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THE UNEASY CASE FOR THE FLAT TAX

F.H. Buckley & E.B. Rasmusen

ABSTRACT

Social contract theories assume that because personal security and private property are at risk in a state of nature, subjects will agree to grant Leviathan a monopoly of violence. But what is to prevent Leviathan from turning on his subjects once they have lain down their arms? The social contract leaves subjects worse off unless Leviathan can fetter himself, as constitutional democracies seek to do. Self-binding fetters are hard to find, though We suggest that schemes of progressive taxation, in which marginal tax rates increase with taxable income, may be useful incentives to realign Leviathan's incentives with those of his subjects. Income taxes give Leviathan an equity claim in his state's economy, and progressive taxes give him a greater residual interest in upside payoffs. Leviathan will then demand higher side payments from interest groups before imposing value-destroying regulations.

Buckley: George Mason University School of Law, 3401 North Fairfax Drive, Arlington VA 22201, (703) 993-8028, FAX (703) 993-8088. Email: fbuckley@osf1.gmu.edu.

Rasmusen: Indiana University, Kelley School of Business, Dept. of Business Economics and Public Policy, BU 456, 1109 E 10th Street, Bloomington, Indiana, 47405-1701, (812) 855-9219, FAX (812) 855-3354. Email: Erasmuse@Indiana.edu, Erasmusen@Yahoo.com (for attachments), Erasmuse@Juno.com. Web: Php.indiana.edu/~erasmuse.

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THE UNEASY CASE FOR THE FLAT TAX

"Praesidibus onerandas tributo provincias suadentibus rescripsit boni pastores esse tondere pecus, non deglubere."1

There is a secret paradox at the heart of social contract theories. Such theories assume that, because personal security and private property are at risk in a state of nature, subjects will agree to grant Leviathan a monopoly of violence. Thereafter they need not fear the depredations of fellow subjects. But what is to prevent Leviathan from turning on his subjects once they have lain down their arms? In the state of nature they had a chance to defend themselves, but now they are powerless.

Armed with irresistible powers, a patriarchal Leviathan might forebear from looting his subjects because he sympathizes with them. But patriarchal theories are scorned by social contract theorists, who assume that Leviathan is every bit as selfish as individuals are in a state of nature. Indeed, under social contract theories, Leviathan remains in a state of nature, and only the subjects leave it. A Hobbesian Leviathan will plunder his subjects to the hilt. Moreover, he will do so far more thoroughly than other men did in the state of nature, for there is nothing to stop him when other men are defenseless.

If Leviathan cannot fetter himself against excessive plundering, no one would enter into the social contract, and the contractarian project would entirely fail. Where social contract theories cannot be operationalized, they reduce to a philosophical anarchism in which there is no abstract duty to support a state or obey the law. But how is Leviathan to fetter himself against plunder, if he can always impose confiscatory taxes or choke off trade through inefficient regulation? What constitution, anywhere in the world, prevents this result?

We suggest an answer to this puzzle. Because Leviathan can tax, he can share in the fortunes of his subjects, and in this way his interests are aligned with theirs. Should he seek to expropriate all their wealth, through takings, regulation, or taxes, he will reduce his wealth as well. Since their payoffs in civil society will exceed those in a state of nature, the subjects will then be willing to enter into a social contract.

This is an extension of the famous Laffer curve, which noted that tax revenues increase when marginal tax rates are reduced from extremely high levels.[2] As supply-siders have noted,

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1 Suetonius, *Tiberius*, 32:2. To provincial governors who wanted to raise taxes, Tiberius wrote that a good shepherd would shear his sheep, not skin them.

2 The original proponent of this aspect of the supply-side theory was Arthur B.

marginal rates that extract all profits eliminate private incentives to produce, and result in zero production and zero tax revenues. Leviathan has thus an incentive to reduce the marginal tax rate to less than 100 percent.

We extend this analysis, however, in ways that are inconsistent with the supply-side prescription of low marginal tax rates. For supply-side theorists, the only incentive costs that matter are those of the subjects, whose incentive to produce is sapped by high taxes. But there are also Leviathan's incentives to consider. A tax system solely concerned with promoting the incentives of subjects would impose the highest incentive costs of misbehavior by Leviathan. Since he would not have a stake in economic growth, Leviathan would enrich himself in other ways, such as takings and inefficient regulations. The incentive problem is two-sided. There is no tax system that entirely eliminates adverse incentive costs. The goal should instead be to set tax policies to balance the incentives of subject and sovereign misbehavior as best as can be done.

This need not imply a flat tax, with the same marginal rate for all taxable income. Instead, the tax rate might be progressive, with marginal rates that increase with income. Compared to flat taxes, progressive taxes strengthen the incentives of low-earners and weaken the incentives of high-earners to produce income. On the assumption that, on net, this reduces total income, progressive taxes have been faulted on efficiency grounds, while flat tax systems are conventionally attacked on equity grounds.[3] However, we suggest an efficiency justification for

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Laffer, a member of President Reagan's Economic Policy Advisory Board. See Victor A. Canto, Douglas H. Jones & Arthur B. Laffer, *Foundations of Supply-Side Economics* (New York: Academic, 1983); Victor A. Canto & Arthur B. Laffer, *Supply-Side Portfolio Strategies* (Westport, Conn.: Quorum, 1988). The insight that high taxes sap incentives is not new. The Chinese philosopher Han Fei, writing in the third century B.C., observed that:

> When the scholars of today discuss good government, many of them say, "Give land to the poor and destitute so that those who have no means of livelihood may be provided for." ... Now if the ruler levies money from the rich in order to give alms to the poor, he is robbing the diligent and frugal and indulging the lazy and extravagant. If he expects by such means to induce the people to work industriously and spend with caution, he will be disappointed.

Han Fei Tzu, *Basic Writings* 120 (trans. Burton Watson) (New York: Columbia University Press, 1964).

[3] An early proposal for progressive taxation may be found in Karl Marx & Friedrich Engels, *The Communist Manifesto* 94 (Washington Square, 1964). A more recent statement of the conventional wisdom on progressive taxation is Arthur Okun, *Equality and Efficiency: The Big Tradeoff* (Washington: Brookings Institute, 1975). For an argument that John Stuart Mil's call for "equality of sacrifice" implies progressive taxation, see H. Peyton Young, Progressive taxation and Equal Sacrifice, 80 *Am. Econ. Rev*. 253 (1990). See generally Walter J. Blum & Harry Kalven, Jr., The Uneasy Case for Progressive Taxation, 19 *U. Chi. L. Rev*. 417 (1952).

progressive taxation. Taxation should be seen as a profit sharing arrangement through which both subject and Leviathan participate in a state's wealth. Income taxes give Leviathan an equity claim in his state's economy, and progressive taxes give him a greater residual interest in upside payoffs. Leviathan will then demand a higher side payment from interest groups before imposing value-destroying regulations. Of course, progressive taxation imposes its own incentive costs, by reducing the subject's private gains. However, these costs must be balanced against the gains from correcting Leviathan's misincentives, and it may that such gains exceed progressive taxation's costs.[4]

Section I examines the social contract between subject and Leviathan. In the state of nature, subjects will be reluctant to exchange the probability of theft by a fellow subject for the certainty of confiscation by Leviathan, and will not enter into a social contract to create the state without some assurance of protection from it. Section II places this problem in the context of contractarian and positional theories of political obligation. As Section III notes, Leviathan will seek to bind himself not to expropriate all subject wealth. Unless he can do so, the contractarian explanation of political obligation will fail. In addition, full confiscation policies impose a heavy cost on Leviathan. Since his subjects would have no incentive to produce wealth, Leviathan will have nothing to tax. Thus, he will seek to maximize his wealth at the apex of the Laffer curve with a tax rate less than total confiscation. One way he can do this is in a reputation equilibrium, in which fear of losing future revenues prevents the sovereign from maximizing current revenue. We suggest that this is a good interpretation of a society's written or unwritten constitution: a set of expectations whose violation would lead to a return to the state of nature. Section IV offers several historical and legal parallels. Section V discusses an opposite point: that if Leviathan has insufficient means of enriching himself, then he may not provide sufficient public goods, or might provide social bads in the form of inefficient regulations. In Section V, we relax the assumption that tax transfers are the only means by which Leviathan enriches himself. If regulation is also an option, Leviathan might find it easier to raise money this way than through taxation. This is true even when Leviathan is not a Hobbesian despot but rather a modern state in which interest groups seek to enrich themselves through the power of the state.

Section VI makes the most novel point of this article: Leviathan's self-aggrandizement through regulation may be more costly than self-aggrandizement through taxation, and this has second-best implications for constitutional governance. Sovereign and subject alike would be best off if the sovereign could bind himself against inefficient regulatory takings. But as such fetters are exceedingly difficult to craft, progressive taxes might be superior to flat taxes, since they give Leviathan a leveraged equity stake in the income streams most threatened by inefficient regulations. Progressive tax rates can thus be defended as an efficient incentive strategy. We conclude with Section 7.

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4 Our explanation of progressive taxes recalls Mark Roe's account of how a populist electorate might be bribed to efficiency in one domain of the law by a sop of inefficient legislation in another domain. Mark J. Roe, Backlash, 98 *Colum. L. Rev*. 217 (1998).

1. Modeling the Emergence of the State

Traditional social contract theories asked what kind of state a person might consent to under conditions of unrestricted free choice.[5] Such theories did not purport to show how states in fact were formed. Rather, the social contract was a thought-experiment, meant to explain why we owe allegiance to a state (Hobbes and Locke), or how an existing state might fall short when compared to the ideal contractarian states of the philosopher's hypothetical bargain (Locke and Rousseau).[6] Scholars such as Filmer who criticized social contract theories as ahistorical and impossible to operationalize have therefore been thought to have missed the point.[7] But Filmer deserves better of us, for he identified a serious flaw in contractarian accounts of the state. If Filmer was right, and social contract theorists cannot provide an operational model of the origin of the state, the contractarian analysis of political obligation is not compelling. We would then have to choose between philosophical anarchism and the positional duties of loyalty that Filmer defended.

