ECONOMICS AND CONFLICT: 
THE DARK SIDE OF SELF-INTEREST AND ITS 
GOVERNANCE AS ECONOMIC ACTIVITIES

Stergios Skaperdas
Department of Economics
University of California, Irvine
Irvine, CA 92697
http://www.socsci.uci.edu/~sskaperd/
sskaperd@uci.edu
VERY PRELIMINARY AND INCOMPLETE DRAFT
Please do not circulate without author’s consent
April 26, 2006

ABSTRACT: Conflict and appropriation are costly activities that are economically significant, yet the assumption of perfect and costless enforcement of property rights in much of economic research has limited their systematic study. Conflict follows directly from the methodological principle of self-interest and taking it into account in modeling leads to very different findings than in its absence: in straightforward extensions of basic models of exchange, compensation is inversely related to marginal productivity; prices depend on relative power, as well as on preferences and endowments; exchange itself can be foreclosed by enforcement costs; the costs of security critically depend on governance and norms of behavior; wage subsidies, land reform and other seemingly inefficient arrangements can be rationalized as appropriate policies in second-best settings; and comparative advantage is distorted in the presence of conflict. Overall, in the presence of conflict and appropriation Nirvana or first-best models are not empirically plausible. Aspects of modern governance like checks and balances and the bureaucratic form of organization can partly be thought of as restraining conflict and appropriation. These restraints are better than the typical governance alternative, which is personalized, proprietary governance which typically involves autocratic, amateurish, and corrupt rule.
The first principle of economics is that every agent is actuated only by self-interest. The workings of this principle may be viewed under two aspects, according as the agent acts without or with, the consent of others affected by his actions. In wide senses, the first species of action may be called war; the second, contract.

Edgeworth, *Mathematical Psychics*, 1881 (pp.16,17)

"[T]he efforts of men are utilized in two different ways: they are directed to the production or transformation of economic goods, or else to appropriation of goods produced by others.


The hidden hand of the global market would never work without the hidden fist. And the hidden fist that keeps the world safe for Silicon Valley’s technologies to flourish is called the United States Army, Air Force, Navy and Marine Corps (with the help, incidentally, of global institutions like the U.N. and the International Monetary Fund). And those fighting forces and institutions are paid for by all the tax dollars that Washington is "wasting" every year.


Despite Edgeworth’s or Pareto’s references to "war" and "appropriation" as central aspects of economic behavior, the dark side of self-interest has not had a place in the paradigm that Edgeworth and Pareto helped develop and which has dominated economics for more than a century. Arming, fighting, stealing, defending, rioting, resisting, or protesting have had no place in economic modeling as an integral part of the economy. Though, more recently, there have been areas of research that have emphasized the economic approach to crime or to conflict as a way of understanding crime or conflict, the feedback from these activities as generic economic activities that affect resource allocation in any systematic way has had virtually no influence on the thinking of economists. Instead, over the past century, political scientists and public policy analysts have had the monopoly in integrating economics and security concerns. Thomas Friedman’s "hidden fist" has received virtually no attention in economics as even of token relevance to economic performance.

In this paper I will argue the following

- Conflict, appropriation, and "enforcement" induce costs that are economically very important. These costs can be induced by civil wars, other types of domestic conflict, international wars and interstate security concerns, resource competition, and more generally – to use a fashionable, though not very well-thought out term – by insecure property rights. Even when property rights are secure, their enforcement by the state is expensive and therefore economically significant. The costs induced by conflict can be
reasonably thought of as being at least as important as the deadweight costs induced by any distortions that are more commonly analyzed by economists.

- Conflict and appropriation follow directly from the methodological principle of self-interest. For anybody who espouses that principle the absence of appropriation is an assumption. Nevertheless that assumption is rarely invoked explicitly, except in the guise of perfect and costless enforcement of property rights ("Nirvana," to use Demsetz's (1969) colorful term). Given the large economic costs of enforcement, the question then emerges of whether this assumption of perfect and costless enforcement of property rights is inconsequential for resource allocation.

- Modeling conflict and appropriation leads to different findings and predictions than those derived in the absence of appropriation.

- In particular, in straightforward extensions of basic models of exchange, compensation is inversely related to marginal productivity; prices depend on relative power, as well as on preferences and endowments; exchange itself can be foreclosed by enforcement costs; the costs of enforcement themselves critically depend on norms of behavior and bargaining; and, comparative advantage can be significantly distorted in the presence of conflict. Overall, in the presence of conflict and appropriation Nirvana or first-best models are not empirically plausible.

- Controlling and governing conflict and appropriation are thus important economic activities as well. Proprietary or for-profit governance has been by far the most prevalent form of governance historically. However, it appears that instead of helping solve the problem of conflict, proprietary governance in many respect exacerbates it. Modern governance appears better suited to at least partially control the dark side of self-interest.

