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Historical Lessons for Economic Development

The European Experience

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First Draft

Economic growth is not easy to decipher. Its spurts in the past (during the Industrial Revolution, for instance) defy simple explanations, as do the bursts of technological change that punctuate its visits.[1] Growth today is much the same. Indeed, social scientists still cannot explain why some contemporary economies remain mired in abject poverty while others miraculously prosper.

Growth is then our great enigma. Yet we can say something about it if our focus narrows. Here the focus will be restricted considerably: it will be limited to how the state and property rights affected Western Europe's economic development between the end of the Middle Ages and the nineteenth century—the so called early modern period of state formation and preparation for economic growth. We restrict it further to rights over land and physical and financial capital. Although that leaves aside less tangible assets such as intellectual property, rights to land and capital are hardly narrow topics, and they have the virtue of having figured prominently in the new institutional economic history that Doug North helped pioneer.[3] Thanks to that flourishing body of scholarship, we can draw some firm conclusions and at the same time offer some tantalizing suggestions for comparative research. The conclusions, interestingly, all point to the role of the state in European economic development. Indeed, what matters the most are the state's demands for military resources and the political institutions that control those resources. They were what shaped property rights and determined economic outcomes in the West.

1. Property rights, warfare, and state economic intervention

In the burgeoning literature on property rights, it is rights to land that have dominated the economic history of pre-industrial Europe and rightfully so. They lose their importance only

[1] McCloskey [1994]; Mokyr [1990].

[2] Davis and North [1971]; North and Thomas [1973].

after agriculture has lost its stranglehold over the economy. But before that revolution, agriculture loomed large in the economy, and a reform of property rights—the catch all term was enclosure—seemed the key to agricultural growth. The argument seemed obvious to contemporary observers and to social thinkers from the nineteenth century to the present. For an eighteenth-agricultural reformer like Arthur Young, for instance, enclosures created efficient property rights, and the efficient property rights were what vaulted English farmers ahead of their continental counterparts. Thanks to enclosures, Young maintained, the English cultivated large enclosed farmsteads; without enclosures, agriculture across the Channel staggered under the heavy burden of small peasant farms and open fields. Similar reasoning took root in Marxism. Marx himself believed that economic growth would not begin until peasants were stripped of their common rights and of their small parcels of land, and his claims were reinforced by nineteenth century scholarship—much of it German—which exaggerated the extent and the vices of open field farming.[3] From there the faith in enclosure made its way into historical scholarship.

Recent economic history has now shattered this enduring vision of the countryside, by demonstrating that enclosure explains only a small fraction of agricultural productivity growth in both England and France. Enclosure only mattered where it was a prerequisite for a radical change in crop type or a necessary prelude to supplying public good such as drainage. Otherwise, open fields were nearly as productive as enclosed, suggesting that whatever the gains in efficiency, enclosure had been milked for all that it was worth to the economy as a whole. The same could be said for a related reform of property rights, the practice of engrossing farms, or, in other words, of cobbling them together into large units. Though highly touted, engrossing too accounted for only a fraction of agricultural productivity growth, and despite all the worrying about small peasant farms in France, no obstacles stood in the way of achieving the optimal farm size.[4]

[3] Allen [1992]; Hoffman [forthcoming].

[4] Allen [1992]; Hoffman [forthcoming].

Why did engrossing and enclosing matter so little? Why were they not major stumbling blocks to productivity growth? Because open fields (and peasant farming in general) were more flexible and accomodating than historians have supposed. And even more important, when peasants and landlords did have to rearrange property rights to avoid serious losses in efficiency, they could usually do so voluntarily and with relative ease. True, peasants and landlords did argue bitterly over redistribution, but they spared themselves serious misallocation of land. By the eighteenth century, if not long before, there was enough of a rental and sales market in England, France (and undoubtedly the Netherlands and parts of Germany as well) to permit any necessary recontracting. There was enough flexibility in the legal system too, hardly a surprise given the ingenuity early modern Europeans demonstrated in auctioning land rights off and in devising new contracts for the use of land. When a particular property was threatened by externalities—say in a forest used for both lumber and feeding pigs—it could be leased the highest bidder, who would internalize the externalities. And where seemingly archaic rights existed—such as the rights villagers might shared to local pasture—they were no mark of inefficiency. Rather, they were usually a sign that individual property rights were simply too costly to establish, as in the mountain pastures, where demarcating individual grazing tracts would have exacted a high toll. Contrary what some contend, such local commons in fact raised few barriers to technical change or economic growth.[5] Evidence from developing countries suggests much the same: in small scale societies today, common property rights raise no barrier to the efficient use of resources.[6] There too, it is simply too costly to demarcate individual property and the actors know one another too well for asymmetric information to be a barrier to efficient outcomes.

There were of course exceptions to this generalization. In early modern Spain, for example, agriculture suffered grievously from the depredations of the Mesta, the privileged royal

[5] Bloch [1930]; idem [1966]; Root [1987]. For the contrary view, see Grantham [1978]; Meuvret [1977-88]; and Hoffman [forthcoming].

[6] Ellickson [1993].

sheep raisers' monopoly. The Mesta had rights to drive sheep across farm land throughout much of the country, and the havoc the animals wreaked discouraged improvements in arable farming.[7] Similarly, in Old-Regime France, it would have paid to drain marshes and to irrigate dry land, and agricultural productivity would have benefited. Yet when entrepreneurs initiated drainage **or** irrigation projects, they ran afoul of overlapping property rights, and their projects were smothered in endless litigation.[8]

What explains the exceptions? In the case of the Mesta, it is clear (as Doug North has noted) that both private and public solutions to the problem were out of the question.[9] A private solution would certainly be conceivable—having the arable farmers pay the sheep owners to stay away—but it would require organizing the arable farmers, a diffuse and powerless group. After all, these were not peasants from the same village bargaining over access to a local pasture. They were farmers spread throughout Spain. Getting them to make payments would founder on free riding—a difficulty recognized long ago by Ronald Coase.[10] As for one obvious public solution to the problem—restricting the Mesta's rights—the hurdle here was the Spanish crown. Behind the Mesta stood a powerful pressure group. More important, the Mesta was a significant source of revenue for the crown, one that could be taxed at low administrative cost.[11] Restricting it would have hurt the crown financially, at least in the short run, and long run growth might not have replenished the royal coffers quickly enough. In the case of the Mesta, the state was thus the villain. With a private solution out of the question, it could have resolved the problem of the Mesta in favor of long term growth, but for important political reasons it did not do so.

The state was the villain in France as well. The ultimate obstacle here was less the

[7]North and Thomas [1973], p. 4-5; De Vries [1976], pp. 49-50.