Filmer's objection may be understood by hypothesizing the negotiations between subjects and sovereign for the creation of a state in a model that we will use for the remainder of this paper. Such a model should center on the techniques that people choose for their productive activities and the sovereign's response in taxing or restricting their choices. Let us depart from the immediate issue to build the model.

1.A. A Model of Production and Taxation

In this Section, we model production as a choice of productive techniques along several dimensions: output, effort, taxability, external benefit, need for civil society, and the different techniques available to people of different talents. Output and effort are simple enough concepts; any technique of production has some direct benefit and cost to the producer. Taxability refers to the sovereign's ability to tax away the output from a technique. A well-known feature of highly taxed societies is a shift to more furtive and costly methods of production and distribution. External benefits are the positive spillovers that arise from certain techniques that, for example,

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[5] The most prominent English social contract theorists are Hobbes and Locke. Thomas Hobbes, *Leviathan* II.17 (C.B. MacPherson ed., Penguin, 1968) [1651]; John Locke, II *Two Treatises of Government* (Peter Laslett ed., 2d ed. 1967) [1690].

[6] Jean-Jacques Rousseau, *The Social Contract, in Discourse on Political Economy and The Social Contract* (trans.Christopher Betts, New York: Oxford U.P. 1994) [1762].

[7] "[W]as a general meeting of a whole kingdom ever known for the election of a prince?" Sir Robert Filmer, *Patriarcha* in Johann Somerville (ed.), *Patriarcha and Other Writings* 20 (Cambridge U.P., 1991) [1684]. See generally Gordon J. Schochet, *Patriarchalism and Political Thought* (Oxford U.P., 1975).

spread new ideas. Techniques' need for civil society differ; some can be used in the state of nature, while others require police protection. Alas for the taxpayer, we may expect taxability and the need for civil society to correlate positively, since production that benefits from a sovereign's protection from private theft will generally be vulnerable to public theft. Finally, talent matters, as well as effort, and some people will be able to produce the same output with less effort. This may be modeled as certain techniques with higher output or lower effort being unavailable to the less talented.

Let us denote the entire set of techniques as S. Subject i can choose a technique from subset S_i *(talent, civil society, regulation)* of S based on his talent level, whether he is living in civil society, and what techniques the sovereign's regulations permit him. He chooses the technique to maximize his expected utility, solving

$$\underset{s_i \in S_i}{\text{Maximize}}\ E(1- t_i)(s_i)\, Q(s_i) - e(s_i)$$

where t refers to the tax rate. The sovereign has two choices. First, he can restrict the subjects' choice of technique. Second, after they choose their techniques, he can tax their choices. He solves:

$$\underset{B,\, t_i(s_i)}{\text{Maximize}}\ E \sum (t_i(s_i)\, Q(s_i) + x_i) - C,$$

where B represents regulation, the set of allowed techniques; x_i represents the externality generated by subject i's choice, assumed here to benefit solely the sovereign; and C is the cost to the sovereign of monitoring civil society. If the sovereign decides not to enter upon civil society, he can guarantee himself a payoff of 0.

The order of play is as follows:

1. The sovereign agrees to set up civil society at cost C or not.
2. The sovereign sets regulations to ban techniques in set B.
3. The subjects choose techniques of production s_i.
4. The sovereign sets a tax schedule $t_i(s_i)$.

We can use this model with a small set S of techniques to illustrate a variety of points about the relationship between sovereign and subject. Let us assume that there are N subjects, divided into two types, N_t talented and N_u untalented, and that the set S is as depicted in Table 1.

TABLE 1: Techniques of Production
(Output + Externality – Effort)

	Taxable, no externality	*Taxable, high externality*	*Untaxable, no externality*
High talent	Farming (10-1) Business (100-2)	Teaching (60+25-2)	Plunder (5-1)
Low talent	Farming (10-1)	(no technique available)	Plunder (5-1)

Thus *Farming* offers private gains of 10 against private costs of 1, for net private gains of 9; while *Teaching* offers private gains of 60, external gains of 25 and private costs of 2.

The names of the techniques in Table 1 are not to be taken literally. Those readers who prefer elaborate notation may replace *Farming* with Σ_{11} and its payoff of (10-1) with a payoff of $(x_f^* - e_f^*)$, where $x_f^* > e_f^*$, if they wish. Our more everyday notation, however, will serve as a mnemonic for the features of different kinds of techniques. Table 1 indicates which talents are available to which types of subject, the other features of the techniques, and their output, the externality (if any), and the required effort level. Let us add two details not shown: (1) no technique but *Plunder* can be used in the state of nature, and (2) regulation cannot prohibit the use of *Plunder*.

In society, the payoffs from *Plunder* are unchanged, but new opportunities are also available. *Farming* produces 10 at a cost of 1 in effort, and is available to everyone, talented or untalented. The talented person has access to two further techniques: *Business*, which yields output of 100, and *Teaching*, which yields output of 60 to the producer and 25 in extra wealth to society at large. *Business* and *Teaching* cost 2 in effort; they are more productive, but more difficult than *Plunder* and *Farming*. The various techniques represent choices that people make in their careers and the way they operate their businesses. Often a person decides between maximizing his own income or doing something that helps other people too. Choices that help others might yield the greatest total benefit, but since the model will yield no insights if such a choice is available, we will restrict ourselves to a situation where efficiency and public goods conflict.

Farming represents the highest production level that untalented people can achieve, a level that the talented might also choose if they wish to avoid standing out. It also entails a lower cost in effort than *Business* or *Teaching*. In certain regimes, everyone wants to be a peasant: it is too dangerous to aspire to anything more lucrative. In some regimes, of course, even the proletarian is in danger. *Plunder* represents the base level of individual welfare below which the state cannot push the citizen. If the state imposes confiscatory taxes, the citizen can go underground and live a life of crime. We assume here that such a life yields income no higher than that of life under the state of nature, but all that matters is that its utility is much lower than that of ordinary life in civil society.

We will use this model in several parts of the paper. First, we will now return to the issue of the paradox Filmer attacked: If Leviathan is appointed in the contractarian state, what will keep him from devouring his subjects? Second, we will look at reputation as a solution the problem. Finally, we will look at the relation between taxation and regulation.

1B. Back to Controlling Leviathan

For our immediate discussion, the differences between talented and untalented people are unimportant; what matters is that in the state of nature only *Plunder* is available. *Farming, Business* and *Teaching* are all superior to it; even *Farming* has a net benefit of 10-1, compared with *Plunder*'s 5-1.[8]

Civil society does have its costs, however. The first cost is that police protection is not free. At a minimum, the sovereign must be promised taxes as great as *C*, or he will refuse to assume the responsibilities of police protection. This means that a typical person's utility in civil society will be not 10-1, but 10-1- *C/N*, compared to the 5-1 in the state of nature. If *C/N* is less than 5, civil society may be preferable; otherwise, it is not.

Even if the policing cost *C* is low, however, civil society might not be preferable because of its second cost: theft by the sovereign—"government failure," in economic terms. Civil society's advantage depends crucially on the condition that the sovereign suppress all theft, including his own. But this ignores Leviathan's incentives. There is no reason to suppose that, having being plucked for greatness by the social contract, Leviathan's preferences are any different from those of his subjects. If these are as self-regarding as Hobbes thought them to be, if the sovereign shares in the "general inclination of all mankind for perpetual and restless desire of Power after power, that ceaseth only in death,"[9] then why should we expect him to be a benign despot? We might instead expect that, having a monopoly of violence, the sovereign will confiscate the assets of his subjects, and far more thoroughly than thieves would do in a state of nature. At least self-defense was permitted there; but after laying down their arms to Leviathan, his subjects are powerless against him.[10] They will be worse off after they enter the social contract.

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8 Civil society has the additional advantage that it is less risky. Even if self-protection were not possible and *Plunder* were costless, so that theft consisted of pure transfers, unless each person always stole exactly as much as was stolen from him, nobody would be able to predict their net wealth. One year he would end up a gainer from theft, the next year, a loser. This risk is an additional disadvantage of the state of nature, both because of its direct disutility and because it makes planning difficult.

9 Hobbes, *supra* note 5, at 161.

10 This problem is noted in Jody S. Kraus, *The Limits of Hobbesian Contractarianism* 179-81 (Cambridge, 1993).

This is simply illustrated by the subgame perfect equilibrium of our model. As his last move, the sovereign will choose tax rates on taxable income to equal the entire output of each subject. The subjects, anticipating this, will all choose *Plunder*, the nontaxable technique, because any other technique will yield not just a zero, but a negative payoff, since the sovereign's confiscatory tax will ignore the effort the subject put into his production. The sovereign, in turn, foreseeing the subjects' choice and the absence of taxable income, will choose not to enter civil society and incur the useless policing cost *C*. Thus the social contract will never be executed.

2. *Contractarian and Positional Theories of Political Obligation*

This result of no social contract is the same as the standard problem of ordinary commercial contracting. There, the problem is solved by the courts of civil society, which sanction a party who does not keep his side of the bargain. A would-be Leviathan might pledge that he will refrain from confiscation, to persuade others to accept his sovereignty, and if enforceable such pledges would permit all parties to share in the bargaining surplus of civil society. Since contractual enforcement is left in Leviathan's hands, however, such promises are not time-consistent; Leviathan will make the promise, to persuade the subjects to enter into the contract, but has no incentive to carry it out after his appointment as sovereign. In equilibrium, the resulting state must be a pure kleptocracy. The probability of theft will be 100%, and every subject will be no better off than he was in the Hobbesian state of nature. Without a meta-sovereign to police Leviathan's contract with his subjects, the contract cannot be enforced.

First Samuel 8: 4-5, 10-20 is apt. It describes the request of the Israelites for a king to defend them against the raids of the Philistines and to judge their disputes.