The main arguments developed in this paper arise from the literature on conflict in which Jack Hirshleifer and Herschel Grossman were pioneering and major contributors. However, its implications go way beyond that literature and are related to at least two other broad areas of research within economics. One area of research has emphasized the central role of transaction costs and institutions in the economy (see, e.g., North, 1990, or Coase, 1992). Although the term "transaction costs" has been widely used, it has rarely been modelled or identified in concrete cases. The costs of conflict, appropriation, and enforcement that we examine and model in this paper are important components of such transaction costs. A major theme pursued here is how different institutions (governance, norms) induce different transaction costs and affect welfare and efficiency in ways that are very different from those predicted by first-best, Nirvana models in which there are zero transaction costs.

The second area of complementary research is recent work on institutions and economic performance that has emphasized the crucial role of conflict (Acemoglu, Johnson, and Robinson, 2005) and power (Olson, 2000). Perhaps even
more than this work, this paper emphasizes the quantitative significance and central importance of the costs of conflict and appropriation. The importance of such costs appears to even be of interest to institutions like the IMF. Its current Director of its Research Department, appears to urge such studies in a note entitled "Assume anarchy? Why an orthodox economic model may not be the best guide to policy" (Rajan, 2004). The difficulties in understanding economic performance without resorting to issues of conflict and governance

1 The empirical relevance of conflict and appropriation

In this section, I provide examples of some costs associated with conflict and appropriation. The list is far from being comprehensive or exhaustive, but it should at least provide the reader with a sense of the quantitative importance of such costs and, therefore, of their empirical relevance for economics.

Civil wars

More than 70 countries have experienced civil war since World War II (Fearon and Laitin, 2003, p.75). The median length of such wars is more than seven years and the costs include: the cost of arming, the wages or opportunity cost of soldiers or guerrillas, the loss of life (at least 16 million in such wars), injuries and psychological incapacitation that can be long-lasting, the destruction of crops, buildings, infrastructure, and other collateral costs that have been analyzed by World Bank researchers (Collier et. al., 2003).

In addition to these direct costs of civil wars, there are indirect costs due to the economic distortions that are due to war. These include static and dynamic misallocation of resources. For example, the diversion of resources to conflict reduced capital formation that, in turn, reduces production possibilities and welfare in the future. Based on accepted methodology, Hess (2003) has estimated the welfare costs of conflict (that does not include just civil wars) for a large sample of countries over thirty years to be on average 8 percent of steady-state consumption. Whereas the costs for high income countries are typically below that, for many low-income these costs are much higher, approximating half of consumption.

Organized crime

From Southern Italy (Gambetta, 1993) to Russia and other post-Soviet states (Varese, ), Japan (Hill), Afghanistan, Bolivia, Peru, and Colombia (Clawson and Lee, 1998), to Mexico, U.S. inner cities (Jankowski, 1991) and some U.S. labor unions (Jacobs, ), organized crime groups have control over sizable chunks of economic activity. Organized crime emerges out of the power vacuum that exists when there is an absence of state enforcement which, in turn, can have a number of different sources: prohibition of drugs and other commodities, illegal human trafficking, geography, ethnic or social distance from the seat of government, or simply collapse of state institutions as it occurred in many post-Soviet countries or Afghanistan. As argued in Skaperdas (2001), the costs of organized
crime have similarities to those of civil wars, both in terms of their direct effects and their long-term indirect welfare effects: contract enforcement is expensive and primitive compared to that available in modern states; the rents attract unproductive competition between mafias and gangs; productive investment in physical or human capital is discouraged. Recent trends are not encouraging according to Naim (2005), as a more economically globalized world has produced bigger gaps in governance which organized groups are eager to fill.

Other forms of domestic conflict

Besides civil and mafia wars, there are other lower-level forms of conflict within countries. Ethnic, religious, or social rivalries can lead to exclusion and violence with long-term economic consequences. Military coups and security force rivalries also commonly occur in many countries, without them necessarily breaking out in civil war. Protests, strikes, lockouts, and their possible suppression by governments are other examples of domestic conflict. Although I am not aware of attempts to measure the associated costs of such activities, Rodrik (1998, 1999) considers them critical in understanding economic performance in low-income countries.

Costly enforcement of property rights

Many incidents of local conflicts have been reported lately from China (see, e.g., Jacques, 2005) that involve peasants who have traditionally farmed land that is now at the outskirts of cities, but whose officials and local party members want to appropriate for other uses that might be or might not be more socially efficiently. Such clashes between traditional (typically communal) land rights and attempts at appropriation (either for private or, as in many cases in China, for the ostensibly communally owned municipal enterprises) aimed at different types of land use have been common in other countries and in history, with the enclosure movement in England being one well-known example. India, rural Russia, and perhaps most countries today do not have land-ownership law or when such law exists it is not enforceable.\footnote{For example, India has law but too many many of them that are hopelessly entangled, because they come from the different legal traditions of the county. For example, Lewis (2004, p.199) reports: "It is not clear who owns land in India. Over 90 percent of land titles are unclear."}

With community enforcement of traditional land rights weakening and without modern property right, individuals takes private enforcement measures that may or may not involve the threat of violence which are nonetheless undoubtedly costly. However, modern property rights in land as well as other factors of production are far from being inexpensive. For such modern property rights require laws and the legislative institutions that have the commitment power (or, legitimacy) to have such laws last; the title and other agencies that will record and deposit titles and related documents; courts and police that will enforce the laws; the trained professionals like the surveyors, lawyers, judges, bureaucrats, legislators, and police who are needed to staff the different organizations; the institutions of higher learning that will educate them all these professionals; and the belief that the whole chain from legislation to the different levels of enforcement and legal appeals is largely free of corruption. It is obviously expensive to
have modern land property rights and is thus not surprising that many, if not most, countries still do not have them.

