-Based Approach. Studies in Economics, No. 1203. Canterbury, England: School of Economics, University of Kent.

Carlin, Wendy, Mark Schaffer and Paul Seabright. 2004. "A Minimum of Rivalry: Evidence From Transition Economies on the Importance of Competition for Innovation and Growth." *Contributions to Economic Analysis & Policy* 3(1):1284–1327.

Chrimes, Stanley B. 1972. *Henry VII*. Berkeley, California: University of California Press.

Clark, Gregory. 2007. "The Long March of History: Farm Wages, Population, and Economic Growth, England 1209–18691." *Economic History Review* 60(1):97–135.

Cox, Gary W., Douglass C. North and Barry R. Weingast. 2015. "The Violence Trap: A Political-Economic Approach to the Problems of Development." Unpublished Typecript.

Davenport, Christian. 2007. "State Repression and Political Order." *Annual Review of Political Science* 10(1):1–23.

de Tocqueville, Alexis. 1856. *The Old Regime and the Revolution*. New York, New York: Harper & Brothers.

Dean, David. 2007. Elizabethan Government and Politics. In *A Companion to Tudor Britain*, ed. Robert Tittler and Norman Jones. London, England: Blackwell Publishing, pp. 44–60.

Djankov, Simeon, Rafael La Porta, Florencio Lopez-De-Silanes and Andrei Shleifer. 2002. "The Regulation Of Entry." *Quarterly Journal of Economics* 117(1):1–37.

Dollar, David and Aart Kraay. 2003. "Institutions, Trade, and Growth." *Journal of Monetary Economics* 50(1):133–162.

Doucouliagos, Hristos and Mehmet Ali Ulubaşoĝlu. 2008. "Democracy and Economic Growth: A Meta-Analysis." *Amer-*

ican Journal of Political Science 52(1):61–83.

Dunlop, O. Jocelyn. 1911. "Some Aspects of Early English Apprenticeship." *Transactions of the Royal Historical Society* 5:193–208.

Easterly, William, Jozef Ritzan and Michael Woolcock. 2006. Social Cohesion, Institutions, and Growth. Working Papers, No. 94. Center for Global Development.

Easterly, William, Michael Kremer, Lant Pritchett and Lawrence H. Summers. 1993. "Good Policy or Good Luck?" *Journal of Monetary Economics* 32(3):459–483.

Easterly, William and Ross Levine. 2001. "What Have We Learned From a Decade of Empirical Research on Growth? It's Not Factor Accumulation: Stylized Facts and Growth Models." *World Bank Economic Review* 15(2):177–219.

Easterly, William and Ross Levine. 2003. "Tropics, Germs, and Crops: How Endowments Influence Economic Development." *Journal of Monetary Economics* 50(1):3–39.

Elton, Geoffrey R. 1975. "Presidential Address: Tudor Government: The Points of Contact. II. The Council." *Transactions of the Royal Historical Society* 25:195–211.

Elton, Geoffrey R. 1976. "Presidential Address: Tudor Government: The Points of Contact. III. The Court." *Transactions of the Royal Historical Society* 26:211–228.

Elton, Geoffrey R. 1977. *Reform and Reformation: England, 1509-1558*. Cambridge, Massachusetts: Harvard University Press.

Engerman, Stanley L. and Kenneth L. Sokoloff. 1997. Factor Endowments, Institutions, and Differential Paths of Growth Among New World Economies. In *How Latin America Fell Behind*, ed. Stephen Haber. Palo Alto, California: Stanford University Press, pp. 260–304.

Fernandez, Raquel and Dani Rodrik. 1991. "Resistance to Reform: Status Quo Bias in the Presence of Individual- Specific Uncertainty." *The American Economic Review* 81(5):1146–1155.

Fisher, F. J. 1940. "Commercial Trends and Policy in Sixteenth-Century England." *Economic History Review* 10(2):95–117.

Friedman, Milton. 1953. The Methodology of Positive Economics. In *Essays in Positive Economics*, ed. Milton Friedman. Chicago, Illinois: University of Chicago Press, pp. 3–43.

Fukuyama, Francis. 2011. *The Origins of Political Order: From Prehuman Times to the French Revolution*. London, England: Profile Books.

Galor, Oded and Joseph Zeira. 1993. "Income Distribution and Macroeconomics." *Review of Economic Studies* 60(1):35–52.

Garfinkel, Michelle R. 2004. "On the Stability of Group Formation: Managing the Conflict Within." *Conflict Management and Peace Science* 21(1):43–68.

Garfinkel, Michelle R. and Stergios Skaperdas. 2007. "Economics of Conflict: An Overview." *Handbook of Defense Economics* 2:649–709.

Gates, Scott, Håvard Hegre, Mark P. Jones and Håvard Strand. 2006. "Institutional Inconsistency and Political Instability: Polity Duration, 1800–2000." *American Journal of Political Science* 50(4):893–908.

Geddes, Barbara. 1999. "What Do We Know About Democratization After Twenty Years?" *Annual Review of Political Science* 2(1):115–144.

Glaeser, Edward L., Rafael La Porta, Florencio Lopez-De-Silanes and Andrei Shleifer. 2004. "Do Institutions Cause Growth?" *Journal of Economic Growth* 9(3):271–303.

Goldstein, Markus and Christopher Udry. 2008. "The Profits of Power: Land Rights and Agricultural Investment in Ghana." *Journal of Political Economy* 116(6):981–1022.

Greif, Avner. 2015. How Did Markets Evolve? In *Institutions, Innovation, and Industrialization: Essays in Economic History and Development*, ed. Avner Greif, Lynne Kiesling and John V. C. Nye. Vol. 1. Princeton, New Jersey: Princeton University Press, pp. 71–96.

Grossman, Herschel I. 1994. "Production, Appropriation, and Land Reform." *American Economic Review* 84(3):705–712.

Grossman, Herschel I. 1995. "Robin Hood and the Redistribution of Property Income." *European Journal of Political Economy* 11(3):399–410.

Grossman, Herschel I. 1999. "Kleptocracy and Revolutions." *Oxford Economic Papers* 51(2):267–283.