> Then all the elders of Israel gathered themselves together, and came to Samuel unto Ramah, And said unto him, Behold, thou art old, and thy sons walk not in thy ways: now make us a king to judge us like all the nations.... And Samuel told all the words of the LORD unto the people that asked of him a king. And he said, This will be the manner of the king that shall reign over you: He will take your sons, and appoint them for himself, for his chariots, and to be his horsemen; and some shall run before his chariots. And he will appoint him captains over thousands, and captains over fifties; and will set them to ear his ground, and to reap his harvest, and to make his instruments of war, and instruments of his chariots. And he will take your daughters to be confectionaries, and to be cooks, and to be bakers. And he will take your fields, and your vineyards, and your oliveyards, even the best of them, and give them to his servants. And he will take the tenth of your seed, and of your vineyards, and give to his officers, and to his servants. And he will take your menservants, and your maidservants, and your goodliest young men, and your asses, and put them to his work. He will take the tenth of your sheep: and ye shall be his servants. And ye shall cry out in that day because of your king which ye shall have chosen you; and the LORD will not hear you in that day. Nevertheless the people refused to

> obey the voice of Samuel; and they said, Nay; but we will have a king over us; That we also may be like all the nations; and that our king may judge us, and go out before us, and fight our battles.

Hobbes recognized the problem of unenforceability. "The opinion that any Monarch receiveth his Power by Covenant ... proceedeth from want of understanding of this easie truth: that Covenants being but words, and breath, have no force to oblige, contain, constrain, or protect any man, but what it has from the publique Sword."[11] Since only Leviathan wields the public sword, he cannot be caught by a contract any more than by a hook. The only possible contract is the one that gives the sovereign full discretion to do what he wills -- and this is a donation rather than a contract.[12]

Hobbes' own response to this problem would be that our model has it wrong, and the payoff from *Plunder* is actually negative, not the 5-1 we have assumed. We have not bothered to explain how property exists when the only occupation is *Plunder*, nor have we considered how "nasty, poor, brutish and short" life might be in a state of nature. This might explain why the Israelites, under pressure from the Philistines in a genocidal era, were happy to ignore Samuel's warning. However, a life of slavery under a Hobbesian Leviathan might not be superior to life in a Hobbesian state of nature, when one takes account of Leviathan's ability to oppress his subjects. The problem of operationalizing the social contract remains.

The problem is not solved if the citizens are able, in the state of nature, to bargain with several possible sovereigns.[13] Before his appointment, each sovereign will promise to extract no more than C/N per subject for his provision of police services. After his appointment, however, he will always renege on his promise. A different result might obtain if the subjects could emigrate

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[11] Id. at 231.

[12] The Hobbesian bargain may nonetheless be worthwhile for the subject. We have ignored the value of life in our model. Thus a contract of slavery, made in exchange for quarter, binds the slave. Id. at 255-56. Similarly, the subject may accept Leviathan's authority in exchange for protection to life and limb. Sheep are fleeced, but are safe from wolves. It must be noted that this love of life must be very strong, however, since not only assets but honor, freedom, religion, and other intangibles are also forfeit to the sovereign. Nonetheless, we plead guilty to Macaulay's criticism of Mill that "The first man with whom Mr. Mill may travel in a stage coach will tell him that government exists for the protection of the persons and property of men. But Mr. Mill seems to think that the preservation of property is the first and only object." Thomas Macaulay, Mill on Government, *Edinburgh Review* (March 1829), p. 892).

[13] Libertarian political theorists do face up to the problem of keeping Leviathan in line. See Chapter 29, on competing private police agencies, of David Friedman, *The Machinery of Freedom*, 2d ed. (LaSalle, Illinois: Open Court Publishing Company, 1989); and Robert Nozick, *Anarchy, State and Utopia* (NewYork: Basic Books, 1974).

back into a state of nature, or to another state. We assume, however, that the choice is irrevocable, since the sovereign is able to bar emigration after his appointment. "[T]hey that are subjects to a Monarch," noted Hobbes, "cannot without his leave cast off Monarchy and return to the confusion of a disunited Multitude; nor transfer their Person from him that beareth it, to another Man."[14]

One might have thought that Hobbesian duties of allegiance would terminate when the sovereign expropriates all of the assets of his subjects, "or the right men have by Nature to protect themselves, when none else can protect them, can by no Covenant be relinquished."[15] Hobbes, however, denies that subjects have the right to object to a kleptocrat. The doctrine that a subject could assert a right of private property against his sovereign was not merely erroneous, but was like an internal disease which might result in the dissolution of the commonwealth.[16] Even if a right of rebellion against a kleptocrat were conceded, rebellion would be futile against a sovereign clothed with the plenitude of police and military powers.

We also discount constitutional fetters against expropriation by Leviathan. In our simple model, subjects must choose between remaining in the state of nature and granting Leviathan full police powers. There is no way in which the parties might commit to a limited government, in which third parties are armed with the effective power to constrain Leviathan, with a web of further parties are empowered to police them. We have kept our model simple not because we think that monitoring strategies of this kind are wholly ineffective, but because we think it might be desirable to supplement them with the incentive strategies we propose. We note, however, that the effectiveness of monitoring strategies has often been doubted.[17]

Social contract theories reduce to anarchism if they cannot explain how people in a state of nature would agree to form a state. The social contract theorist posits that a person does not owe allegiance to a state unless he has consented to it. But if he would never give his consent, when free bargaining was possible, this amounts to a denial of all political obligation.[18] We would never exit the state of nature, and the social contract would be a non-starter.

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14 Hobbes, *supra* note 5, at 229.

15 Id. at 272.

16 Id. at 296-97.

17 "Here there exists no dynasty, no nobility, ... no bureaucracy with permanent posts.... And nevertheless we find here two great gangs of political speculators, who alternately take possession of state power and exploit it ...and the nation is powerless against these two great cartels of politicians, who are ostensibly its servants, but in reality dominate and plunder it." Karl Marx & Friedrich Engels, *Writings on the Paris Commune* 32 (1871) (commenting on what they saw as the corruption inherent in the American political system).

18 The denial that, in a *hypothetical* bargain, people would agree to form a state may

Filmer's theory of the origin of the state does not suffer from these difficulties. Filmer argued that the first states were families, and fathers the first sovereigns. Clans grew from these little states, and from clans principalities and finally kingdoms. As the state expanded, the familial tie was stretched, but never broke. In any kingdom, Filmer argued, the King was deemed to be able to trace his ancestry back to the first parent of a common ancestor, even unto Adam.

The doctrine of patriarchal authority is a fiction, of course, like the social contract. But unlike the social contract theorist, Filmer has an operational explanation for the birth of the state. As filial duties of respect and submission arise naturally, there is no need for the child's consent to be governed. Similarly, the subject's duty of allegiance to his sovereign is positional and not consensual. He owes it because of his birth into the sovereign's realm, whether he consents or not.[19] In place of vexed theories of consent, positional theories substitute the commonsensical rules of jurisdiction in private international law.

Filmer's patriarchal sovereign differs from Hobbes' Leviathan in another respect. As the pater patriae, Filmer's sovereign does not desire to expropriate all of the wealth of his subjects, any more than a father would seek all of the wealth of his children. Because of this, the subjects would elect to create a patriarchal kingdom, if given the choice. *First Kings* 1: 39-40 (Handel‘s Coronation Anthem) must be considered a response to the republican sentiments of *First Samuel*. If subjects must fear the sovereign‘s unfettered power, then let the sovereign himself be restrained by his duties to a higher power.

> Zadok the priest took the horn of oil out of the Tent, and annointed Solomon. And they blew the ram‘s horn; and all the people said "Long live king Solomon"...and all the people piped with pipes, and rejoiced with great joy.

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be called philosophical anarchism. This may be distinguished from the jurisdictional anarchism of A.J. Simmons, who argues that people never give their *real* consent to be governed by any particular state. A.J. Simmons, *On the Edge of Anarchy: Locke, Consent, and the Limits of Society* (Princeton, 1993). Both forms of anarchism assume that only consent binds the individual, and assert either that such consent would never be given (philosophical anarchism), or that it is never in fact given to a particular state (jurisdictional anarchism).

[19] Positional theories themselves stand in need of justification, since the subject might otherwise legitimately deny the positional tie to the sovereign. And between subject and sovereign there is no natural tie, as there is between child and parent. Nevertheless, positional explanations of political allegiance may yet suffice, provided that (1) it is desirable that subjects should be bound to support a state, in order to solve free rider problems, and (2) the positional ties provided by a state's jurisdictional rules are not unjust. Thus the problem of political obligation, which has vexed the ablest political philosophers, is solved by lawyers through the law of jurisdiction.

If the sovereign fears the wrath of a just God, then we do have a trustworthy meta-sovereign to enforce the contract. It is no accident that kings are crowned in religious ceremonies with solemn oaths to defend the realm and uphold its laws. The Coronation Oath was taken very seriously by Blackstone, who reproduced it loving detail.[20]

> *The archbishop or bishop shall say*, Will you solemnly promise and swear to govern the people of this kingdom of England, and the dominions thereto belonging, according to the statutes in parliament agreed on, and the laws and customs of the same?---*The king or queen shall say*, I solemnly promise so to do.
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> *Archbishop or bishop*. Will you to your power cause law and justice, in mercy, to be executed in all your judgments?---*King or queen*. I will.
>
> *Archbishop or bishop*. Will you to the utmost of your power maintain the laws of God, the true profession of the gospel, and the protestant reformed religion established by the law? And will you preserve unto the bishops and clergy of this realm, and to the churches committed to their charge, all such rights and privileges as by law do or shall appertain unto them, or any of them.---*King or queen*. All this I promise to do.
>
> *After this the king or queen, laying his or her hand upon the holy gospels, shall say*, The things which I have here before promised I will perform and keep: so help me God. *And then shall kiss the book.*

The oath was also taken seriously by the kings. For example, George III resisted Catholic emancipation because he thought that his assent would violate his oath. The sacramental quality of the coronation was also more generally accepted in the recent past than we might realize. For example, Charles X of France touched for the King's Evil at his coronation in 1824.[21] The special duties and oaths have traditionally been thought to explain the difference between European monarchies (or the Jewish monarchy of the Bible, with prophets in place of Church) and Eastern despotism.