Rosenthal [1992].

[9]North and Thomas [1973], p. 4-5.

[10]Coase[1960].

"Elliot [1963], pp. 116-17.

overlapping property rights themselves than the French legal system. It encouraged lawsuits against drainage and irrigation projects, lawsuits filed by defendants who sought to siphon off profits from the project. The suits in turn upset or discouraged private bargaining. The legal system as a whole inspired such destructive litigiousness, from the rules of evidence to the fact that judicial compensation rose with the number of cases a judge tried. Worst of all was the system's lack of finality. It was impossible to get a definitive decision, even if one appealed to the royal council, and any private bargain that resolved the property rights for an irrigation project might be upset years later in court. Why then irrigate farm land or drain marshes, when private bargains were insecure and profits could always be taken away?[12]

Although complaints against the legal system were widespread on the eve of the French Revolution, reform proved politically impossible. Changing the judges' compensation would wreak havoc with the sale of judicial offices, a cheap way for the French state to borrow. Streamlining courts so as to create one supreme authority at the top would break the unwritten rules of royal politics. The crown had stitched the kingdom together by according judicial privileges to powerful interest groups. Abolishing their privileges—even for the sake of judicial rationality—was out of the question. Finally, repeated legal appeals served the interests of judges, royal agents, and even the king himself. They all used the appeal process to extract revenue. It is no surprise then that legal reform required a bloody revolution.

The common thread in each of the exceptions is the state. It was the state, not property rights themselves, that ultimately blocked agricultural growth. It was the state's legal system in France and its alliance with the sheep raisers in Spain. The implication is that we should redirect our attention away from property rights and toward the state. We should ask how it affected bargaining over property rights and, more generally, how it influenced the economy as a whole.

[12]Rosenthal [1992]. The state's fiscal system raised yet another barrier to drainage because much of the drained land fell into the hands of privileged landowners and hence disappeared from the tax roles. Paradoxically, from the fisc's point of view, an undrained marsh might be worth more than valuable drained farm land.

The state went well beyond tampering with property rights; we should examine all of its entries in the economic arena.

Obviously, it will not do simply to blame the state for evil deeds. We have to pursue the reasons for the state's actions and ask why, for example, a state adopts policies that ultimately harm the economy. After all, in each of our exceptions, the ruler—an absolute monarch—had powerful reasons to cling to his policy despite the harm to the economy. What motives and constraints dictated such a ruler's behavior? We can ask the same question about all the state's interventions in the economy.

Posing that question today is far from simple, given the multiplicity of issues and interest groups and the likelihood of electoral cycles. But in early modern Europe the task is not so daunting. There practically the unique goal of rulers was to fight war, whether for the glory of monarch, as in the France of Louis XTV, or for the defense of a homeland, as in the Dutch battles against Spain. Warfare had created the European state at the end of the Middle Ages. It begot the officials and the permanent taxation that paid the rising costs of armies, navies, and fortifications. Military expenses (including subsidies to allies) dominated state budgets, particularly in wartime, and in a continent of sovereign states war was inescapable. Indeed, it haunted Europe almost constantly until the nineteenth century, when diplomacy was revolutionized and states grew strong enough to ward off civil war.[13]

As far as economic growth is concerned, the problem with war was the havoc it wreaked upon the economy. The damage was both direct and indirect The direct damage resulted from the undisciplined behavior of early modern armies, which laid waste even to friendly terrain. They seized livestock and seed corn—both agricultural capital—and often held civilians for ransom. The prudent fled and stayed away if the maneuvers lasted long. Meanwhile weeds and brush quickly choked fields, destroying years of capital invested in clearing land. Trade soon

[13]Schroeder [1994], pp. vii-xiv.

collapsed and agricultural productivity plummeted. It might take a generation to recover.[14]

Beyond the harm to agricultural trade and capital, warfare destroyed people as well. Soldiers carried new disease as they marched. Fleeing civilians did the same. In the short run, deaths soared, although the long term effects on the population were probably small.[15]

Worse still were the consequences for financial capital. With warfare, expenses shot skyward, and because taxes never kept pace, states had to borrow to meet the costs of war. At war's end, default was a tempting option, and nearly every western European country yielded to the temptation. If creditors subsequently refused to lend, states resorted to a variety of expedients such as the sale of government offices—in effect borrowing from officials whose ability to pressure the government might make them willing to lend. If such expedients failed, states raised money by force manipulated the currency. They debased the coinage, as in Central Europe during the Thirty Years War, or issued enough paper money to unleash rapid inflation, as in France during the Law affair or the Revolution.[16]

Currency manipulation did more than just harm the state's own creditors, who (so long as their loans were voluntary) could charge a risk premium for government loans. It struck at all lenders and indeed at all parties to long term contracts. The only way to avoid injury was to write contracts stipulating payment in specie or in kind. That escape ruled out the convenience of money, an obvious burden on long term transactions. Worse yet, it was sometimes illegal. In France, for example, most long term loans could not specify in-kind payment, and most long term contracts could not demand silver or gold. With no way to parry the effects of currency manipulation, investors and other vulnerable parties shunned long term contracts. They preferred hoarding, short term deals, or the purchase of secure physical assets such as real estate.

[14] Gutmann [1980]; Hoffman [forthcoming].

[15] Cabourdin, Biraben, and Blum [1988]; Weir [1989]; Walker and Schofield [1989]; Fogel [1992, 1993].

[16] White [forthcoming]; Velde and Sargent [forthcoming]; Sussman [1993]; Hoffman, Rosenthal, and Postel-Vinay [1995].

Investment and long term lending undoubtedly suffered as a result. We can see as much if we look at lending between private parties in Paris after the inflation of the Law affair. It devastated the private capital market and so terrified lenders that they forsook long term loans for a generation.[17]

The indirect effects of government intervention were felt in other ways too. The fiscal apparatus encouraged overinvestment in real estate, and government borrowing probably crowded out private investment, although that is a subject is still open to debate.[18] Governmental interference with commerce penalized middlemen and limited gains from trade, although there too research has yet to determine what precisely the losses were. Similarly, when the state created monopolies—either to repay political debts or to tax or borrow against monopoly profits—consumers undoubtedly suffered, and the regulation of the monopolies perhaps stifled technological change. Economic historians, though, have yet to tally the long term effects of such intervention in the early modern economies—a fruitful topic for future research.

There is another subject that deserves their attention of historians as well: the trade off faced when states went to war. Fighting wars and paying the bills motivated most state intervention in the economy. The state's ruler faced a difficult choice between having enough resources to fight effectively and risking both political costs and injury to the economy. How can we model the choice he confronted?