Grummitt, David. 2007. The Establishment of the Tudor Dynasty. In *A Companion to Tudor Britain*, ed. Robert Tittler and Norman Jones. London, England: Blackwell Publishing, pp. 15–28.

Guy, John A. 1986. The Privy Council: Revolution or Evolution? In *Revolution Reassessed*, ed. Christopher Coleman and David Starkey. Oxford, England: Clarendon Press, pp. 59–86.

Haber, Stephen. 1997. *How Latin America Fell Behind: Essays on the Economic Histories of Brazil and Mexico*. Palo Alto, California: Stanford University Press.

Hall, Robert E. and Charles I. Jones. 1999. "Why do Some Countries Produce So Much More Output Per Worker than Others?" *Quarterly Journal of Economics* 114(1):83–116.

Hausmann, Ricardo, Lant Pritchett and Dani Rodrik. 2005. "Growth Accelerations." *Journal of Economic Growth* 10(4):303–329.

Hexter, Jack H. 1978. "Power Struggle, Parliament, and Liberty in Early Stuart England." *Journal of Modern History* 50(1):2–50.

Hicks, Michael A. 1995. *Bastard Feudalism*. London, England: Longman.

Hicks, Michael A. 2003. *The Wars of the Roses: 1455-1485*. Oxford, England: Osprey.

Hill, Christopher. 1961. *The Century of Revolution 1603-1704*. 2nd ed. New York, New York: Routledge.

Hindle, Steve. 2007. County Government in England. In *A Companion to Tudor Britain*, ed. Robert Tittler and Norman Jones. London, England: Blackwell Publishing, pp. 98–115.

Hirst, Derek. 1999. *England in Conflict 1603-1660: Kingdom, Community, Commonwealth*. Oxford, England: Oxford University Press.

Hoak, Dale. 1978. "Re-Writing the History of Tudor Politics and Government: The Regimes of Somerset and Norththumberland." *Journal of the Rutgers University Libraries* 40(1).

Hoak, Dale. 1980. Rehabilitating the Duke of Northumberland: Politics and Political Control, 1549–53. In *The Mid-Tudor Polity c. 1540–1560*, ed. Jennifer Loach and Robert Tittler. London, England: Macmillan, pp. 29–51.

Hoyle, Richard W. 1992. *The Estates of the English Crown, 1558–1640*. Cambrige, England: Cambridge University Press.

Hume, David. 1983. *The History of England from the Invasion of Julius Caesar to the Revolution in 1688*. Vol. 5. Indianapolis, Indiana: Liberty Fund.

Jerzmanowski, Michal. 2006. "Empirics of Hills, Plateaus, Mountains and Plains: A Markov-Switching Approach to Growth." *Journal of Development Economics* 81(2):357–385.

Jones, Benjamin F. and Benjamin A. Olken. 2008. "The Anatomy of Start-Stop Growth." *Review of Economics and Statistics* 90(3):582–587.

Justman, Moshe and Mark Gradstein. 1999. "The Industrial Revolution, Political Transition, and the Subsequent Decline in Inequality in 19th-Century Britain." *Explorations in Economic History* 36(2):109–127.

Keefer, Philip. 2007. "Clientelism, Credibility, and the Policy Choices of Young Democracies." *American Journal of Political Science* 51(4):804–821.

Knoop, Douglas and G. P. Jones. 1933. *The Mediaeval Mason: An Economic History of English Stone Building in the Later Middle Ages and Early Modern Times*. Manchester, England: Manchester University Press.

Krusell, Per and José-Víctor Ríos-Rull. 1996. "Vested Interests in a Positive Theory of Stagnation and Growth." *Review of Eco-*

nomic Studies 63(2):301–329.

La Ferrara, Eliana and Robert H Bates. 2001. "Political Competition in Weak States." *Economics & Politics* 13(2):159–184.

Lakatos, Imre. 1970. Falsification and the Methodology of Scientific Research Programmes. In *Criticism and the Growth of Knowledge*, ed. Imre Lakatos and Alan Musgrave. Cambridge, England: Cambridge University Press, pp. 91–195.

Lakatos, Imre. 1980. *The Methodology of Scientific Research Programmes: Volume 1: Philosophical Papers*. Cambridge, England: Cambridge University Press.

Lingelbach, William E. 2010. *The Merchant Adventurers of England*. Clark, New Jersey: Lawbook Exchange.

Lipset, Seymour Martin. 1960. *Political Man: The Social Bases of Politics*. New York, New York: Anchor Books.

Lloyd, Terrence H. 1977. *The English Wool Trade in the Middle Ages*. Cambridge, England: Cambridge University Press.

MacCaffrey, Wallace T. 1968. *The Shaping of the Elizabethan Regime: Elizabethan Politics, 1558-1572*. Princeton, New Jersey: Princeton University Press.

Maitland, Frederic. 1961. *The Constitutional History of England*. Cambridge, England: Cambridge University Press.

Marshall, Monty G. and Donna Ramsey Marshall. 2015. *Coup d'etat Events, 1946-2014: Codebook*. Center for Systemic Peace.

Marshall, Monty G., Ted Robert Gurr and Keith Jaggers. 2014. *Polity IV Project: Political Regime Characteristics and Transitions, 1800–2013*. Center for Systemic Peace.

McFarlane, Kenneth B. 1981. *England in the Fifteenth Century*. London, England: Hambledon.

Miller, Edward. 1964. "The English Economy in the Thirteenth Century: Implications of Recent Research." *Past & Present* 28(1):21–40.

Morris, T.A. 2002. *Europe and England in the Sixteenth Century*. London, England: Taylor & Francis.

Muldrew, Craig. 2003. Economic and Urban Development. In *A Companion to Stuart Britain*, ed. Barry Coward. Vol. 1. London, England: Blackwell Publishing, pp. 148–165.

Murphy, Kevin M, Andrei Shleifer and Robert W Vishny. 1991. "The Allocation of Talent: Implications for Growth." *Quarterly Journal of Economics* 106(2):503–530.

Neale, John E. 1953. *Elizabeth I and Her Parliaments, 1559-1581*. London, England: Jonathan Cape.