Thus we have two explanations for why the Sovereign might be trusted. Let us put them in terms of our model. First, it might be that we have misspecified the utility function of the

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20 William Blackstone, I *Commentaries on the Laws of England* 228 (Buffalo: Hein, 1st ed. Reprint, 1992) [1765].

21 J.C.D. Clark, *English Society 1688-1832: Ideology, Social Structure and Political Practice during the Ancien Regime* 167 (Cambridge, 1985). As a child, Dr Johnson was brought to London to be touched by Queen Anne for scrofula. See James Boswell, *The Life of Samuel Johnson* 20 (Everyman, 1992).

sovereign. If the subjects choose a sovereign who considers himself the father of his people, he will care about their welfare, and his payoff function will decline in his tax revenue, not increase in it. The patriarchal monarch is, oddly enough, the economist's social planner. Second, if the subjects choose a God-fearing man as sovereign, and require him to swear a coronation oath or otherwise subscribe to the rule of law, he will have committed to a tax and regulatory police in advance of his subjects' choices. In our model's order of play, the sovereign would choose his tax policies before the subject's choice of technique. This is to move the commercial contracting solution up a level, with God's judgement replacing the King's court, but with the additional advantage that a benevolent and just God needs no still-higher court. A third double-barreled, patriarchal explanation is provided by Thomas Macaulay. Macaulay criticizes James Mill for ignoring the desire of a husband for his wife's regard, which could outweigh his legal right to deny her all but the barest means of subsistence. Macaulay also notes that a class of people that cares more for honor and the regard of others than for wealth—e.g., the British aristocracy of 1829— will make more trustworthy rulers than those for whom wealth is the primary concern.[22]

In practice, however, the grant of authority to the Lord's Annointed falls short as a solution for the prosaic reason that it is not easy to find truly patriarchal, God-fearing, or honorable candidates for sovereign.[23] On the other hand, Patriarchal theories do offer accounts of the sovereign's political obligation, not just of the subject's, and to that extent are more sophisticated than traditional social contract explanations of the state. We will see next how this gap in social contract theory might be filled.

3. Machiavelli and the Principal-Agent Problem

Could a Hobbesian sovereign credibly promise to govern as a Patriarchal monarch, we might have a contractarian explanation for the birth of the state. As the sovereign would not seek to expropriate their wealth, the subjects would agree to accept his authority and to leave the state of nature. But how could the sovereign's promise be believed, when he is not constrained by patriarchal sentiments of sympathy and affection?

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22 Macaulay, Mill on Government, *supra* note 12.

23 For an early expression of scepticism, see Han Fei Tzu, *Basic Writings, supra* note 2, at 101-03:

> Now the Confucians and Mo-ists all praise the ancient kings for their universal love of the world, saying that they looked after the people as parents look after a beloved child... Now if the ruler and subject must become like father and son before there can be order, we must suppose that there is no such thing as an unruly father or son... This is, in effect, to demand that the ruler rise to the level of Confucius, and that all the ordinary people of the time be like Confucius's disciples. Such a policy is bound to fail.

3A. The Sovereign's Optimal Commitment Policy

Few political philosophers have thought more closely about how abstract principles may be operationalized than Machiavelli. A principality may be created either by the nobles or by the people, he thought. The second kind of state, called a civil principality, is more stable, since there are fewer rivals for power. But a revolt is possible even in a civil principality. "[T]herefore, one who becomes a prince through the support of the people should keep them friendly to him, which should be easy for him because they ask of him only that they not be oppressed."[24] However, the prince cannot purchase the favor of the people by "liberality," or government spending, since this must be financed by taxes. "[T]will begin to make him hated by his subjects, and little esteemed by anyone as he becomes poor."[25] Liberality is a wasting asset, for the prince who is free with public moneys quickly runs out of them and loses the power to spend. Thus he "should esteem it little to incur a name for meanness, because this is one of those vices which enable him to rule."[26]

Machiavelli's advice to the prince suggests a way in which social contract explanations of the birth of the state may be operationalized. We again assume a Hobbesian sovereign, unencumbered by patriarchal sentiments towards his subjects. However, we now ask how the sovereign might bind himself against expropriation. The subject cares only about the amount of wealth he will retain after the depredations by thieves in a state of nature or by the sovereign in a kleptocracy. Let us imagine what would happen if the sovereign could persuade his subjects to join civil society by committing to a binding tax policy (a constitution of sorts). In our model, the sovereign proposes this policy to them as a take-it-or-leave-it offer, since we are interested not so much in the bargaining process and distribution as in how civil society can come about at all. We will also ignore regulation here, and assume that taxation is the sovereign's only means of enriching himself.

The sovereign will propose to take a fraction t of his subjects' wealth. If he chooses $t=1$, he expropriates all of his subjects' wealth, with the result that they receive nothing to compensate them for costs they incur in producing assets. All productive incentives are destroyed, and they will resort to the untaxable *Plunder*, which yields them a utility of 4 (which is 5-1), compared to utility of -1 from *Farming* (which is [1-t][10] -1).

A confiscatory tax burden will therefore reduce the sovereign's tax revenues to zero. The sovereign's tax revenues are also zero if $t= 0$, a similarly unsatisfactory result for the kleptocrat. His optimum is somewhere in between, the familiar insight of the Laffer curve.[27]

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[24] Niccolo Machiavelli, *The Prince* 40 (trans. Harvey C. Mansfield) (U. Chicago Press, 1985).

[25] Id. at 63.

[26] Id. at 64.

[27] *Supra* note 2.

We can calculate the tax rate that maximizes kleptocrat revenues. The kleptocrat must, at a minimum, make people indifferent between *Farming* and *Plunder*, which requires equating their utilities from those techniques, so:

Utility of *Plunder* = 5-1 = Utility of *Farming* = (1-t)10 -1,

which yields t^* =.5. Any tax rate less than or equal to this will allow civil society to exist and be profitable for the sovereign.

A talented citizen could choose *Business* instead of *Farming* or *Plunder*. For him, the maximum feasible tax is derived in a similar manner:

Utility of *Plunder* = 5-1 = Utility of *Business* = (1-t)100 -2,

which yields t^* = .94. If the sovereign could tell who is talented and who is untalented, he could decree a tax rate of 50 percent for the untalented and 94 percent for the talented without destroying society's wealth.

Things are more interesting if the sovereign cannot tell who is talented, a more realistic scenario. If being talented raises one's tax rate by 44 percent, a good deal of that talent will go into pretending to be untalented. Nobody will choose *Business*, because that is a dead giveaway that one is talented. Parents will train their children from earliest childhood to appear untalented.

Foreseeing this, the sovereign will adopt a uniform tax rate. Whether that tax rate is 50 percent or 94 percent depends on the proportion the talented to the untalented. The lower tax rate is preferred if:

(Revenue from low rate) = (.50) (10) ($N_u + N_t$)> (Revenue from high rate) = (.94) (100) (N_t),

which means that the low rate is preferred if 5 N_u > 89 N_t, that is, if N_u > (89/5) N_t. The exact numbers do not matter, of course. The point is that if there are sufficiently many talented people, or if their extra productivity is great enough, the sovereign will allow the untalented to become an untaxed lumpenproletariat in order to raise taxes to extract the surplus of the talented. Otherwise, the sovereign will keep taxes low enough that the untalented will stay productive, grudgingly allowing the talented to keep a surplus from their talent.

Thus, if the sovereign can commit to a particular tax rate, he will do so, in order to keep his subjects productive. He will tax away all of their surplus if he can, but he will not confiscate their entire earnings, because they need incentives to exert productive effort. For their part, the subjects will know Leviathan's incentive structure, and will recognize that life for them will be better off in civil society than in the state of nature. They will therefore be willing to enter into the social contract. In this way, the problem of operationalizing the social contract may be solved through incentive strategies.

3B. Using Reputation to Make Commitments

The problem remains of making the commitment credible. If Leviathan's promise to refrain from confiscatory taxation is not believed, his subjects will not produce assets. One solution is reputation. If the sovereign ever confiscates entirely in any one year, his subjects might expect him to confiscate in every succeeding year, and so not produce in the future. This threat could keep the sovereign moderate in his demands. If the sovereign ever stops caring about the future, however, whether because of impatience or impending internal or external overthrow, the equilibrium breaks down. He will confiscate, and the subjects will stop producing.[28]

Thus, if a belief can be established that the sovereign will be moderate, such a belief can be self-fulfilling. How such a belief can be established in the first instance is a difficult problem, and an important one.[29] When the social contract is negotiated, Leviathan does not have a track record, and cannot fall back on his reputation. The subjects might therefore expect Leviathan to impose confiscatory taxes. Given the twentieth century's experience with newly created despotisms, this equilibrium is not uncommon. The social contract would then misfire, since people would refuse to leave the state of nature.

We can put our model into what has become the standard economic model of reputation to show how this works. Let us assume that there are sufficiently few talented subjects that we need only consider the tax rate of 50 percent, that the situation is repeated an infinite number of times, and that the sovereign has a discount rate of R.[30] Each year, sovereign and subject simultaneously choose a tax rate and a production technique. The utility of a payment of W next

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[28] Such revolutions in behavior are common in history, and are the subject of Timur Kuran's *Private Truths, Public Lies: The Social Consequences of Preference Falsification* (Harvard U.P., 1995).

[29] One possibility would be to back-end-load Leviathan's compensation. For example, taxes might be levied at the end of each decade, after subjects have made their capital investments and derived their profits. This would resemble the long term incentive plans used to address problems of managerial myopia in the corporate world, where incentives to ignore long term profitability are realigned through such devices as pension plans whose payoffs are a function of the firm's future earnings. See James A. Brickley, Sanjai Bhagat & Ronald C. Lease, The Impact of Long-Range Managerial Compensation Plans on Shareholder Wealth, 7 *J. Acc. & Econ*. 115 (1985).