2 The Politics of Making War and Paying its Costs

For economists, warfare is a repugnant subject It is so not just because of its human toll, but because it violates our fundamental belief that actors will seek to achieve efficient allocations

[17] Hoffman, Postel-Vinay, and Rosenthal [1995].

[18] Williamson[1984]; Heim and Mirowski [1987]; Mokyr [1987]; Neal [1990], pp. 216-22; Hoffman, Postel-Vinay, and Rosenthal [1994]; Clark[forthcoming].

of resources. Furthermore, warfare is driven by processes that lay squarely in the world of politics. Yet there are signs of a new interest in war in economics. Theorists have begun to explore how different political regimes survive warfare when the outcomes are driven by resources. In the spirit of such theory, we argue that warfare is not exogenous to economic activity. Rather, it is a gamble taken in a strategic context, where the level of economic activity of rival nations matters in the decision to go to war or not. We deepen the analysis by showing how the economic effects of war reach far beyond the mere loss of life and destruction of capital.

Obviously, war means considering politics. Politics enters the problem in two ways. First, the state amasses most of the resources used to make war. It dictates the efficiency of the fiscal system and helps structure financial markets.[19] Its ability to fight wars is then a function of its resources and its success at promoting economic growth, for a state that can expand the tax base or raise tax rates has a greater chance of winning a war.

The second way in which politics enters is that decisions to go to war are political ones. Ultimately, politics determines who makes decisions about war; it is not the result of market competition. From the point of view of the political decision makers, wars can be considered investment projects with an array of potential costs and returns. The costs include the loss of lives and resources while the war is waged, and the returns include territory and other resources wrested from the loser or other parties. Both the costs and returns will be distributed across the country's population. Which projects get funded—which wars get fought—depends on whether the political decision makers internalize the social costs and benefits from war. In most instances, their returns will not be the same as society's, and it will be the political system that determines the share of the returns they receive. If the decision makers reap most of the benefits of war and

[19]There were debates in France about the structure of government debt; see Hoffman, Postel-Vinay, and Rosenthal [1995]; and Potter-Rosenthal [1994]. See also Neal [1990], Tracy [1985], and North and Weingast [1989]. By the efficiency of the fiscal system, we do not mean lack of corruption but rather the levying of taxes that promote economic growth. Cf. Levi [1988].

bear little of the cost, countries will fight too much. The opposite is certainly conceivable, but it seems unlikely in the case of early modern Europe, where taxes fell on the powerless and countries would tend to fight too much. We will therefore assume that countries fought more than was optimal with some countries being even more bellicose than others.

We leave aside the evolution of international relations—a task better suited to political scientists—and turn instead to the impact of warfare on domestic economies. Clearly, public finance is central to the analysis. With revenue armies can wage war, but beyond the destruction that war causes we must take into account the harm that war finance does to the domestic economy. If the fiscal system perverts incentives for investors, the damage to the economy can be enormous.

The argument that economics plays a central role in warfare is hardly novel, for history is full of examples of small states like Venice, Genoa, the Low Countries, or England out competing their bigger rival or fighting them to a stalemate. These victors shared a few characteristics in common: they enjoyed higher per capita incomes than their rivals and they were far better than their rivals at transforming the government's share of that income into armies and weapons. In particular, they had more efficient tax systems and more effective financial markets, and their economies were more commercialized. While their commercialization was one of the causes of their higher per capita incomes, it in turn depended on politics: in particular, on having a political system that did not confiscate the returns to trade. In the early modern period, the connections between politics and economic performance thus ran both ways.

One might suppose that the connections were actually quite simple here. Countries that taxed heavily to wage war would experience slow growth. Countries whose taxes were held in check by political institutions would avoid war and prosper. The problem, though, is that real per capital tax rates were actually high in the thriving economies of early modern Holland or eighteenth-century Britain, where representative assemblies restrained the fisc. Taxes were relatively low in the less prosperous economies of France and Spain, where bellicose absolute

monarchs held sway. In fact, by the late eighteenth century, the French tax burden was not only low in absolute terms, it also took up a far lower share of per capita income—nearly half what it did in Britain.[20]

To assess the impact of the fiscal system on the economy, then, we cannot rely on per capita tax rates. Only marginal rates will do. The marginal rates must include not only the actual taxes collected but the hidden costs imposed by the fisc, from bribery to tax evasion. If marginal rates are high enough, they can bring transactions to a halt in the taxable sector of the economy or drive resources into tax exempt activities.[21] Per capita taxation will then be low even though marginal rates are high. Such a process may in fact account for the lower per-capita tax levies in absolutist regimes, but we should keep in mind that it was an equilibrium phenomenon. The meager evidence in fact suggests that marginal rates were negatively correlated with levels of per capita taxation. Absolute monarchies imposed high marginal rates of taxation on many sectors of their economies, while under parliamentary regimes tax rates did not change at the margin.[22]

We brush aside one further complication: the obvious fact that war itself can change political institutions. That problem is dealt with elsewhere.[23] Here we take political institutions as given for each country in early modern Europe. The assumption is less restrictive than it might seem, for in Europe it was domestic politics rather than international relations that drove political change.

Rather than burden this essay with a full blown model we have preferred a descriptive

[20] Hoffman and Norberg [1994]; Mathias and O'Brien [1976]; Brewer [1989].

"Hoffman [1986].

[22] This argument is not novel; cf. North [1981], pp. 147-57; Olson [1982], De Vries [1976]. What distinguishes our approach is that politics is not the sole driving force behind tax rates. Rather, it is the need to raise resources for warfare.

"Rosenthal [forthcoming].

analysis.[24] We sketch a simple two-stage model in an appendix to this paper, limiting ourselves to the simple case of an initial decision to go to war and the ensuing stage of imposing taxes. Although a fully dynamic model would be valuable, most of the additional insights would concern international relations—an aspect of the problem that we wish to underplay. The dynamic model would yield little that is new about taxes—the problem that actually interests us.[25]

While our focus is the problem of paying for war, we neglect the issues of technological change and strategic ability. Changes in military technology, we would argue, brought temporary rather than long run advantages to certain countries.[26] So did strategic ability, such as superior military leadership. For our purposes both simply contributed to the uncertainty surrounding the outcome of war.

Before the nineteenth century, it was the executive branch of government (usually a king) that had control of foreign policy. The king, we assume, decided whether to go to war by weighing the probability of success, the attendant costs, and the rewards in case of success and the penalties in case of failure. Besides success and failure, we also allow for the possibility of draws.[27] The three outcomes were of course uncertain, but we assume that the odds of success

[24] The theoretical literature on warfare is extensive and our model is not novel. See Hirshleifer [1991, 1995]. Our model is described in the appendix.