Neale, John E. 1957. *Elizabeth I and Her Parliaments, 1584-1601*. London, England: Jonathan Cape.

North, Douglass C. 1990. *Institutions, Institutional Change and Economic Performance*. Cambridge, England: Cambridge University Press.

North, Douglass C. and Barry R. Weingast. 1989. "Constitutions and Commitment: The Evolution of Institutions Governing Public Choice in Seventeenth-Century England." *Journal of Economic History* 49(04):803–832.

North, Douglass C., John Joseph Wallis and Barry R. Weingast. 2009. *Violence and Social Orders: a Conceptual Framework for Interpreting Recorded Human History*. Cambridge, England: Cambridge University Press.

North, Douglass C., John Joseph Wallis, Steven B. Webb and Barry R. Weingast, eds. 2012. *In the Shadow of Violence*. Cambridge, England: Cambridge University Press.

North, Douglass C. and Robert P. Thomas. 1973. *The Rise of the Western World: A New Economic History*. Cambridge, England: Cambridge University Press.

Olken, Benjamin A. and Rohini Pande. 2012. "Corruption in Developing Countries." *Annual Review of Economics* 4(1):479–509.

Olson, Mancur. 1965. *The Logic of Collective Action: Public Goods and the Theory of Groups*. Cambridge, Massachusetts: Harvard University Press.

Parente, Stephen L. and Edward C. Prescott. 1999. "Monopoly Rights: A Barrier to Riches." *American Economic Review* 89(5):1216–1233.

Peacey, Jason. 2003. The Outbreak of the Civil Wars in the three Kingdoms. In *A Companion to Stuart Britain*, ed. Barry Coward. Vol. 1. London, England: Blackwell Publishing, pp. 290–308.

Persson, Torsten and Guido Enrico Tabellini. 2002. *Political Economics: Explaining Economic Policy*. Cambridge, Massachusetts: MIT press.

Pollard, Albert F. 1922. "Council, Star Chamber, and Privy Council under the Tudors: II. The Star Chamber." *English Historical Review* 37(148):516–539.

Popper, Karl. 1935. *The Logic of Scientific Discovery*. 4th ed. New York, New York: Routledge.

Power, Eileen. 1941. *The Wool Trade in English Medieval History: Being the Ford Lectures*. Oxford, England: Oxford University Press.

Price, William H. 1906. *The English Patents of Monopoly*. New York, New York: The Riverside Press.

Pritchett, Lant. 1997. "Divergence, Big Time." *Journal of Economic Perspectives* 11(3):3–17.

Pritchett, Lant. 2000. "Understanding Patterns of Economic Growth: Searching for Hills among Plateaus, Mountains, and Plains." *World Bank Economic Review* 14(2):221–250.

Rajan, Raghuram G. and Luigi Zingales. 2003. "The Great Reversals: The Politics of Financial Development in the Twentieth Century." *Journal of Financial Economics* 69(1):5–50.

Ramsey, Peter. 1953. "Overseas Trade in the Reign of Henry VII: The Evidence of Customs Accounts." *The Economic History Review* 6(2):173–182.

Reeve, John L. 1989. *Charles I and the Road to Personal Rule*. Cambridge, England: Cambridge University Press.

Reno, William. 1995. *Corruption and State Politics in Sierra Leone*. Cambridge, England: Cambridge University Press.

Reno, William. 1998. *Warlord Politics and African States*. Boulder, Colorado: Lynne Rienner.

Reno, William. 2003. "Political Networks in a Failing State: The Roots and Future of Violent Conflict in Sierra Leone." *International Politics and Society* 2:44–66.

Rodrik, Dani. 1999. "Where Did All The Growth Go? External Shocks, Social Conflict, and Growth Collapses." *Journal of Economic Growth* 4(4):385–412.

Rodrik, Dani. 2000. "Institutions for High-Quality Growth: What They Are and How to Acquire Them." *Studies in Comparative International Development* 35(3):3–31.

Rodrik, Dani, Arvind Subramanian and Francesco Trebbi. 2004. "Institutions Rule: The Primacy of Institutions Over Geography and Integration in Economic Development." *Journal of Economic Growth* 9(2):131–165.

Roemer, John E. 1985. "Rationalizing Revolutionary Ideology." *Econometrica* pp. 85–108.

Rogers, Thorold. 1887. *A History of Agriculture and Prices in England from 1259 to 1793 (1866–1902)*. Vol. V. Oxford, England: Oxford University Press.

Rowley, Charles K. and Bin Wu. 2014. *Britannia 1066–1884:From Medieval Absolutism to the Birth of Freedom under Constitutional Monarchy, Limited Suffrage, and the Rule of Law*. New York, New York: Springer.

Russell, Conrad. 1973. Parliament and the King's Finances. In *The Origins of the English Civil War*, ed. Conrad Russell. London, England: Macmillan, pp. 91–116.

Schumpeter, Joseph. 1942. *Capital, Socialism and Democracy*. New York, New York: Harper and Brothers.

Shleifer, Andrei and Robert W. Vishny. 2002. *The Grabbing Hand: Government Pathologies and Their Cures*. Cambridge, Massachusetts: Harvard University Press.

Simpson, A.W. Brian. 1986. *A History of the Land Law*. Oxford, England: Calendron Press.

Smith, Adam. 1976. *An Inquiry into the Na-*

ture and Causes of the Wealth of Nations. The Glasgow Edition of the Works and Correspondence of Adam Smith. Edited by R. H. Campbell and A. S. Skinner. Vol. 2. Oxford, England: Oxford University Press.

Smith, David L. 2002. *Constitutional Royalism and the Search for Settlement, C.1640-1649.* Cambridge, England: Cambridge University Press.

Smith, David L. 2003. Politics in Early Stuart Britain, 1603–1640. In *A Companion to Stuart Britain*, ed. Barry Coward. Vol. 1. London, England: Blackwell Publishing, pp. 233–251.

Snyder, Richard and Ravi Bhavnani. 2005. "Diamonds, Blood, and Taxes: Revenue-Centered Framework for Explaining Political Order." *Journal of Conflict Resolution* 49(4):563–597.