[30] The subject's discount rate does not matter to the equilibrium, and could take any value from zero to infinity.

year would then be W/(1+R) and the utility of an infinite stream of payments of *W* each year would be *W/R*.

This game has many equilibria, each with its own set of expectations. One of them is very simple: the subject always *Plunders,* and the sovereign always adopts a tax rate of $t=1$. Neither has any incentive to deviate in any year of the game, given that both expect the equilibrium to be played out.

The other equilibrium of interest is as follows. The sovereign chooses a tax rate of $t=50$ percent unless he has chosen a higher tax rate at least once before, in which case he always chooses $t=1$. The subject chooses *Farming* unless the sovereign has chosen a tax rate higher than 50 percent at least once before, in which case he switches to *Plunder* in all future years.

This, too, can be an equilibrium. If expectations are that it will be played out, neither player has an incentive to deviate. In equilibrium, the sovereign will always choose a tax rate of 50 percent and the subject will always choose *Farming*, maintaining these behaviors by their knowledge of what would happen if the sovereign ever tried choosing a higher tax rate. It can be an equilibrium, however, only for certain values of the sovereign's discount rate, *R*. His payoff in the hypothesized equilibrium is:

$$\sum_{j=1}^{\infty} \frac{(.5)\,10}{(1+r)^j} = \frac{(.5)\,10}{R},$$

where the equality is true because of the perpetuity formula. This compares with a deviation payoff of:

$$(1)*(10) + \left(\frac{1}{1+R}\right)*(0/R)$$

.

so he will keep to the equilibrium only if $5/R$ is at least 10, i.e., if $R < .5$.

We leave open how expectations arise, but note that if they were pessimistic, people would never give up the state of nature for civil society. Moreover, if, in the state of nature, several candidates for sovereign appeared, some with good reputations and some with bad (for whatever, unmodelled, reasons), one of those with a good reputation would be chosen as sovereign. However, we do need an infinite number of periods for this game to be valid, so as to ensure that the sovereign prefers maintaining his future stream of taxes to a one-time confiscation of subject wealth. Thus we assume a sovereign who does not die or who has a bequest motive.[31]

[31] The reason an infinite horizon is needed is the well-known Chainstore Paradox. If the number of repetitions is finite, then there is a last repetition. In that last repetition, the

4. *Historical and Legal Applications*

We would expect subjects to prefer the civil state to the state of nature if the transactions costs of self-help and thievery are high. This implicates a Hobbesian state of nature, where no one can protect his own property well, and few goods are produced as a result. By contrast, a Lockean state of nature is one in which self-help works relatively well, and a rough order emerges in which each person is left in possession of most of the goods he has produced and can defend them with his own hands.

These models help to explain the emergence of states in prehistory.[32] The extent to which the social contract is attractive depends on asset production technology. Where valuable assets may be privately produced and stored, the need for police protection and Leviathan increases. Similarly, the need for state power increases where valuable assets may be created through long-term investments in physical capital. Where little asset production will take place in any event, there is little need for police powers or states. This was Gibbon's explanation for the condition of savage liberty that obtained amongst the German tribes. In the spirit of his time, Gibbon reported that "civil governments, in their first institution, are voluntary associations for mutual defense."[33] But mutual defense is little needed for a people like the primitive Germans, "without either cities,

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sovereign will set t=1, so subjects will resort to *Plunder*. But then in the next-to-last period, the sovereign might as well set t=1, since doing so has no effect on subject choice in the last period. The subjects, realizing this, will also choose *Plunder* in the next-to-last period. Induction takes this back to the very first period. See Reinhard Selten, The Chain-Store Paradox, 9 *Theory & Decision* 127-59 (1978); or Eric Rasmusen, *Games and Information; An Introduction to Game Theory* ch. 5 (Blackwell, 1994) for elaboration. The sovereign need not be literally immortal to care about the infinite future, though. Robert Barro has shown that a chain of decisionmakers who each intend to leave wealth to his offspring will behave equivalently to an immortal decisionmaker. See Robert Barro, Are Government Bonds Net Wealth?, 82 *J. Pol. Econ.* 1095-1117 (1974) (note the implications for the advantage of a hereditary over a non-hereditary sovereign). Also, uncertainty over whether the sovereign is patriarchal can eliminate the distinction between an infinite and a large finite number of periods, as shown in the "Gang of Four" model; see David Kreps, Paul Milgrom, John Roberts & Robert Wilson, Rational Cooperation in the Finitely Repeated Prisoners' Dilemma, 27 *J. Econ. Theory* 245-52 (1982); or Rasmusen, *supra*, ch. 6 (1994).

32 This explanation of the growth of the state resembles Demsetz's well-known account of the rise of property rights. Harold Demsetz, Toward a Theory of Property Rights, 57 *Am. Econ. Rev. Papers & Proceedings* 347 (1967).

33 Edward Gibbon, *The Decline and Fall of the Roman Empire* 91 (U. of Chicago, 1952).

letters, arts, or money."[34] "Their poverty secured their freedom, since our desires and our possessions are the strongest fetters of despotism."[35]

Gibbon also noted how compensation schemes might serve to align a sovereign's incentives with those of his subjects. The personal qualities of Septimus Severus left much to be desired, when compared to those of the Antonines. "Where shall we find, in the character of Severus, the commanding superiority of soul, the generous clemency, and the various genius, which could reconcile and unite the love of pleasure, the thirst of knowledge, and the fire of ambition?"[36] And yet, in his way, Severus was a successful emperor, for he had the intelligence to see that "[t]he true interest of an absolute monarch generally coincides with that of his people."[37] Thus he "considered the Roman empire as his property, and had no sooner secured the possession, than he bestowed his care on the cultivation and improvement of so valuable an acquisition."[38] From which Gibbon drew the lesson that, were an emperor "totally devoid of virtue, prudence might supply its place, and would dictate the same rules of conduct."[39]

Perhaps the best example of how a non-Patriarchal sovereign might credibly commit not to expropriate his subjects' wealth through incentive strategies may be found in Venice's treatment of its Jewish subjects. The doges and governing councils of the Most Serene Republic cannot have felt great sympathy for the Jews, but found it useful to offer them a limited toleration. After the War of the League of Cambrai in 1509, they were permitted to live in the island city. The war had given rise to a need for the taxes that could be extracted from them, and for the financial services that only Jewish bankers could provide. Every ten years their leases were renewed at above-market rates, the difference representing a tax the *Serenissima* levied on them.[40] And every night they were shut up in their Ghetto, the first in Europe. But still the Jewish community prospered, and in the Republic's final days, when it was threatened by a French revolutionary army

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[34] Id. at 90-91.

[35] Id. at 91.

[36] Id. at 47.

[37] Id. at 50.

[38] Id.

[39] Id.

[40] This is an example of an "efficiency wage" or "reputation." See Klein and Leffler (1982); Eric Rasmusen, An Income-Satiation Model of Efficiency Wages, 10 *Economic Inquiry* 467 (1992).

that promised to tear down the Ghetto walls, the Jews of Venice contributed generously to the Republic's defense.[41]

The sovereign's bargaining problem resembles that of the slaveowner, who has Leviathan's power over his slaves. Suppose that contracts of slavery (and manumission) were enforced, but that slaves were entitled to the same criminal law protections as non-slaves. Would slavery persist? Likely not, on this analysis, since the slave's incentives to work would be sapped if all his earnings went to his master. Both parties would be better off if the slave were freed, with his subsequent earnings shared between master and servant. A similar result would obtain if debtors could waive their right to file a bankruptcy petititon. The "debt slave" whose entire future earnings are pledged to his creditors would be expected to craft a Coasian fresh start through a private workout.[42]

The strategy of solving the bargaining problem by incentivising Leviathan has other parallels in private law, where adverse incentive costs may be reduced by altering payoffs. In corporate law, entrenched managers might, like Leviathan, loot their bailiwicks, and scholars have worried about how to police management overcompensation. In particular, compensation strategies that tie management earnings to firm profits have been thought to amount to waste. For example, in *Rogers v. Hill*,[43] top executives of American Tobacco made millions through a bonus plan that gave them a share of firm profits. However, event studies of how markets react to announcements of such plans report that they are greet with abnormal stock price increases.[44] This is inconsistent with shareholder expropriation theories. The increase might be explained on signaling theories, with the announcement taken as a sign of undisclosed good news. Alternatively, the stock price increase might reflect an expected reduction in management misbehavior because executive incentives have been more closely aligned to those of the firm. We propose a similar strategy to address Leviathan's agency cost problem.

Bankruptcy reorganization law affords a second example of how misincentives might be reduced through a change in payoff structures. Under Chapter 11, a class of dissenting senior claimholders cannot be forced to accept a plan of reorganization that violates absolute priority norms. Under absolute priority, each class is to receive a payoff worth the face amount of their

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41 Bernard Dov Cooperman, "The Creation of the Venetian Ghetto," in Roberta Curiel & Bernard Dov Cooperman, *The Venetian Ghetto* 7 (Rizzoli, 1990); Binjamin Ravid, *Economics and Toleration in Seventeenth Century Venice* (Jerusalem, 1978).

42 F.H. Buckley, The American Fresh Start, 4 *So. Cal. Interdisciplinary L.J.* 67 (1994).

43 289 U.S. 582 (1933).

44 Brickley, Bhagat & Lease, Impact, *supra* note 29; Tehranian & Waegelein, Market Reaction to Short-Term Executive Plan Adoption, 7 J. *Acc. & Econ*. 132 (1985).

claims (principal plus accrued interest), failing which nothing is be paid out to junior claimholders. Other countries do not require strict adherence to absolute priorities, and permit juniors to participate even though seniors have not been made whole. In this respect, Chapter 11's more exacting fairness standards might seem better to protect claimholders. However, absolute priority norms increase the agency costs of management misbehavior in bankruptcy. Because shareholders are more easily wiped out under absolute priority, firm managers (to whom they are presumed to be allied) will be more tempted to invest in low-mean, high-variance projects.[45] Thus all parties might be better off were absolute priority norms abandoned, with shareholders permitted to share in firm value on default.[46] Once again, the costs of management misbehavior would be addressed by altering payoff structures.