[25] As far as resource allocation is concerned, the dynamic case would of greatest interest in instance where the relative strength of nations changed dramatically, but if we restrict ourselves the great states of Europe (England, France, the Netherlands, Prussia, Spain), such vast swings of power were relatively rare. No state achieved, dominance and none was eliminated, and the usual outcome of war was a draw.

[26] Cf. Parker [1988].

[27] Draws are not crucial per-se, but they do allow us to obtain an equilibrium and to get a bias in the king's assessment of the social value of war. For other ways to translate resource effort into outcomes and achieve an equilibrium, see Hirshleifer [1989].

rose as a country invested more in arms, provided that other countries did not increase their spending too. In our analysis, the king faces no penalties for draws, and hence he is likely to more aggressive than his subjects, who bear costs no matter what the outcome of the conflict is.[28]

While early modern kings faced no legal constraints on their rights to conduct foreign policy, they could not dispose of all their subjects' property at will, and they usually needed the assent of at least some of their subjects to fund wars. We call the subjects with a voice in such fiscal decisions the elite.[29] The term remains vague because it must encompass the variety of ways in which taxes were levied in early modern Europe.[30] The elites, we suppose, benefited when war led to victory. They earned spoils, found themselves covered with glory, or made profits on wartime loans and business. Yet war had a downside for the elite as well, for they had to pay part of the costs, and in case of defeat they faced far greater losses than the king, from death on the battlefield to default on government bonds. Relative to the king, their expected gain was lower, and we therefore assume that they had a stronger preference for peace.[31]

[28] Our that the king wants to fight more than his subjects can be justified in a variety of ways. Suppose, for instance, that the king wants to maximize tax revenues and that victory in war adds to the tax base.

[29] Although individual members of the elite undoubtedly face different costs and benefits in case of war, we assume that political institutions provide decision making rules that allow us to focus on the pivotal group within the elite. In short we assume that something like a median voter theorem applies to decisions within the elites. Since the elites are only consulted on tax levels, any rule for decision making can be translated into a coalitional requirement for passage of a tax change.

[30] To take the case of France, the king could seek resources from national organizations such as the Estates General or the Clergy. He could also request funds from regional institutions and raise capital from financiers. In England the king could turn to Parliament or borrow in the City.

[31] Examples here might include Medina-Sidonia in the case of the Spanish Armada, or that of French elites in 1715-26.

To model the interaction between the elites and the king in a simple way, we take our cue from history and divide the economy into two sectors.[32] In one the king alone controls the rate of taxation; in the other he increase the tax rate only with the approval of the elite.[33] The division into two sectors, we must stress, need not be along output lines; the two sectors can be defined by geography or personal traits. In France, for example, taxes like the faille fell under royal control in some regions and under elite control in others. In parts of the kingdom, the taille depended on social class and on residence in city or countryside. Much the same can be said of the rest of the fiscal system.

The assumption here is that negotiations with the elites are integrated, a simplification that often proves to be false. This simplification reduces the public good problem in paying for warfare, but because we wish to emphasize that problem, we begin where it is minimal. Both the king and the elites have alternative uses for their resources, so there is a cost to the funds that they devote to war. Since war is an investment, the cost of resources devoted to it rise as the king becomes more patient. And the king knows that resources expended on warfare harm the economy and undermine the tax base, making it more difficult to fight in the future. History suggests that such an assumption is hardly unreasonable.

One final limitation of the model is that we present only the stage game in what was obviously a repeated process. Clearly, the repeated process will change the penalties and rewards in the decision to go to war. Resources expended in a loss will not be available for a future battle, while a victory may well provide resources for future conflicts. We by and large stick to the stage

[32] The king, we assume, does not ask elites to finance responses to aggression; he only turns to them when he wants to go on the offensive. Such a specification ignores the king's incentive to divert funds from defense to offense.

[33] The focus on rates captures the fact that sovereigns benefit from economic growth in both sectors of the economy.

game, though, because it would be difficult to track economic performance over time. Furthermore, although the penalties and rewards may change, the trade-offs involved in going to war will by and large remain the same.

We solve our model beginning with the second stage, resource procurement (see the appendix). If the king chooses to fight, he will mobilize resources until the marginal cost of his funds equals the marginal return from waging war. In equating marginal costs and returns, the king will have to take into account what he anticipates his enemies will spend. To mobilize the resources, the king can tax his own sector of the economy at will, but if it proves insufficient, he will have to negotiate with the elite for revenues from their sector. Negotiations of this sort were the bane of the powerful monarchs of Europe—from Charles V and Philip II in Central Europe and Spain to Louis XIII and his successors in France and the Stuarts in England. They searched unceasingly for funds—clear evidence that their own property did not suffice. The negotiations would determine the tax rates in the elites' sector of the economy.

The problem for the elites is that they have a single instrument to achieve three policy objectives:

1) allocate the burden of war between the king's sector of the economy and their own
2) decide the probability of victory when war is waged
3) control the king's war making.

To determine the interplay of these goals, we distinguish between cases where the elite can fix forever the resources they will provide and cases where the elite cannot make such a long lasting commitment for future plays of the game. If the elite can commit themselves to a long lasting level of funding, they can spare themselves the fate of many early modern representative assemblies: they provided the king funds, only to have him return and ask for more in a time of

desperation.[34] But if no such commitment is possible, they lose any control over the king's war making. They are then reduced to choosing a tax rate that is the best response to the rate the king imposes on his sector of the economy. That rate will rise the more they wish to win the war and fall the more costly are their resources. Anticipating their response, the king will impose a tax rate in his sector of the economy that optimizes his chances of being victorious. His tax rate will increase with his desire for victory, but it will fall if his own resources grow costly or if elites become more responsive. Given the anticipated resources that he can hope to muster, the king chooses which fights to pick.[35]

If the elites can commit to long term funding, they can use their control over finances to affect foreign policy. If they seek peace, they will commit to a low level of funding so as to discourage the king from fighting wars. They will accept a lower probability of victory than would be the case if they could not commit. The king's only recourse if he stills wants victory is to tax his own sector of the economy heavily. The resources at his disposal will nonetheless be lower than if the elites cannot commit themselves.

Conceivably, the elites will represent such a tiny fraction of the population that they will be able to pass the burden off on the rest of the king's subjects. They can then share the returns with the king. If so, they may even be more aggressive than the king, who may conceivably internalize popular opinion. The elites will then commit to high levels of funding ex-ante,

[34] For an example, see Beik [1985]. We ignore instances (as in parts of Germany) in which the king uses the initial grant of funds to assemble an army, which can then be employed to browbeat the assembly or even put it out of existence. That would amount to the sort of change in political institutions that we are not considering here.