Stigler, George J. 1971. "The Theory of Economic Regulation." *Bell journal of Economics and Management Science* 3:3–21.

Stone, Lawrence. 1952. "The Elizabethan Aristocracy—A Restatement." *Economic History Review* 4(3):302–321.

Svensson, Jakob. 2005. "Eight Questions About Corruption." *Journal of Economic Perspectives* 19(3):19–42.

Thomas, David. 1983. Financial and Administrational Developments. In *Before the English Civil War: Essays on Early Stuart Politics and Government*, ed. Howard Tomlinson. London, England: Macmillan.

Tittler, Robert. 1998. *The Reformation and the Towns in England: Politics and Political Culture, c. 1540-1640.* Oxford, England: Clarendon Press.

Tullock, Gordon. 1971. "The Paradox of Revolution." *Public Choice* 11(1):89–99.

Woodward, Donald. 1980. "The Background to the Statute of Artificers: The Genesis of Labour Policy, 1558-63." *The Economic History Review* 33(1):32–44.

Appendix A: Proofs

Proof of lemma 1. The proof proceed by first establishing piecewise concavity. Next, I prove $\hat{z}_1 \leq \hat{z}_2$. Finally, I prove existence and uniqueness.

Concavity.—Piecewise strict concavity of $g(z)$ requires that $g_i(z)$, $i \in \{1, 2\}$, are strictly concave. This in turn implies $g_i''(z) < 0$. First, for $g_1(z)$, we find:

$$\begin{aligned} g_1'' &= \bar{f}\left\{-p_{vv}\left(\frac{d\tilde{v}}{dz}\right)^2 - p_v\frac{d^2\tilde{v}}{dz^2}\right\} \\ &= \bar{f}\left\{-p_{vv}\left(\frac{c'}{p_{vv}\bar{f}}\right)^2 - p_v\left(\frac{c''}{p_{vv}\bar{f}}\right)\right\} \\ &= \frac{\bar{f}}{-p_{vv}}\left\{\left(\frac{c'}{\bar{f}}\right)^2 + \frac{p_v c''}{\bar{f}}\right\} \\ &= \frac{1}{-p_{vv}}\left\{\frac{c'^2}{\bar{f}} + p_v c''\right\}. \end{aligned}$$

Since $-p_{vv} > 0$, we require the bracketed expression to be negative. Indeed, a slight rearrangement gives:

$$\frac{c'^2}{-c''} < p_v\bar{f} = c(z), \tag{A1}$$

which holds by assumption (IV). The equality uses the opposition elite's FOC. Conclude that $g_1''(z) < 0$ and $g_1(z)$ is therefore strictly concave. For $g_2(z)$, we find

$$g_2'' = f''\left(\frac{d\tilde{\sigma}}{dz}\right)^2 + f'\frac{d^2\tilde{\sigma}}{dz^2}.$$

With $f'' \leq 0$, only the latter term is of interest. Since $f'(\tilde{\sigma}) < 0$, we require that $\frac{d^2\tilde{\sigma}}{dz^2} > 0$. Expanding the term, we have:

$$\frac{d^2\tilde{\sigma}}{dz^2} = \frac{c'}{F(\sigma)}\frac{d\tilde{v}}{dz} + \frac{c(z)}{F(\sigma)}\frac{c''}{p_{vv}\bar{f}} + \underbrace{\left(\frac{\partial\tilde{\sigma}}{\partial z}\right)^2\frac{-F'}{F(\sigma)}}_{>0},$$

where I have used $p_{vvv}(v) = 0$. Note that $F' = 2f' + (\sigma - 1)f'' < 0$. As for the two first terms, expanding $d\tilde{v}/dz$, we find:

$$\frac{c'^2 + c(z)c''}{F(\tilde{\sigma})p_{vv}\bar{f}}.$$

Since the denominator is negative, we require the numerator to be negative. Rearrange to find:

$$-\frac{c'(z)^2}{c''(z)} < c(z), \tag{A2}$$

which holds by (IV). Conclude that $d^2\tilde{\sigma}/dz^2 > 0$ and therefore, $g_2''(z) < 0$.

Magnitudes.—With corner solutions, it is easy to see that $\hat{z}_1 < \hat{z}_2$ except for $\hat{z}_1 = Z_{\min} = \hat{z}_2$. For interior solutions, rearrange the FOC of $\hat{z}_1$ and $\hat{z}_2$ to isolate λ on one side of the equality. Combine the two:

$$\begin{aligned}
-\bar{f}p_v(\tilde{v}[\bar{z}_1])\frac{d\tilde{v}[\bar{z}_1]}{dz} &= f'(\tilde{\sigma}[\bar{z}_2])\frac{d\tilde{\sigma}[\bar{z}_2]}{dz} \\
-c(\bar{z}_1)\frac{d\tilde{v}[\bar{z}_1]}{dz} &= f'(\tilde{\sigma}[\bar{z}_2])\frac{c(\bar{z}_2)}{F(\tilde{\sigma}[\bar{z}_2])}\frac{d\tilde{v}[\bar{z}_2]}{dz} \\
-c(\bar{z}_1)\frac{d\tilde{v}[\bar{z}_1]}{dz} &= -c(\bar{z}_2)\frac{d\tilde{v}[\bar{z}_2]}{dz}\underbrace{\left(\frac{-f'(\tilde{\sigma}[\bar{z}_2])}{F(\tilde{\sigma}[\bar{z}_2])}\right)}_{\in(0,1)}.
\end{aligned}$$

Clearly, $\bar{z}_1 \neq \bar{z}_2$. Fix $\bar{z}_2$ and differentiate the left-hand side:

$$\frac{\partial}{\partial \bar{z}_1}\left[-c(\bar{z}_1)\frac{d\tilde{v}[\bar{z}_1]}{dz}\right] = -c'\frac{d\tilde{v}[\bar{z}_1]}{dz} - c(\bar{z}_1)\frac{d^2\tilde{v}[\bar{z}_1]}{dz^2} = -\frac{c'(\bar{z}_1)^2 + c(\bar{z}_1)c''(\bar{z}_1)}{p_{vv}\bar{f}} < 0,$$

by (IV). Hence, we must have $\hat{z}_1 \leq \hat{z}_2$, with equality only if $\hat{z}_1 = Z_{\min} = \hat{z}_2$.