5. Lump Sum vs. Income Taxes

Leviathan's incentive problem resembles that of company managers. Where Leviathan's rewards are not tied to the economy, he has no incentive to promote its growth. He then may shirk and fail to produce public goods (such as efficient contract law rules); or he might produce public bads (such as inefficient regulations). Thus a lump sum or poll tax, which amounts to a manager's fixed salary or a debtholder's claim, will not align the incentives of Leviathan and his subjects.[47] What a lump sum tax will do, however, is provide the subjects with the strongest private incentives to produce, since they are permitted to retain all returns above the amount of the tax. By contrast, a flat income tax amounts to an intermediate risk-sharing solution, in which gains from the correction of Leviathan's misincentives must be balanced against the increased incentive costs born by the subjects. As the flat tax rate increases, Leviathan's incentives are strengthened, and those of the subjects weakened.

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[45] Because shareholders are indifferent to payoffs below the amount of senior claims, all projects which increase risk (in terms of a mean-preserving spread) effect a wealth transfer from debt to equity holders. See F.H. Buckley, The Termination Decision, 61 UMKC L. Rev. 243 (1992). Chapter 11's combination of absolute priority norms and management's exclusivity of control over the length of a reorganization is a particularly lethal combination. See Lawrence A. Weiss & Karen H. Wruck, Information Problems, Conflicts of Interest, and Asset Stripping: Chapter 11's Failure in the Case of Eastern Airlines, 48 *J. Fin. Econ*. 55 (1998).

[46] See Thomas H. Jackson & Robert E. Scott, On the Nature of Bankruptcy: An Essay on Bankruptcy Sharing and the Creditors' Bargain, 75 *Va. L. Rev*. 155 (1989).

[47] A manager with a fixed salary, or a bondholder with fixed interest payments, has claims whose values do not change when the total profits of the company change. In the same way, the revenues from a poll tax do not depend on the total income of the country. The contrast between open-ended but junior equity claims and limited but senior debt claims is the central idea in corporate finance. A seminal paper on the deep implications of the idea is Robert Townsend, Optimal Contracts with Costly State Verification, *Journal of Economic Theory*, 22:265-293 (1979).

The tax rate t^* that maximizes social wealth is the rate at which total adverse incentive costs are lowest. When the tax rate increases above t^*, the gains from correcting Leviathan's misincentives are exceeded by the costs of weakening subject incentives; when the tax rate falls below t^*, the gain in subject incentives is exceeded by costs which result from Leviathan's misincentives. We do not know, a priori, what rate of taxation will maximize subject wealth, but we suggest it is not zero. Where a public good confers a benefit, the sovereign will have inadequate incentives to produce the public good if he does not collect the entire benefit at the margin. It might thus be rational for subjects to agree to a positive tax rate in order to bribe Leviathan to efficiency.

This suggests that we should abandon the mirage of a non-distortionary tax. Until now, it has been suggested that the most efficient kind of taxation is one in which "the least responsive persons are taxed more heavily than those who are more responsive,"[48] as this least distorts taxpayer incentives. But any tax that is not completely confiscatory distorts Leviathan's incentives. Even a tax on land of the kind proposed by Henry George will affect land prices and development, because a tax that left the incentives of the subjects untouched would affect Leviathan's incentives, by weakening his stake in the economy. The goal, therefore, is not to eliminate the incentive costs born by subjects, but to minimize net incentive costs born by Leviathan and his subjects. The optimal tax system is likely to feature an income tax which offers Leviathan tax revenues in excess of his costs, to improve his incentives to provide public goods, and to reduce incentives to supply public bads in the form of inefficient regulations.

6. The Uneasy Case for the Flat Tax: Taxation vs. Regulation

Thus far, we have discussed the social contract to create civil society, and the optimum tax rate. We next consider what will happen when the sovereign wishes to extract wealth from subjects. If he is blocked from doing so in the most efficient way, he will extract wealth in an inefficient way. Our focus will be on taxation versus regulation.

A constitution may be seen as a focal point supporting expectations in a reputational equilibrium of a repeated game of the kind we discussed earlier. We show how, if the constitution permits progressive taxes but not regulation, subjects might continue to make normal life choices even if they are taxed at progressive rates. However, if they see the sovereign imposing unconstitutional regulations, they will expect this to lead to a general breakdown of the sovereign's restraint. The subjects will then return to *Plunder* and (if they are permitted) the state of nature.

If the constitution permits regulation, on the other hand, subjects might react tamely to it. They might expect to be oppressed through inefficient regulations, and one such regulation might

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48 Geoffrey Brennan & James M. Buchanan, *The Power to Tax: Analytical Foundations of a Fiscal Constitution* 35 (Cambridge U.P., 1980).

not lead them to expect worse oppression in the future. These expectations are more important than the precise words of the constitution, or whether it is written or unwritten. Whatever its form might be, the issue ultimately comes down to what happens if the Sovereign chooses to violate expectations.

Suppose that a constitution could prevent the sovereign from extracting wealth from his subjects. In Section 3, we showed that this could support an efficient outcome in which the sovereign was bound to extract only so much wealth as would induce his subjects to produce more wealth, maximizing the sovereign's payoff. In the absence of constitutional fetters, expectations could support an equilibrium in which the sovereign extracts only so much wealth as to finance the efficient level of public goods, but with a tax regime in which his share of output increases with social wealth, the theme of Sections 4 and 5.

Both of these are efficient outcomes, but a constitutional regime might also result in inefficient outcomes. We have already discussed one of these, in Section 2--the despotic constitution in which the sovereign is expected to use confiscatory taxes and the subjects divert their energies to inefficient techniques. In the present section, we will turn our attention to a different sort of inefficiency: the problem of a sovereign who is prevented by a constitution from using the most efficient method of extracting wealth, and is thus diverted towards inefficient methods.

To look at such diversion, let us compare a number of possible constitutions: despotism, in which the sovereign can do anything he pleases; two regimes in which he is allowed to use only flat taxes; and two regimes in which he is forbidden to use regulation, which here would take the form of a law preventing any subject from choosing *Business*, leading the talented to choose *Teaching* instead).[49]

To rule out uninteresting cases, let us make two assumptions about the parameter values. First, let $.5\ Q_u\ (N_t + N_u) > C$, so that the feasible tax revenue from *Farming* is enough to pay for the common defense and police services. Second, let $5\ Q_u\ (N_t + N_u) > 94\ Q_t\ N_t$, so that enough subjects are untalented that the sovereign will not write off their tax revenue in favor of taxing just the talented at higher rates. We can then compare social wealth under various regimes.

Constitution 1: Despotism, in which the sovereign is not restricted to any particular level of taxation.

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[49] This model could be easily modified to illustrate a similar point on the spending side: that if the sovereign is blocked from using cash payments to benefit his favored subjects, he will substitute to less efficient discriminatory spending. If a sovereign cannot put taxes in his Swiss bank account, for example, he will increase spending on presidential palaces instead. Or, in a democracy, if the poor cannot obtain direct monthly checks, they will push for inefficient housing subsidies.

Outcome: Inefficient Production.

Under the constitution that we described in Section 2, all subjects use *Plunder*, and all parties will return to a state of nature. If a subject used any other technique, he would find his entire income taxed away, and since his effort costs 1 or 2, his net payoff would be negative. Choosing *Plunder*, his payoff is 5-1 = 4, which is positive. The sovereign's payoff is –C. As this leaves him worse off than if he dissolved civil society, he will return his subjects to the state of nature by abandoning all his police duties.

This constitution reminds us that sovereign misincentives might work in two directions. Without any limits on his ability to expropriate, the sovereign might have an incentive to tax too much; and without adequate tax revenues, the sovereign has too little incentive to provide public goods.

Constitution 2: A flat tax rate of t is allowed; regulation and progressive taxation are banned.

Outcome: Efficient Production.

This is the constitution of Section 3, whose equilibrium tax rate we found to be t=.50. The talented will choose *Business,* and the untalented will choose *Farming*. Payoffs will be:

Π(Talented) = (1-.5)(100)-2 = 48
Π(Untalented) = (1-.5) (10) –1 = 4
Π(Sovereign) = N_t [.5(100)] + N_u (.5)(10) - C

The sovereign can commit to tax rates in this example and in some regimes, there indeed are expectations that the sovereign will not use progressive taxes or regulation. The form of government does not matter as much as expectations. Written constitutional barriers offer easiest detection of sovereign expropriation: he has to violate a clearly defined rule; for example, he might create a new tax contrary to Magna Carta, as Charles I did. Unwritten expectations can be just as effective, though--- the crucial question is whether an innovative tax or regulation is thought to lack legitimacy. If the sovereign violates such an expectation, the subjects may believe this to be the prelude to general confiscation, and will shift to untaxable methods of production. The most important part of the British constitution is unwritten; Parliament could vote to postpone elections for fifty years without violating a written constitution, but such an act would certainly create apprehension on the part of the subjects.

Constitution 3: Progressive income taxes of t(income) are allowed (where t is now a function), but regulation is banned.

Outcome: Efficient.

The tax rate will be t=.50 on the first 10 in income, and t=89/90 on any income above 10. The talented will choose *Business*, and the untalented will choose *Farming*.

Production choices are still efficient, despite the disadvantage of this system for the talented. Payoffs will be:

Π(Talented) = (1-.5)(10) + (1-89/90)(90) - 2 = 4
Π(Untalented) = (1-.5) (10) - 1 = 4
Π(sovereign) = N_t [.5(10) +(89/90)(90)] + N_u (.5)(10) - C

Since the payoffs to the Talented are the same whether they choose *Business* or *Farming*, we might imagine a tax rate of just slightly less than 1-89/90 being assessed on income above 10, so as to give them an incentive to leave *Farming*.