[35] Because victory is a public good (returns to wining are split by the elites and the king) resource decisions are plagued by shirking. Win probabilities are thus lower in countries where kings are fiscally constrained than in countries where they are not

thereby raising the probability of victory and the king's willingness to fight.[36] In any case, once the king anticipates what the elite will do, he can forecast the resources he will have. With that forecast and information about his opponent's resources, he can deduce the expected payoff from war. If the expected return exceeds the costs, the king will fight.

With this framework, we can compare autocracy, absolutism, and parliamentary (or constitutional) monarchies. We imagine that these three regimes are arrayed along a single dimension: how much of the economy can the king can tax at will. Under pure autocracy the king controls the entire fiscal process. Under a parliamentary regime, the elites rule the fisc and can deny the king any funds at all when they do not wish to fight As for absolutism, it falls in between autocracy and parliamentarianism. Absolutism and parliamentarianism, unlike autocracy, are thus both forms of limited government, in that the executive is not unconstrained. The key difference between the regimes is the extent of the constraint[37]

Our model has three strong implications concerning the different political regimes. First, the willingness to fight wars will decline as we move from autocracy to absolutism and then finally to parliamentary regimes. Absolute monarchs will therefore be more bellicose than their parliamentary neighbors. Second, taxes will on average be lower under absolutism than under autocracy or parliamentary government under absolutism politics severely restricts fiscal extortion. Third, the net returns to war will be highest under parliamentary regimes. They will limit themselves to wars that are profitable and they will give their armies the resources needed to win. All three implications fit what we know about early modern history.

[36] The increase in excise taxes at the expense of property taxes in post 1688 Britain is consistent with such a possibility.

[37] Our specification of political regimes differ's from Olson's [199S] for whom Old-Regime France is a good example of an autocracy.

Our model also has implications for the fiscal systems of absolute monarchies. In absolute monarchies the king will tax his sector of the economy brutally. He will turn the screws even tighter if the elite is divided, for then the elite will face a worse free rider problem. Each subgroup of the elite will try to keep the benefits of the war while letting other subgroups pay the bills. As the number of subgroups increases, free riding will increase, causing the king to squeeze his sector of the economy even harder.

Absolutist regimes of this sort—France is an excellent example—end up with sharp differences in tax rates between different sectors of the economy. The fisc treads lightly on the elites' sector, such as privileged property in France. It crushes the rest of the economy, which is under royal control. With sharply different tax rates in the two sectors, mobile factors will shift out of the king's hands and into the elite's control. If the process is not halted, the king's tax base will erode—a problem that deeply troubled the French monarchy.[38]

There are three possible ways to stop the erosion. The first is having the king gain control of the entire economy by imposing autocracy. The second is parliamentarianism, as the king becomes increasingly dependent on the elite for funds. The third, and by far most likely possibility, is that the king steps in and limits the transfer of property rights. We therefore expect that absolutist regimes will have uneven tax rates in the economy and limits on transfers of property rights. That was the case in France. There the taille and the salt tax varied wildly from one place to another, and the state's fears about its tax base were yet another obstacle to the drainage of marshes. By contrast, under parliamentary regimes tax rates should be more nearly equal. That seems to have been the casein eighteenth-century England.[39]

[38]Hoffman [1986].

[39] Clearly the tax rate on consumption goods was much higher than the rate on durables or on savings in eighteenth century England. Yet these rates did not vary with location or with the tax payer's identity, as in France. It is in that sense that the English rates were more even.

A final set of implications concerns financial markets. Typically, absolute monarchs controlled the currency and hence the tax rate on financial transactions. Financial markets therefore formed part of their domain and offered tempting targets for heavy taxation. It is thus no surprise that absolute monarchs resorted to periodic expropriation in financial markets via tactics such as devaluation. It is no surprise either that politics has shaped the evolution of financial markets. To be sure, there were vibrant credit markets everywhere in Europe and even in absolute monarchies. They were hardly peculiar to parliamentary regimes. Nonetheless, it does seem that financial innovation in the early modern period belonged to parliamentary states such as the Netherlands and England.

History is consistent with the model's implications for warfare, taxation, and financial markets. But history also highlights two key variables in our model: the probability of wars' ending in draws and the opportunity costs of the resources needed to fight Early modern wars often ended in a draw; they were rarely decisive even when one side was thoroughly defeated. The Holy Roman Emperor, for example, captured the king of France in Pavia in 1525 and held him captive. But he did not conquer France or even attempt to do so. Such conquest of a whole country was rare in early modern Europe. When borders did shift it was instead because large countries were absorbing small buffer states or rearranging outlying provinces. Thus, despite a century of fairly successful warfare, the kings of France could only move their northeastern frontier a few miles. Apparently, battles were fought for marginal advantages rather than aggregate domination.

Because each battle was rarely decisive, because each campaign yielded only marginal gains, war often lasted years: the Hundred Years War, the Thirty Years War, or the century long struggle between the Netherlands and Spain. The king thus faced a choice between using resources now or holding them for the future. If he were patient, we would expect him weigh heavily both the threat of subsequent wars and the damage that high taxes would do to his economy in the future. He would not crush his economy with taxes to fight today. One the other

hand, if he were impatient, he would risk the damage that high taxes would do to the economy. He might be impatient by nature or simply because the military situation offered him an extraordinary opportunity for immediate gain.

Impatience of that sort drove much of the history of Spain and France. Philip II was driven to tax Spain heavily because of the revolt of the Low Countries, one of the richest territory in his dominion. If he did not commit resources to the battle, he risked losing the entire Low Countries—an extraordinary loss that justified crushing taxation in Spain. It was in his reign, though, the Spanish economy began to unravel.

Similarly, Louis XIV imposed a enormous burdens on France. Two factors explain his behavior. First, Louis XIV himself was an extraordinarily ambitious monarch who as he said himself "loved war too much." In other words, in assessing gambles Louis XIV was more likely to accept them and more likely to engage in aggressive warfare. Second, the prize available to him by the complication of the Austrian and then Spanish succession were of a magnitude heretofore unseen. Louis believed in 1701 that the Spanish Netherlands were his for the taking because of the succession crises in Spain. It was no longer a war for a few forts on the Northern border, it was supremacy. On both counts, Louis XIV could be expected to raise the burden on France to unprecedented levels.

Despite Louis XIVs expectations, by 1713 the outcome was clearly a stalemate. After his death, France cut its war expenditures; because Louis had raised the taxes and mortgaged future revenues, France had to default on its debts and manipulate its currency as well, which provoked a serious financial crisis. After that crisis was resolved, neither Louis XV nor Louis XVI ever engaged in the kinds of practices that had characterized Louis XIV. War with its atrocities and heavy economic cost continued, but its scope was limited.