Existence and Uniqueness.—Since the argument is identical for both g_1 and g_2, I write in terms of the latter.

For existence: First, investing beyond $Z_{\max}$ is clearly not optimal. Moreover, the least that can be invested to avoid a coup is $Z_{\min}$. Thus optimization occurs over a compact set and since $g_2(z)$ is continuous, the extreme-value theorem establishes a solution. Now, let $\mathcal{Z} \to \infty$. Because $f(\cdot)$ is bounded, while the investment cost $-\lambda z$ is unbounded below, investing an arbitrarily large amount can never be optimal. Hence, either there is an interior solution or the solution is to invest nothing. Therefore, the program

$$\max_z g_2(z) \quad \text{s.t.} \quad Z_{\min} \leq z \leq Z_{\max} \tag{A3}$$

has a solution.

For uniqueness: the two constraints are continuous and differentiable, and both cannot hold with equality in equilibrium. Therefore, the Karusch-Kuhn-Tucker first order conditions are necessary. Moreover, since $g_2(z)$ is strictly concave, the solution is unique.

An identical argument can be made for the program

$$\max_z \; g_1(z) \quad \text{s.t.} \quad 0 \leq z \leq Z_{\min}, \tag{A4}$$

with the difference that $-p\bar{f}$ is bounded in the case $Z_{\min} \to \infty$. Finally then, let $\hat{z}_1$ be the unique point of (A4) and $\hat{z}_2$ the unique point of (A3). Then, the program

$$\max_z \; g(z) \quad \text{s.t.} \quad 0 \leq z \leq Z_{\max} \tag{A5}$$

has the solution

$$\hat{z} = \underset{z \in \{\hat{z}_1, \hat{z}_2\}}{\arg\max} \; g(z). \tag{A6}$$

Suppose not: let $z^* \notin \{\hat{z}_1, \hat{z}_2\}$ be the solution to (A5). Then by definition, $g(z^*) > g(z) \quad \forall z \neq z^*$. First suppose $z^* \in [Z_{\min}, Z_{\max}]$. Then $g_2(z^*) > g_2(\hat{z}_2)$, which contradicts $\hat{z}_2$ being the solution to (A3). A similar argument for $z^* \in [0, Z_{\min}]$ shows that z^* must coincide with either $\hat{z}_1$ or $\hat{z}_2$. ■

Derivation of $d\sigma^{\epsilon}[\bar{z}_2(\epsilon); \epsilon]/d\epsilon > 0$. From the second line in (13), substitute for $d\bar{z}_2/d\epsilon$ to get:

$$\frac{d\tilde{\sigma}}{d\epsilon} = \frac{\partial \tilde{\sigma}}{\partial \epsilon} \left(\frac{-g_2''(\bar{z}_2) + \left(f'' - f' \frac{F'(\tilde{\sigma})}{F(\tilde{\sigma})} \right) \left(\frac{\partial \tilde{\sigma}}{\partial z} \right)^2}{-g_2''(\bar{z}_2)} \right) > 0.$$

For this to be positive, the numerator must be positive. Expand $g_2''(\bar{z}_2)$ and cancel terms:

$$-f' \left(\frac{\partial^2 \tilde{\sigma}}{\partial \bar{z}^2} + \frac{F'(\tilde{\sigma})}{F(\tilde{\sigma})} \left(\frac{\partial \tilde{\sigma}}{\partial z} \right)^2 \right) > 0.$$

Since $-f' > 0$, we require the outer parenthesis to be positive. Expand $\partial^2 \tilde{\sigma}/\partial z^2$ and cancel terms:

$$\frac{c'(\bar{z}_2)}{F(\tilde{\sigma})} \frac{d\tilde{v}}{d\bar{z}_2} + \frac{c(\bar{z}_2)}{F(\tilde{\sigma})} \frac{c''(\bar{z}_2)}{p_{vv}(\tilde{v})\bar{f}} = \frac{c'(\bar{z}_2)^2 + c(\bar{z}_2)c''(\bar{z}_2)}{F(\tilde{\sigma})p_{vv}(\tilde{v})\bar{f}} > 0.$$

The denominator is negative since $p_{vv} < 0$. Hence we must have:

$$c'(\bar{z}_2)^2 + c(\bar{z}_2)c''(\bar{z}_2) < 0 \implies \frac{c'(\bar{z}_2)^2}{-c''(\bar{z}_2)} > c(\bar{z}_2),$$

which holds by (IV). ■

Appendix B: Micro Foundations

General Mechanisms

Rents can be created in a variety of ways. Since I focus on political support for competitive markets, the micro-foundations provided here relate to how political mechanisms affects the profit flow of firms. As in the main paper, consider a one-period, one-sector economy with a continuum σ of firms. Each firm is owned by an individual, to whom any profits accrue. To keep with the vocabulary of the main paper, I conflate profits with rents.

In general, the scope for rent creation within a given firm and a given market depends on how it produces and the average profit these goods. In evaluating how lucrative a source of rent creation is, the owner also considers the likely evolution of the firm's rent-creation ability. An individual then faces and expected stream of rents r than can be written in the following manner;

$$r = f(\boldsymbol{x}, p, \boldsymbol{\omega}, \boldsymbol{\theta}), \tag{B1}$$

where $\boldsymbol{x} \equiv (x_1, x_2, ...x_n) \in \mathbb{R}_+^{n\in\mathbb{N}}$ denotes a vector of inputs, the price of the output good $p \in \mathbb{R}_+$ and a vector $\boldsymbol{\omega} \equiv (\omega_1, \omega_2, ..., \omega_n) \in \mathbb{R}_+^{n\in\mathbb{N}}$ of input prices; finally, through Schumpeterian creative destruction each firm face a risk of being pushed out of the market from superior production technologies.[114] Hence the (expected) distribution of competitiveness after a stage of innovation $\boldsymbol{\theta} \equiv [\theta_i]_{i\in[0,\sigma]} \subset \mathbb{R}$, is a critical factor in shaping expected rents. Each of these input factors depend on the competition on the demand side, and so in equilibrium we can write $\boldsymbol{x}, p, \boldsymbol{\omega}, \boldsymbol{\theta}$ as outcomes of σ;