Constitution 4: A flat tax rate of t and regulation are permitted; progressive taxation is banned.

Outcome: Inefficient.

We assume that the sovereign will impose inefficient regulations that eliminate *Business*. Once again, a flat tax rate of t=.50 is imposed. The result is that the Talented will choose *Teaching*, and the Untalented will choose *Farming*. The outcome is inefficient production, but the Talented will prefer this regime to regime (3), which allowed progressive taxation. Payoffs will be:

Π(Talented) = (1-.5)(60) - 2 = 28
Π(Untalented) = (1-.5) (10) - 1 = 4
Π(sovereign) = N_t [.5(60) +25] + N_u (.5)(10) - C

Under the progressive taxation of Constitution 3, the talented were left with no surplus at all compared to life in the state of nature. Under regulation, they pay taxes of 30 on an income of 60, and are far happier. The sovereign, however, has lost even more than the talented gained. His revenue from a talented subject, made up of tax revenue of .5(60) and external benefit of 25, is only 55, less than the tax revenue of .5(10) + (89/90)90 = 94 that he received under Constitution 3.

Constitution 5: Progressive income taxes of t(income) is permitted (where t is now a function), and regulation is also permitted.

Outcome: Efficient.

The tax rate will be t=.50 on the first 10 in income, and t=89/90 on any income beyond that. There will not be any regulation, even though it is permitted. The talented will choose *Business*, and the untalented will choose *Farming*. Payoffs will be:

Π(Talented) = (1-.5)(10) + (1-89/90)(90) -2 = 4
Π(Untalented) = (1-.5) (10) - 1 = 4
Π(Sovereign) = N_t [.5(10) +(89/90)(90)] + N_u (.5)(10) - C

These payoffs and choices are exactly the same as under Constitution 3. Production is efficient, once progressive taxation is allowed!

To see why the sovereign chooses not to regulate, consider his revenue under the most profitable combination of a ban on *Business* and progressive taxes. Pushing the talented to just the edge of despair, he would set the tax rates to be .50 on the first 10 of income and 49/50 on any income beyond that. His revenue from a talented subject would consist of tax revenue of .5(10) + (49/50) (50) plus the external benefit of 25, for a total of 79. As this is less than he would receive under the optimal progressive tax of Constitution 3, regulation hurts the sovereign rather than helping him. It hurts him because under progressive taxation, it is the sovereign himself who bears the loss from inefficient production.

Comparison of these constitutions reveals some curious implications.

First, if society begins in Constitution 5, with both taxation and regulation available, and then eliminates progressive taxation, welfare will fall. The society moves to Constitution 4, *Business* is banned, and national income declines. The talented subjects will acclaim the change, but they will gain less than the sovereign loses. The moral is that if the sovereign is allowed to retain inefficient regulation, moving to a flat tax system only channels his greed into a more wasteful direction.

Second, we have turned the classic Mirrlees model of optimal taxation on its head.[50] Mirrlees concluded that progressive taxes hurt output; we conclude that they help it. In the Mirrlees model, subjects choose effort levels in light of tax rates, which may be nonlinear--taxes might be either progressive or regressive. The surprise of his model is that even a rapacious or redistributive sovereign will prefer regressive taxes, with marginal tax rates declining at the higher income levels. The reason is that it is more important to avoid disincentives for extra work effort at high-income levels. The subject must be allowed to retain the marginal dollar of income if he is to retain efficient incentives, and so the highest tax bracket has a tax rate close to 0 percent.

In the Mirrlees model, the sovereign does not affect the production process except by way of the tax rates. In our model, however, the sovereign affects it both by tax rates and regulation. The subject's decision is his choice of technique, not just his effort level for a given production function, and under regulation the sovereign impinges heavily on that choice. Therefore, in our

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50 James Mirrlees, An Exploration in the Theory of Optimum Income Taxation, 38 *Rev. Econ. Stud.* 175 (1971).

model what is important for efficiency is to give the sovereign the marginal dollar of income, which is done by a near-100 percent tax rate for the highest tax bracket. Giving the sovereign the more leveraged equity stake through progressive taxation provides reduces his incentive to produce inefficient regulations.

The possibility of regulation suggests the society will end up even further from efficiency than either Mirrlees or we suggest, because of the irreconcilable divergence between efficient incentives for the sovereign and good incentives for the subject. In a second-best world, progressive taxation might be efficient because making the sovereign the residual claimant on national income gives him an incentive not to introduce inefficient regulation. In the Mirrlees model, regressive taxation is efficient because it gives the subject an incentive to work hard by making him the residual claimant on national income. It is likely undesirable for either subject or sovereign to be the sole residual claimant. Thus a risk-sharing model in which both subject effort and sovereign regulation are important would have to choose a tax rate somewhere between 0 and 100% to minimize the costs of the two distortions.

From the perspective of subjects, the adverse incentive costs of progressive taxes plausibly exceed those of flat taxes. For proponents of flat taxes, this represents the principal criticism of progressive taxes, and the principal benefit of flat taxes. But what is an adverse incentive for the subject might be a useful incentive device for Leviathan. Flat taxes reduce the adverse incentive costs born by subjects, but result in higher incentive costs for the sovereign, in the form of increased inefficient regulations.[51]

Both sovereign and subjects could be better off if the sovereign could bind himself not to impose inefficient regulations. Best of all would be a constitution that forbade such regulation. However, it is difficult to fetter Leviathan, and even if one could it is often difficult to distinguish efficient from inefficient regulations. Moreover, regulation takes multifarious forms, and it is exceedingly difficult to monitor for inefficient regulation. Did President Clinton receive a payoff from the Red Chinese Army? If so, did it influence him to waive national security concerns in technology transfers? Would this necessarily have been value-decreasing for Americans?

Self-binding fetters against inefficient regulation will thus be less than effective. Suppose instead that the sovereign employs an incentive strategy, in which his gains from inefficient regulations are reduced. We suggest that the most effective incentive strategy may be one in which the sovereign taxes different income streams at different rates, rather than levying a general

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[51] This replacement of efficient by inefficient redistribution can be viewed as another application of the idea that governments use complicated and esoteric redistribution tools because the public would object to blatant redistribution; see, e.g., Eric Rasmusen & Mark Zupan, Extending the Economic Theory of Regulation: The Form of Policy, 72 *Pub. Choice* 167 (1991). In allowing progressive taxation, our constitution corresponds to a public opinion that does not object to blatant redistribution.

income tax (which is a flat tax). Since the tax rate associated with the higher income stream is higher, his incentive to reduce it through regulation is lower.

The question, then, is whether income streams most at risk from inefficient regulations can be identified and taxed discriminatorily. These will likely not be the lowest personal income streams, for those thrown out of work by inefficient regulations are likely to substitute lower paying jobs, or face unemployment. Instead, those who would otherwise have relatively high incomes will bear the greater burden of inefficient regulations. The greatest penalty would likely be paid by those in the highest income brackets. In short, we are most likely to incentivize Leviathan to produce efficient regulations through a progressive income tax.

High taxes on the wealthy may thus be less inefficient than heavy regulation. Government-mandated affirmative action for procurement contracts and other government interference in corporate decisions, for example, clearly distort production and allocation, and high marginal tax rates might be relatively less costly. Taxes can in theory be neutral from the point of view of efficiency, since a lump sum tax does not introduce any change in incentives at the margin except through wealth effects, which do not create inefficiency. In practice, taxes are not lump sum, but, even so, a high income tax would affect rentiers as well as executives, while regulation of executive decisions affects only productive activities.

The troubles of East Asia in the 1990's may provide another example. Banking regulation and interference in credit markets is a classic way to regulate the economy in the name of efficient planning while enriching friends of the government. The sovereign is tempted to require banks to give loans to poor credit risks if industries or individuals thus benefited are his friends, and he has strong incentives to keep insolvent banks open and conceal their insolvency at the expense of healthy banks. All might benefit if instead he could impose taxes on the banks, individuals, and industries that are hurt by this policy, but allowed efficient lending. Effectively, the tax gives the sovereign an equity stake in the bank.

Taking a longer view, our model suggests an alternative explanation for the Rise of the West, as a matter of economic history. "New Institutional" historians argue that the economic growth that followed the decline of feudalism resulted from valuable legal institutions, notably stable property rights and enforceable contracts. But why were these institutions created? Douglas North and Robert Thomas argue that efficient laws were a concession by the sovereign to his subjects when his seigneurial dues were no longer adequate to cover his expenses.[52] The sovereign then had to look for new sources of revenue, and to do this needed the consent of his subjects, as expressed in representative assemblies. These grew into parliaments, which in time enacted value-increasing laws. While this might nicely explain *Magna Carta*, in other respects it raises vexing problems. Why did sovereigns with a firmer grasp on the reigns of power than King John concede efficient laws? And why did the new taxes take the form of direct taxation, rather

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52 Douglass C. North & Robert Paul Thomas, *The Rise of the Western World: A New economic History* 66 (Cambridge U.P., 1973).

than increased feudal levies? Our theory suggests that, in part, North and Thomas had it backwards; and that the demand for efficient laws came from the sovereign as well as the subject. First, the sovereign turned to direct taxation because this offered higher revenues than feudal dues. Second, the sovereign had a greater incentive to promote efficient laws when direct taxes gave him a greater stake in economic growth.

It should be kept in mind that the sovereign, described in most of this paper as a monarch, could just as easily be a group of citizens—an oligarchy or a democracy. It would be easy to adapt our model, for example, to a democracy in which the untalented majority uses its power to extract wealth from the talented minority. Despotism then represents an unrestricted regime in which the Talented would pretend to be untalented if they could, and would choose *Plunder* if they could not. Progressive or discriminatory taxes would serve to enrich not just one individual, but a majority of the subjects who form a coalition to pillage the wealthy.