During the last sixty years of the Old Regimes the kings of France alternated between policies of reform to increase the tax base and policies of intervention to raise the rate. But intervention remained limited. As a share of the economy, it no doubt declined: venal offices

were reduced in numbers rather than expanded, interference with financial markets was restricted to government debt, restraints on commerce were loosened, and investment in infrastructure actually increased.

Beyond shedding light on the history of France and Spain, our model also explains the broad pattern of incomes in Europe. While regimes did affect economic outcomes, their impact was limited. In early modern Europe, kings were not autocrats. Even when their powers were absolute, our model stresses the limits to their ability to raise funds for war. The constraints on their taxing and war making insured that in most of western Europe incomes remained with a relatively narrow band. As best we can tell per capital incomes never varied by more than one to four from the poorest to the richest[40] If we then consider regional differences in income within countries, they are likely to have been at least one to two--in other words, a substantial part of the total variation between countries.[41] If compare Europe with Asia or Africa (using either contemporary or past incomes) the range seems much greater. Thus variations in political regimes within Europe had a limited impact on economic growth. The impact was limited for a simple reason: all rulers recognized that it was essential to have some growth (or at least to avoid outright regression) in order to maintain the tax base and keep up with political rivals.

Our model is of little use after 1789 because warfare and politics changed abruptly. As a result of wars the political map of Europe was redrawn extensively between 1795 and 1870, for it was no longer true that the stakes of war were merely crumbs of territory. The technological change carried out during the Revolution once again gave tremendous advantage to offense relative to defense and allowed a winner to exploit a victory for large territorial gains. Because the risks associated with war increased, military investment rose, driven by the twin need to take

[40] See Crafts [1985], Madisson [1983], Bairoch [1965, 1976].

[41] Postel-Vinay [1992].

advantage of the returns to war and avoid the losses associated with defeat. On net it appears that after 1815 warfare became less frequent but more dramatic when it occurred. It remains for further research to disentangle the contribution of domestic politics, international relations, war technology and economic growth in driving the change from marginal to global war.

3. Conclusion

Absolute monarchies and parliamentary regimes behaved differently in early modern Europe. Our model holds warfare responsible for much of the difference. Indeed, the model implies that absolute monarchs will attack more, tax less and lose more often than their parliamentary rivals. It also explains the peculiarities of public finance in early modern Europe. It accounts for the relatively uniform taxes under parliamentary regimes and the wildly varying rates under absolutism, which required monarchs to limit the flow of assets between sectors of the economy. It sheds light on the indeterminacy of early modern warfare and on the histories of countries such as France and Spain, where monarchs were willing to sacrifice future economic growth for military glory. And the contrast between our model and history suggests why in the end per capita incomes in Europe did not vary greatly across political regimes.

If the model has a single lesson, it is that warfare must be taken seriously. Economists ignore it at their peril, particularly in the early modern period, when warfare was the mainspring driving politics, public finance, and government intervention in the economy. The problem with warfare, though, is that its causes go beyond the usual factors invoked by economists. It can be sparked by ideology, by nationalism, by religious hatred, and by a host of other factors that economists usually ignore.[42]

Although it escapes their usual terrain, warfare will be a tantalizing topic for economic

[42] North[1981;-1990]

historians. It raises a host of intriguing questions for comparative research, such as warfare's impact on financial markets in the various countries of Europe. The comparative research becomes even more fascinating if we reach beyond Europe's borders. In early modern Europe we rarely have anything approaching anarchy, apart from episodes during particularly violent conflicts or civil wars. If we look back to the early Middle Ages or to current day Africa, however, then anarchy does raise its ugly head, and if we extrapolate from the known effects of warfare on trade, we can understand why anarchy seems to bring with it economic disaster of unparalleled proportions. Can anarchy—the total lack of any security for property—be the greatest obstacle to economic growth? Yet another question arises if we compare the sovereign states of early modern Europe with the empires of Asia. In contrast to Europe, with its warring sovereign states, in an empire the ruler would presumably face a much lower threat of repeated warfare with neighboring sovereigns. He would not feel the constraint imposed by the threat of repeated warfare. He would not need to spare his economy in order to be able to fight another day. We would therefore expect him to bear down much more harshly, and economic growth would suffer. But only comparative research can answer such speculation.

Appendix: A Model of War Finance:

We illustrate the simplest case of our model, we assume that elites cannot commit to funding rules and that the opposing nation's war effort is given. Relaxing those assumptions does not alter the qualitative results of the analysis but it makes it a good deal more complex.

A nation's return to war is: $Y-\tau(T) +pW +qL +(1-p-q)D$.

Where Y is national income, T is military resources, and $\tau(T)$ is the total tax levy required to fund the military effort T. In other words, $\tau(T)-T$ measures the inefficiency of the tax system and it is assumed to be increasing with the intensity of taxation (T/Y). W is the return to winning, L is the return to losing and D is the value of draws (D and L are negative).[1]

The likelihood of each outcome depends on resource effort by the nation (T) and its opponent, (T_o). So $p= p(T,T_o)$; $q= q(T,T_o)$.

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[1] The specification of warfare that we have here is different from what has become standard in the literature. Some of our results would hold in a Tullock-Hishleifer setting, in particular it would be easy to show that introducing a bipartite resource allocation decision with each nation would reduce resource allocation to war as long as war outcome were public goods. Since those models, however, examine expected resource allocation they cannot distinguish between aggressiveness (which wars get fought) and resource intensity (how hard each war if fought); yet these questions are central to our analysis.

We assume that p and q are strictly concave.[2] The country's political structure is reduced to a king and a unified elite who control separate segments of the economy ($Y_k = (1-\beta)Y$, $Y_e = \beta Y$).

Further we assume that the elite and the crown share the returns to wars according to their share of the economy in case of wins and losses. So the elite's share of the returns to wining, W_e, is simply βW, ($L_e = \beta L$). The elite, however, bears the full burden of draws, $D_k = 0$ and $D_e = D$. Draws involve battles that resolve nothing, and we claim the crown cares less about such outcomes than the elite. A draw implies that no transfers between winners and looser occur and T and T_o are destroyed; moreover some members of the elite (military) die on the battlefield. Further the king makes promises that only pay off when he wins so he is insured against draws. Since some of those promises are made to the elite, it suffers when stalemates occur. Draws, nonetheless, have a lower social cost than outright losses. We assume that wars only vary by the value of success ($W \in [\underline{W}, W]$).