$$\hat{r} = f\big(\hat{\boldsymbol{x}}(p[\sigma], \boldsymbol{\omega}[\sigma]), p[\sigma], \boldsymbol{\theta}[\sigma]\big), \tag{B2}$$

or simply $\hat{r} = f(\sigma)$. As in the main model, "hats" denote optimal decisions. Now, to derive micro-foundations, consider an economy where, after σ is set, firms invest in a vector $\boldsymbol{x}$ of input factors facing a vector of input prices $\boldsymbol{\omega}$ and an expectation of the final price as well as their level of competitiveness in distributing their goods relative other firms. Once production is complete, firms learn the distribution of $\boldsymbol{\theta}$. They then set their final price and facing a fixed distribution cost of θ_i. Hence, firms are identical in their production technology, but differ with respect to a fixed distribution cost. That investments take place before the competitive landscape is revealed captures the dynamics of Schumpeterian creative destruction in a parsimonious way. I solve the model using backward induction. To arrive at sharp results, I hold the economy's total expenditure fixed, focusing on how reallocations of this expenditure informs the incumbent's decision.

Creative Destruction

First every firm produce an amount $y(\hat{\boldsymbol{x}})$ of the final good, and then learn they private θ_i. Now, because firms sell identical goods, a single final good price p

[114] Here, production technologies refer to the entire process from procurement to marketing.

clears the market, and therefore the equilibrium rents accruing to a firm can be written $\hat{r}_i = \max\{py(\hat{\boldsymbol{x}}) - \boldsymbol{\omega}\hat{\boldsymbol{x}}^{\intercal} - \theta_i, 0\}$, where $\boldsymbol{x}_t^{\intercal}$ denotes the transpose (of the row-vector $\boldsymbol{x}$). To simplify the analysis, let θ be distributed within each group according to the uniform distribution $U(0, b)$, where I assume $b > y(\hat{\boldsymbol{x}})$. This ensures that some firm will always exit regardless of the final price. Since both groups populate the unit interval and the incumbents always have access to their firm, the measure of potential firms with at most θ_i as their distribution cost can be written $\frac{\theta_i}{b} + (\sigma - 1)\frac{\theta_i}{b} = \sigma\frac{\theta_i}{b}$. While a firm may produce goods, the decision to sell them on the market depends on whether the revenues raised covers the distribution costs (production costs are sunk at this stage), hence the sales of a firm j can be written:

$$y_j = \begin{cases} y(\hat{\boldsymbol{x}}) & \text{if } py(\hat{\boldsymbol{x}}) - \theta_j \geq 0 \\ 0 & \text{else.} \end{cases}$$

Market clearing requires that expenditure on consumption equates generated revenue. To focus on how redistribution of rents affect the incumbent's incentives, fix some total expenditure e for the economy.

Since all firms are identical and the distribution of θ is identical for both populations, a unique $\hat{\theta}$ identifies the threshold level of θ for both incumbent firms and opposing elite firms. Firms with $\theta_i > \hat{\theta}$ choose not to sell. Because the distribution of θ is uniform, a ratio $\hat{\theta}/b$ of both incumbent and opposing elite firms sell; thus the market clearing condition can be written:

$$e = \left(\frac{\hat{\theta}}{b}\right) \int_0^{\sigma} py\left(\hat{\boldsymbol{x}}\right)\, di = \left(\frac{\hat{\theta}}{b}\right) py\left(\hat{\boldsymbol{x}}\right) \sigma. \tag{B3}$$

Consider the market dynamics as σ increase. With undifferentiated goods, competition is channeled through price, and new entrants must undercut incumbents by an arbitrarily small amount to sell their goods. Incumbents must follow suit to stay in the market, thereby pushing down the market clearing price. As this happens, the least efficient firms can no longer turn a profit and is forced to exit. Hence, a process of creative destruction takes place whereby new entrants force inefficient incumbents out of the market. The key observation is the segregation of firm ownership; firms pushed out belongs to incumbents, firms entering are controlled by opposing elites. Incumbents who remain in the market are however also worse off, as intensified competition reduce profits. Schumpeterian competition therefore reduces an incumbent's ex-ante expectation of rent-seeking opportunities through two effects; (a) a replacement effect that reduce the likelihood of remaining in the market and (b) an intensification effect that reduce the expected rents conditional on surviving in the market. I now establish this logic formally. First, note that holding $\hat{\theta}$ fixed, implicit differentiation of (B3) gives $\partial p/\partial\sigma = -p/\sigma < 0$. Hence, as more firms enter the market clears by putting a downward pressure on price. This in turn renders the most inefficient firms unproductive forcing them to exit. The relevant condition is therefore the threshold

firm for which profits are zero; i.e. $py\left(\hat{\boldsymbol{x}}\right) - \hat{\theta} = 0$. Since this equation defines $\hat{\theta}$ for all σ, it can be treated as an identity that defines the equilibrium price, $p = \hat{\theta}/y(\hat{\boldsymbol{x}})$. Substituting for p in (B3), the Implicit Function Theorem gives the full effect on $\hat{\theta}$ from an increase of σ:

$$\frac{d\hat{\theta}}{d\sigma} = -\frac{\hat{\theta}}{2\sigma} < 0. \tag{B4}$$

Consider the incentives the incumbents face in setting σ at this stage of the game. Formally, given $\hat{\boldsymbol{x}}$, expected rents of incumbent i can be written

$$\mathbb{E}[r(\sigma|\hat{\boldsymbol{x}})] = \mathrm{P}[\theta_i \leq \hat{\theta}(\sigma)]\big(p(\sigma)y - \mathbb{E}[\theta_i|\theta_i \leq \hat{\theta}(\sigma)]\big),$$

where the first term captures the replacement effect and the second term the intensification effect. Simplifying this expression and writing it in terms of $\hat{\theta}$;

$$\mathbb{E}[r(\sigma|\hat{\boldsymbol{x}})] = \frac{\hat{\theta}}{b}\left(\left(\frac{\hat{\theta}}{y\left(\hat{\boldsymbol{x}}\right)}\right) y\left(\hat{\boldsymbol{x}}\right) - \int_0^{\hat{\theta}} \left(\frac{1}{\hat{\theta}}\right) \theta_i \, d\theta_i\right) = \frac{\hat{\theta}}{b}\left(\hat{\theta} - \frac{\hat{\theta}}{2}\right) = \frac{[\hat{\theta}]^2}{2b} > 0.$$