Our Constitution 4, which bans progressive taxation but not regulation, corresponds to Representative Dick Armey's plans for the U.S. tax system. The danger is that the untalented majority, unable to use taxes to soak the rich, might instead require the rich to choose *Teaching* instead of *Business*. In actuality, we would expect to see more regulation in the style of affirmative action, the banning of standardized tests in hiring, corporate responsibility requirements, land-use regulation, labor regulation, and mandated fringe benefits.[53] If the sovereign—here in the form of elected leaders—cannot pander to his subjects/masters by giving them cash, he will offer them regulation.

In some respects, our model might seem to clothe Leviathan with more bargaining power than a modern state in fact possesses. Our strongest assumption is perhaps that Leviathan perfectly monitors his agents. Quite obviously, bureaucrats do not act merely to maximize the wealth of the government. Yet the private incentives of bureaucrats are aligned sufficiently closely to those of a hypothetical wealth-maximizing Leviathan to make our model of interest.[54] Nor do

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53 Many forms of regulation are inefficient because they alter contracts to transfer wealth from one party to another in the short run, but have purely negative effects on all concerned in the long run, when the contracts are renegotiated in light of the new regulations. See Gordon Tullock, The Transitional Gains Trap, *Bell J. Econ*. 671-78 (Fall 1975). Mandated fringe benefits and work conditions are a good example. For legislative discussions of two examples, see U.S. House of Representatives, *Family and Medical Leave Act of 1988, Report 100-511, part 2*. 100th Congress, 2nd Session, Washington: U.S. Government Printing Office, 1988; U.S. Senate, *Minimum Health Benefits for All Workers Act of 1988, Report 100-360,* 100th Congress, 1st Session, Washington: U.S. Government Printing Office, 1988.

54 As a homely example, consider the meter maids of the District of Columbia, who until recently were given a quota of cars to ticket each day. For a discussion of how, for heuristic purposes, Leviathan might be imagined as a rent-maximizing individual, see Brennan & Buchanan, supra note 48, at 26-30.

we suggest that the governance strategies in a democratic state are devoid of value. Instead, we more modestly assert that the agency costs of misbehavior by the sovereign might in part be addressed by incentive plans, and that this might help to explain the prevalence of progressive taxation.

We do not offer an empirical test of our model. Any cross-country regressions that include both First and Third worlds faces grave failures of *ceteris paribus*; in particular, the First World has succeeded much better in chaining Leviathan with constitutional fetters generally, and might be expected to have less rentseeking in both the taxing and regulatory dimensions, yet also has superior technology for taxing, regulating, and lobbying, which goes the other way. We do suggest that the idea is consistent with broad trends in recent American history, and with cross-country comparison between America and those countries it most closely resembles. From 1962 to 1993, marginal tax rates for the highest American earners declined, and during this time the regulatory burden steadily increased. Regulatory burdens seem lower in the United Kingdom and Canada, whose tax policies are more progressive than those of the United States.[55] There is, of course, no easy way of measuring the regulatory burdens of different countries. However, we are skeptical of rankings of economic freedom that rate the burden the same in all three countries.[56] Such studies seem to us to pay inadequate attention to the relatively enormous mass of regulations in this country, and to the costs of a legal system that often seems to impose liability in all the wrong places while balking at enforcing a contract. We note, however, that a 1998 study by LaPorta, Lopez-de-Silanes, Shleifer, and Vishny does find a correlation of only .0752, insignificantly different from zero, between measures of the top tax rate and business regulation across 82 countries.[57] This is not the negative correlation we predict, but it is what one might expect if our effect exists but is masked by a general tendency for some countries to have more obtrusive governments.

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55 James B. Davies, Tax Incidence: Annual and Lifetime Perspectives in the United States and Canada, in John B. Shoven & John Whalley, *Canada-U.S. Tax Comparisons* 151 (U. Chicago Press, 1992).

56 Bryan T. Johnson, Kim R. Holmes & Melanie Kirkpatrick, *1998 Index of Economic Freedom* (Heritage Foundation & *Wall Street Journal*, 1998). A variety of other rankings of economic freedom exist, but most are not suited to comparing tax rates/progressivity and the regulatory burden. See Gwartney, James, Robert Lawson, and Walter Block (1996) *Economic Freedom of the World, 1975-1995*, Vancouver, B.C.: Fraser Institute, 1996; Messich, Richard, *World Survey of Economic Freedom 1995-96*, New York: Freedom House; World Economic Forum, *Global Competitiveness Report*, Geneva, World Economic Forum, 1997.

57 LaPorta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert Vishny, The Quality of Government, NBER Working Paper no. 6727, September 1998. See, especially, Tables 1 and 2.

It is difficult to test hypotheses about the impact of tax reform for other reasons too. First, it is hard to assess the progressivity of a change in the tax system. The 1986 Tax Reform Act ("TRA") lowered marginal tax rates at the top end in the United States, but also eliminated taxes for the poorest taxpayers, taxed realized capital gains as ordinary income, eliminated interest deductibility on consumer debt, and wiped out a large number of loopholes. The result is that the TRA increased taxes for the highest earners, and reduced them for the lowest earners.[58] Even now, one of us would his find his tax burden increase substantially if a revenue-neutral flat tax regime were passed. Second, a change in income tax policies affects the incentives of taxpayers to misreport earnings or to change the form of transactions.[59] With an increase in tax rates, a taxpayer might work more deviously, but not less.

We suggest a third reason why it is difficult to test the effect of progressivity on earnings. While taxpayers might react swiftly to a change in tax policies, one would expect the sovereign to react more slowly, in his choice of regulatory policies. Even after a reduction in marginal tax rates, the sovereign will not proclaim inefficient regulations until he can determine how this will affect his stake in the economy, and he will not know this until he can measure the change in tax revenues. A study of immediate revenue effects might thus be myopic, and miss the effect on sovereign incentives that we discuss in this Article.[60]

There are other interactions between government objectives and fiscal efficiency besides the one we have focussed on. In particular, Becker and Mulligan (1998) raise a point whose perversity is similar to that of our argument against flat taxes but with a different emphasis.61 They show that a fiscal program--either taxing or spending-- which is suboptimal from a Ramsey point of view can nonetheless improve welfare by hindering the growth of government, and use

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58 Joseph Pechman, The Future of the Income Tax, 80 *Am. Econ. Rev*. 1 (1990) (Table 5).

59 Joel Slemrod, Optimal Taxation and Optimal Tax Systems, 4 *J. Econ. Pers*. 157 (1990).

60 Studies which look only to the change in earnings in the year of the tax change are therefore suspect. See, e.g., Martin Feldstein & Daniel Feenberg, The Effect of Increased Tax Rates on Taxable Income and Economic Efficiency: A Preliminary Analysis of the 1993 Tax Rate Increases, N.B.E.R. Working Paper no. 5370 (1995). Using data from 1985 to 1988, Feldstein reported an elastic relationship between taxable income and marginal tax rates. Martin Feldstein, The Effect of Marginal Tax Rates on Taxable Income: A Panel Study of the 1986 Tax Reform Act, 103 *J. Pol. Econ*. 551 (1995). Other studies report only minor adjustments in work habits, using data from the 1970s and 1980s. See, e.g., Thomas MaCurdy, Work Disincentive Effects of Taxes: A Reexamination of Some Evidence, 82 *Am. Econ. Rev. Papers & Proceedings* 243 (1992).

61 Gary Becker and Casey Mulligan, "Deadweight Costs and the Size of Government," Stigler Center working paper no. 144, U. of Chicago, August 1998.

inflation taxes, capital taxes, and tax loopholes as examples. Put simply, inefficient tax schemes reduce the revenue available to the government. In cross-country regressions over the period 1973-90 they find that broad tax bases and relatively flat tax rates-- the systems recommended by economists-- are associated with larger governments. This effect would be complementary to the one we suggest, rather than working against it.

7. Conclusion

We have identified a secret paradox in contractarian accounts of political and legal obligation. If Leviathan is expected to behave like a kleptocrat, no one will wish to enter into the social contract. In doing so, they would be trading off the possibility of theft by each other in the state of nature for the certainty of theft by Leviathan in civil society. But even if Leviathan's promise of efficient governance cannot be enforced by contract or constitutional guarantees, it becomes more credible when inefficient regulations are seen to impose a cost on him, in terms of forgone revenues. This suggests an incentive explanation for how the social contract may be operationalized. When Leviathan's interests are allied to those of his subjects, through tax policies that give him a stake in his society's economic growth, he will require a higher side payment before he imposes an inefficient regulation. His subjects will then be more willing to abandon the state of nature and enter into civil society.

This account of the agency costs of taxes has implications in the design of tax policies. In the Hobbesian account of civil society, Leviathan is the residual owner of the economy, and the subjects are debt holders. On supply-side models, the ideal tax system turns Leviathan into a debt holder and gives all residual earnings to the subjects. We suggest that a risk- and profit-sharing tax system, in which both Leviathan and his subjects share in residual earnings, would be superior to each of these models. A Hobbesian income tax would give Leviathan the strongest possible incentives to proclaim efficient regulations, but would entirely sap the incentives of subjects to produce wealth. The supply-sider's ideal tax system would give the subjects the strongest incentives to produce wealth, but would ignore Leviathan's misincentives to destroy wealth. The mirage of non-distortionary taxes should thus be abandoned, since the agency cost problem is impacted. The two misincentives work at cross-purposes, and there is no level of taxation that eliminates them. The goal should instead be to reduce total deadweight losses, and there is no reason to believe that this would be done at either a zero or 100% rate of income taxation.

Our model casts new light on the flat versus progressive income tax debate. Flat tax proponents have argued that progressive taxes sap the incentives of the most productive earners, and that a move from progressivity would strengthen the economy. The case for progressive taxes is usually couched in the language of distributive justice. However, we suggest an efficiency argument for progressive taxation, with the costs of a move to flat taxes (in weakening the sovereign's productive incentives) exceeding its benefits (in strengthening the subjects' productive incentives). The debate over progressive taxes is not simply a tradeoff between efficiency and equity, but also implicates a tradeoff between two kinds of inefficiencies.

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