When a war opportunity arises the king alone decides whether to go to war. The elites and the king then simultaneously choose their contribution levels $T = t_k + t_e$.

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[2] An example of such war probabilities is $p(T, T_o) = 1/(a+0.5T_o-T)$; $q(T, T_o) = 1/(a+0.5T-T_o)$; where $a = \max(Y, Y_0)$. Battles become more decisive as the resource allocation increases by either party.

The King chooses α, the probability of going to war, and T_k to maximize his value of warfare:

$$V_k(\alpha, T_k) = (\alpha) Y_k + (1-\alpha)(Y_k - \tau(T_k) + pW_k + qL_k)$$

The elite chooses T_e to maximize the value of warfare for them:

$$V_e = Y_e - \tau(T_e) + pW_e + qL_e + (1-p-q)D_e.$$

Where $p = p(T, T_o)$ and $q = q(T, T_o)$.

We solve the contribution stage first: Differentiating V_k and V_e with respect to the king and the elite's contributions leads to the following first conditions:

$$V'_k(1, T_k) = -\tau' + p'(W_k) + q'(L_k)$$

$$V'_e(T_e) = -\tau' + p'(W_e - D_e) + q'(L_e - D_e).$$

Given our assumptions about the concavity of p and q, the first order conditions have well behaved solutions. Since each party's contribution to the war effort depends on a large number of parameters it is possible for the elite's tax rate to be either higher or lower than the king's. Given the resources available the crown then evaluates whether to go to war or not (chooses α) depending on the value of peace or war. If τ is sufficiently concave, both elites and crown always contribute to the war effort when a war occurs. Except for knife edged cases, a unique Nash equilibrium where both sides contribute positive amounts exists and it only involves pure strategies.

The Nash equilibrium defined above, however, is not necessarily subgame perfect because the elite may decide that the crown's war announcement is not credible. Credibility becomes an

issue when the crown would not go to war if the elite provided no resources $[Y_k > Y_k - \tau(T^*_k | T_e=0) + pW_k + qL_k]$. In that case if the crown could reverse its decision, the elite would contribute no resources to the war effort and the crown would then not go to war. If the crown can not reverse its decisions then the Nash equilibrium defined above is unique and subgame perfect. If, however, declarations of war are only announcement and thereby reversible, then not all positive contribution equilibria are subgame perfect.

The examination of the issue of credibility, requires us to define three curves that partition the reaction of different groups to war opportunities. Let $W_e(\beta, T^*_k)$ be the return to wining required for the elite to be indifferent between war and peace given that both parties contribute to the war effort and that the elite controls a fraction β, of the economy. It can be shown $W_e(\beta, T^*_k)$ is a decreasing function of β. Let $W_k(\beta, T^*_e)$ be the return to wining required for the king to be indifferent between war and peace given that both parties contribute to the war effort and that the elite controls a fraction β. It can be shown that $W_k(\beta, T^*_e)$ is a decreasing function of β. Finally let $W_k(\beta, 0)$ be the return to wining required for the king to be indifferent between war and peace given that he alone contributes to the war effort and that the elite controls a fraction β it can be shown that $W_k(\beta, 0)$ is an increasing function of β.

As displayed in Figure 1, $W_e(\beta, T^*_k)$, $W_k(\beta, T^*_e)$, and $W_k(\beta, 0)$ define four region in a space where the horizontal dimension is

β, the share of the economy controlled by the elite and the vertical dimension W, the value of wining. If W is large enough both the king and the elite want to fight the war and it will occur independent of credibility (region I). If W is small enough neither the elite nor the king want to fight the war and peace is uncontroversial (region II). Between these two ranges we find two regions, one, where although the elite dislikes war, the crown is credible to fight it on its own (region III). In this regions wars occur but they are not popular. The last region is one where the crown wants to fight only if the elite cooperate, but where is not credible to fight alone (region IV). It is this last region where positive contributions by both parties are not sub-game perfect. That region is the one where the elites have a significant control of the economy.[3]

This partitioning of the space leads to our definition of regimes. Let β_a be the value of β of such that the crown would not want to fight the least profitable war ($W=\underline{W}$) alone. Define β_p to be the value of β such that the crown would not want to fight the most profitable war ($W=\overline{W}$) alone. Clearly if β is zero the crown has full leeway in both war and finance, thus this value of β corresponds to autocracy. If $\beta \in [0, \beta_a]$ the crown is unconstrained in warfare because all its announcements are

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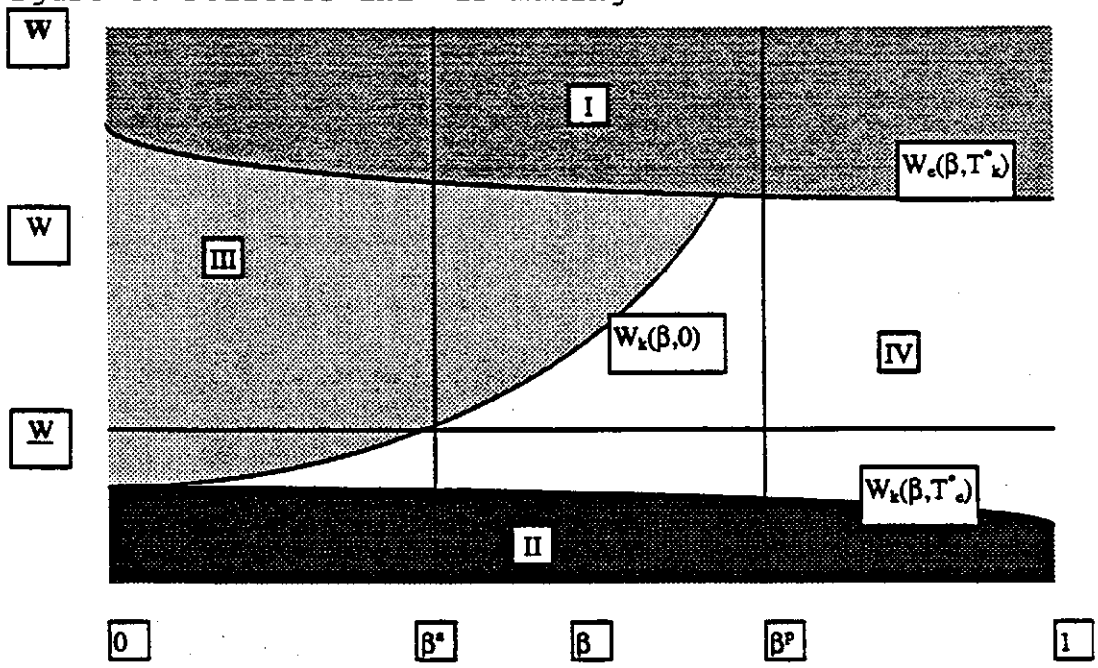
[3] Clearly for any regime where β is less than β_a or greater than β_p the ability to the elite to precommit to funding rules will be of little value.