Differentiate to find

$$\frac{d\mathbb{E}[r]}{d\sigma} = \frac{\hat{\theta}}{b}\frac{d\hat{\theta}}{d\sigma} < 0, \tag{B5}$$

where the sign follows from (B4). Schumpeterian creative destruction unambiguously gives the incumbents incentives to keep the market as narrow as possible. As we will see next, direct supply and demand effects in input factors produce the same result.

Supply and Demand of Input Factors

With every firm identical and a random distribution of distribution costs, every firm hold identical expectations. Of n inputs, let the supply of $k \in \{1, 2, ..., n\}$ of these be in finite supply and thus subject to market clearing prices. The remaining $n - k$ are purchased on an open market at exogenously given prices. Every firm produce according to an increasing a concave production technology, $y(\boldsymbol{x})$, that is homogenous of degree $s < 1$. That is, the production technology exhibits decreasing returns to scale. To keep the discussion focused, I assume $y(\cdot)$ satisfies the Inada conditions. At the stage of production, σ is set and so all firms know p and $\hat{\theta}$ with certainty. Uncertainty revolves around the individual draw of θ_i, which every firm holding the expectation $\mathbb{E}[\theta_i|\theta_i \leq \hat{\theta}(\sigma)] = \hat{\theta}/2$. Expected rents at this stage can thus be written:

$$\mathbb{E}[f(\boldsymbol{x}|\boldsymbol{\omega}, \sigma)] = \frac{\hat{\theta}}{b}\left(\left(\frac{\hat{\theta}}{b}\right) y(\boldsymbol{x}) - \boldsymbol{\omega}\boldsymbol{x}^{\mathsf{T}} - \frac{\hat{\theta}}{2}\right). \tag{B6}$$

Owing to the Inada conditions, the optimal point $\hat{x}_i$ lies in the interior for every

i. Let $\hat{\boldsymbol{x}} = (\hat{x}_1, \hat{x}_2, ..., \hat{x}_n)$ denote the optimal points satisfying the first order conditions:

$$\left(\frac{\hat{\theta}}{b}\right)\frac{\partial y(\hat{\boldsymbol{x}})}{\partial x_i} - \omega_i = 0 \qquad i = 1, 2, ..., n. \tag{B7}$$

Let $\frac{\partial \boldsymbol{y}}{\partial \boldsymbol{x}} = \left(\frac{\partial y}{\partial x_1}, \frac{\partial y}{\partial x_2}, ..., \frac{\partial y}{\partial x_n}\right)$; substituting (B7) and using Euler's Homogeneous Function Theorem, equilibrium expected rents can be written as;

$$\begin{aligned}\mathbb{E}[f(\hat{\boldsymbol{x}}|\boldsymbol{\omega}, \sigma)] &= \frac{\hat{\theta}}{b}\left(\left(\frac{\hat{\theta}}{b}\right)\left(y(\hat{\boldsymbol{x}}) - \frac{\partial \boldsymbol{y}}{\partial \boldsymbol{x}}\hat{\boldsymbol{x}}^{\intercal}\right) - \frac{\hat{\theta}}{2}\right) \\ &= \left(\frac{\hat{\theta}}{b}\right)^2\left((1-s)y(\hat{\boldsymbol{x}}) - \frac{b}{2}\right) \geq 0.\end{aligned} \tag{B8}$$

For an economy to exist, this must be positive, since otherwise no firm would produce. Hence, we have the restriction

$$(1-s)y(\hat{\boldsymbol{x}}) \geq \frac{b}{2}. \tag{B9}$$

In principle, since b is arbitrary, we can always find a b sufficiently close to 0 for an economy to exist. For our purposes however, it is more convenient to assume that s is such that it satisfies (B9) given $b > y(\hat{\boldsymbol{x}})$. Now, to understand the intensification effect in factor input prices, consider what happens to factor input prices if σ expands. Let x_o denote input factors with exogenously determined prices. Then $\partial\omega_o/\partial\sigma = 0$. Let x_j denote factors with fixed supply, the price of these satisfy

$$X_j = \int_o^{\sigma} \hat{x}_j(\boldsymbol{\omega}, p)di = \hat{x}_j(\boldsymbol{\omega}, p)\sigma. \tag{B10}$$

Then, an influx of firms means demand shifts out while supply remains fixed. Thus, ω_j must increase to clear the market. To show this formally, (B10) implies that ω_j responds to changes in σ. Without loss of generality, assume that the first o factor prices are exogenous, with the remainder being determined endogenously. Write $\boldsymbol{\omega}(\sigma) = (\omega_1, \omega_2, ..., \omega_o, \omega_{o+1}(\sigma), \omega_{o+2}(\sigma)...\omega_n(\sigma))$. Since (B10) must hold for all σ, treat it as an identity and totally differentiate:

$$\frac{dX_j}{d\sigma} = 0 = \hat{x}_j + \sigma\frac{d\hat{x}_j}{d\sigma},$$

where $dX_j/d\sigma = 0$ follows by assumption, since X_j is fixed. It now follows that

$$\frac{d\hat{x}_j}{d\sigma} = -\frac{\hat{x}_j}{\sigma} < 0. \tag{B11}$$

Now consider the political incentives the incumbents have at this stage of the game when setting σ, holding the Schumpeterian effects constant. Since $\hat{\boldsymbol{x}}$ must lie in the interior, $\max_{\boldsymbol{x}} \mathbb{E}\left[f(\boldsymbol{x}|\boldsymbol{\omega},\hat{\theta},b)\right]$ can be characterized as an unconstrained maximization problem. Applying the Envelope Theorem yields:

$$\frac{d\mathbb{E}\left[f(\hat{\boldsymbol{x}}|\boldsymbol{\omega},\hat{\theta},b)\right]}{d\sigma} = \left(\frac{\hat{\theta}}{b}\right)^2 (1-s)\left(\sum_{j=o+1}^{n} \frac{\partial y}{\partial x_j}\frac{dx_j}{d\sigma}\right) < 0, \tag{B12}$$

where the sign follows from (B11). Here too, the partial effect of increasing competition is negative. This comes from the fact that as a greater mass of firms translates into greater demand for input factors, and with at least a subset of these factors fixed in supply, the result is an increase in factor input prices. Hence, increasing σ has a second intensification effect on the competition for input factors, which serves to drive up their prices. Again, an incumbent unambiguously prefers limited competition.

The incumbent's incentives and the Economy

The above analysis shows that incumbents have little incentives to support competitive markets on economic grounds; they face smaller profits if they produce, and a greater likelihood of being pushed out of the market. Formally;

Proposition 5. *The incumbent's first-best choice is* $\sigma = 1$.

Proof. Differentiate (B8) to find:

$$\frac{d\mathbb{E}[f(\sigma|\boldsymbol{\omega})]}{d\sigma} = \frac{2\hat{\theta}}{b^2}\left((1-s)y(\hat{\boldsymbol{x}}) - \frac{b}{2}\right)\frac{d\hat{\theta}}{d\sigma} + \left(\frac{\hat{\theta}}{b}\right)^2 (1-s)\frac{dy(\hat{\boldsymbol{x}})}{d\sigma} < 0, \tag{B13}$$

by (B4) and (B12). ■

While the incumbents prefer a narrow market, this is typically not in the interest of the general public. Indeed, uncompetitive markets limit an important channel of growth—more productive new entrants. Here, this is represented by an increase in average productivity and lower average distribution costs. To relate total output to the mass of firms, the amount of goods sold can be written; $Y(\sigma) = \frac{\hat{\theta}}{b}\int_0^{\sigma} y(\hat{\boldsymbol{x}})dj = [\hat{\theta}\sigma y(\hat{\boldsymbol{x}})]/b$. Totally differentiate to find:

$$\frac{dY(\sigma)}{d\sigma} = \frac{1}{b}\left(\hat{\theta}y(\hat{\boldsymbol{x}}) + \hat{\theta}\sigma\frac{dy(\hat{\boldsymbol{x}})}{d\sigma} + \frac{d\hat{\theta}}{d\sigma}\sigma y(\hat{\boldsymbol{x}})\right).$$

The first term captures the beneficial effects of more firms with access to the market; the second term limits this effect by decreasing the average size of firms due to increasing factor input prices; the last term captures the effects of creative destruction as inefficient firms choose not to sell.

Proposition 6. *The economy is expanding in σ; i.e. $dY(\sigma)/d\sigma > 0$.*

Proof. First suppose that all input factors are exogenous and recall that for any x_o, $dx_o/d\sigma = 0$. Using (B4), we find

$$\frac{dY(\sigma)}{d\sigma} = \frac{y(\hat{\boldsymbol{x}})\hat{\theta}}{2b} > 0.$$

It remains to consider the k cases of factors with fixed supply. For this purpose, without loss of generality set $k = n$. Recall that y is a homogeneous function of decreasing returns to scale. By expanding $dy(\hat{\boldsymbol{x}})/d\sigma$ and substituting in (B11), the second term can be written $\hat{\theta}\frac{\partial \boldsymbol{y}}{\partial \boldsymbol{x}}\hat{\boldsymbol{x}}^{\intercal}$. Apply Euler's Homogeneous Function Theorem on the first two terms and substituting for $d\hat{\theta}/d\sigma$ in the last term;

$$\frac{dY(\sigma)}{d\sigma} = \frac{\hat{\theta}}{b}\left(y(\hat{\boldsymbol{x}}) - \frac{\partial \boldsymbol{y}}{\partial \boldsymbol{x}}\hat{\boldsymbol{x}}^{\intercal} - \frac{y(\hat{\boldsymbol{x}})}{2}\right) = y(\hat{\boldsymbol{x}})\frac{\hat{\theta}}{b}\left(\frac{1}{2} - s\right). \tag{B14}$$

For this to be positive, we must have $1/2 > s$. Through the existence condition, (B9), this holds true:

$$\frac{1}{2} \geq 1 - \frac{b}{2y(\hat{\boldsymbol{x}})} \geq s$$

since $b > y(\hat{\boldsymbol{x}})$. Conclude $dY(\sigma)/d\sigma > 0$. ■

The proof uses $b > y(\hat{\boldsymbol{x}})$, or equivalently, $s < 1/2$. Both can be interpreted as conditions of inefficient economies. The former as saying that firms are inefficient in their distribution, in the latter as saying that firms are inefficient in their production. With $s > 1/2$, the economy still expands if relatively few goods are in fixed supply. Note too that this way of defining Y ignores positive welfare effects from higher wages and more efficient distribution.

In sum, propositions 5–6 establishes the micro-foundations of $f(\sigma)$ used in the main model. These foundations rely on two simple modifications to the standard production model. Incumbents prefer narrow markets to limit Schumpeterian creative destruction that (a) reduces the likelihood of being competitive enough to serve the market and (b) the expected rents from doing so, as well as detrimental supply- and demand effect that pushes up production costs. In contrast, the economy expands with competition as bloated, inefficient firms are pushed out by nimble competitors that operate with higher productivity.

Nevertheless, the effects described here are not universal. In well-functioning markets, innovative incumbents can thrive on competition through spill-over effects; in markets with fierce competition and a shortage of inputs further competition may prompt incumbents to reduce output more than new entrants can make up for. But in markets with a lack of competition, a few dominating firms operate well beyond the point of decreasing returns to scale and have no incentives to reduce inefficiencies. In such markets, ubiquitous to low- and medium income countries—the objects of study in this paper—increased competition generates greater growth potential.