credible but it is constrained financially, this corresponds to the case of absolutism. If $\beta \in [\beta_a, \beta_p]$ the crown is constrained in warfare because the elite will not agree to fight all the wars it wants to fight; we believe such arrangements are inherently unstable because neither crown nor elite are dominant.[4] Finally if $\beta > \beta_p$ then the elite's control of finance is sufficient to

Figure 1: Politics and war making



[4]one interpretation of the seventeenth-century crisis in France and England is that the technology of warfare changed sufficiently to drive β into that intermediate region. In France the crown successfully moved β below β_a while in England parliament moved β above β_p. The topics are further explored in Rosenthal (1995).

allow them to dictate foreign policy, this corresponds to the case of parliamentarism.[5]

The foregoing analysis has implication for both warfare and finance. First let us focus on the war bias. Autocrats and absolutist regimes will initiates wars more frequently than either divided regimes or parliamentary regimes. Second, let us focus on finance. While the model is too general to provide all the detail we might want we can derive six useful results from a comparative statics analysis.

1) If β is small enough the free rider problem binds on the elites: $(T_e < T_k)$.

2) The tax rate on the elite sector of the economy is bounded away from zero as β goes to zero but the tax rate on the royal sector of the economy goes to zero as β goes to one.

3) $T_e(\beta) > T_k(\beta - 0.5)$, $\forall \beta > 0.5$. The elites raise more resources when they control most of the economy than the crown raises when it controls an equivalent share.

4) $\partial T_e / \partial \beta > 0$, $\partial T_k / \partial \beta < 0$. As β increases elites increase their tax levels (and rates) while the crown decreases its levels and rates.

5) $T_e(1) > T_k(0)$. An autocracy fights wars less intensely than a pure parliamentary regime.

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[5] Unlike Olson (1993) and Barzel (1990) we thus define political regimes endogenously rather than exogenously.

6) $\partial T_e(0.5)/\partial\beta > -\partial T_k(0.5)/\partial\beta$. At $\beta=0.5$, the rate of increase of elite taxation is higher than the fall of royal taxation as β increases, in other words for all values of β above one-half aggregate war effort is increasing.

Given these results it is easy to show that the free rider problem leads aggregate taxation to be U shaped over the range of β as illustrated in Figure 2. If we assume that regimes are evenly distributed absolutist regimes will be less well funded than parliamentary ones. Further in absolutist regimes, one party will tax more than the other. Thus the analysis verifies the discussion in the text.

In the analysis that precedes whenever the elite's fear of draws, overcomes the free rider problem the elite may tax more than the crown. This will occur over a broad range of β. This relationship can be reversed easily. If we assume, for instance, that there are many elite segments and one large royal segment then the free rider problem intensifies greatly and the fear of draws will be insufficient to overcome it. In those cases the elite will tax less than the crown.[6] Thus commitment on the part

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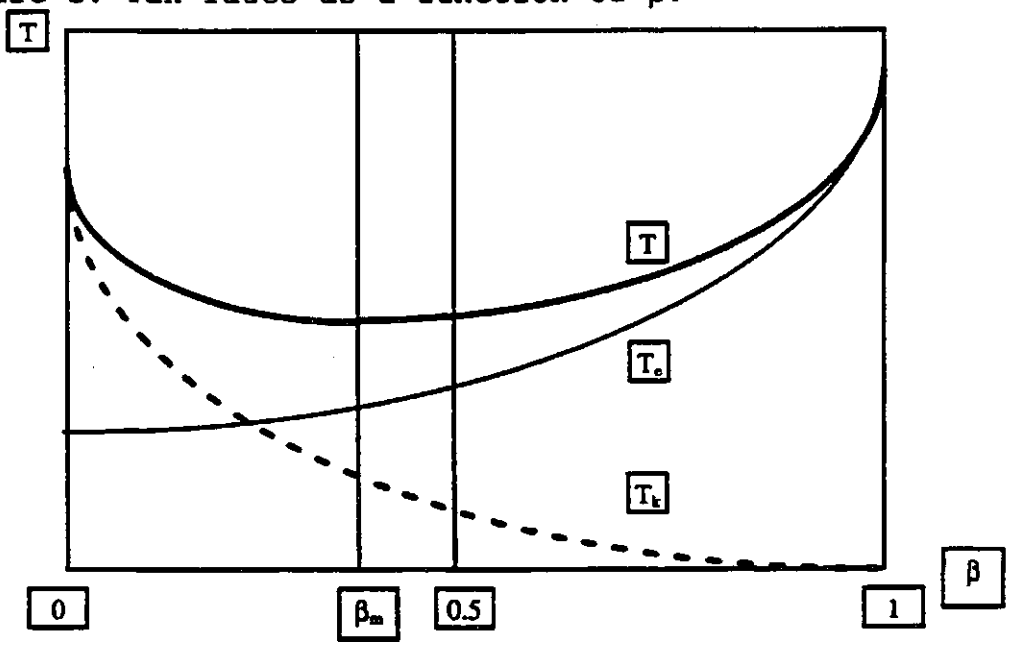
[6] This specification raises the problem of specifying a movement toward parliamentarism if the transfer of control from crown to elite is evenly divided (decentralization) among elite groups then a pure elite regime might tax less than an autocrat. If the transfer is made to a single elite group--more consistent with a process of increase parliamentary power) then a pure elite regime would still

of the elite is not necessary to insure that the crown's rate is larger than that set by the elite.

Figure 2: Tax rates as a function of β.



Finally we can relate the public finance analysis with the regime analysis. Recall that β_a was defined as the smallest share of the economy controlled by the elite such that the crown is unwilling to fight a war $\underline{W}$ by itself. Now define β_m to be the segmentation of the economy such that war effort is minimized in the aggregate. Two cases arise. First, if $\beta_m < \beta_a$ and β is close to β_a, then the crown could surrender control of the economy

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tax the most as long as other elite groups control small parts of the economy.

(increase β) to receive more resources and thereby increase win probabilities, but that would require a willingness to trade off choices of wars for a greater probability of winning those wars it fights. The crown in this case would not find it in its interest to reappropriate a small part of the economy (lower β marginally) because while that would reduce the credibility problem it would lead to even fewer wars being won. Conversely, if $\beta_m > \beta_a$ then the crown has an unambiguous motivation to reduce β and no desire to negotiate with the elites.