The cost of common crime and its avoidance is also relevant and quantitatively important. For example, expenditures on prisons by the State of California alone surpassed state expenditures on higher education about a decade ago and now stands at about $8 billion (against $3 billion for higher education [citation here]).

Defense expenditures
All sovereign states expend some resources on (external) defense expenditures. Military expenditures vary widely across different countries, rarely going below 1% of GDP but in a few cases, as in the case of Saudi Arabia - tend to go above 10% of GDP. For 2004 world military spending was estimated to be over 1 trillion dollars, about 2.6% of world GDP (SIPRI, 2005, p.10). Military spending data does not include some other defense expenditures on intelligence or on civilian R&D that is in practice military R&D. The variation of expenditures across countries (in terms of fractions of GDP) suggests that there might be mechanisms that could reduce such expenditures and thus make more resources available for civilian uses.

In addition to defense expenditures some countries have experienced interstate wars – and have incurred the costs associated with such wars – during the post-WWII period, but the numbers are not comparable to those associated with civil wars during the same period.

Forms of transnational insecurity
However, there are risks for serious interstate rivalries and wars in the future that are of two broad kinds: those that are dyadic or regional in character and those that are more global in character and would be connected with the probable emergence of one or more new superpower.

Though dyadic or regional rivalries may be associated with ethnic or other primordialist disputes, resource contestation is one economic reason that can be studied more concretely using economic methods. Oil is currently probably the most important such resource, but other minerals and fresh water resources are gaining importance as well according to Klare (2001). The discovered and yet-to-be-discovered oil wealth of Central Asia is fuelling disputes and arming

---

2In fact, for 1991 and probably because of payments associated with the first Gulf war, Saudi Arabia's military expenditures went over 22% of GDP. Japan is one country with its military expenditures hovering around or just below 1% of GDP, although these expenditures have been large in absolute numbers and have consistently exceeded US $ 40 billion over the past decade. Note that Japan's Constitution prohibits a military and, thus, formally these are considered "police" or "internal security" expenditures. (All information from the Stockholm International Peace Research Institute (SIPRI), http://first.sipri.org/non_first/result_milex.php?send)

3However, some military R&D expenditures have direct civilian applications or are disguised civilian R&D. In fact many major breakthroughs in technology – the internet, various high-tech materials, computers, shipbuilding – have their roots in military R&D. One could possibly argue then that military spending is worth it just for the tremendous technological spillovers that it has had in history. However, why should one spend money on military R&D in the hope of receiving some uncertain technological spillovers in the future, instead of directly spending them on R&D for targeted civilian applications?
in the area and beyond that could approach a new "Great Game." The states surrounding the Caspian Sea—Russia, Kazakhstan, Tourkmenistan, Iran, and Azerbaijan—have still not settled on a formula for dividing rights of exploration and exploitation for oil. Where claims are settled, oil companies and their governments vie for contracts, rival pipeline routes, bids to buy local rights as well as local firms, and the whole endeavor is tinged with subterranean geopolitical calculations that involve the United States as well as all the lesser powers of Russia, China, and Europe. Further South, with the Iraq war, the Middle East has already become a new battleground with much uncertainty about where it will all lead. And, areas with suspected oil reserves like the South China Sea (around the Spratly and Paracel islands) have been already contested in minor hot incidents as well as diplomatically by seven countries (China, Taiwan, Vietnam, the Philippines, Indonesia, Malaysia, and Brunei).

Beyond oil, fresh water has perhaps been underrated for its potential to create havoc in many areas with rapidly increasing populations, economic growth, and economic globalization. It is not well-known, for instance, that Egypt has threatened its upstream neighbors, especially Ethiopia, with bombing water facilities if they were to go ahead with irrigations projects on the Nile (Klare, 2001, p.153). In the coming years, the countries of the Upper Nile and the tributaries that drain into Lake Victoria (Sudan, Ethiopia, Kenya, Uganda, Tanzania, Rwanda, Burundi, Congo) will need to draw more water from the river, but any significant reductions in the downstream flow to Egypt could have catastrophic effects to the economy of that country. (Economic globalization intensifies demand for water resources primarily through the demand for water-intensive agricultural products, as is the case for Egyptian cotton.) We cannot predict how, or whether, such disputes will be resolved peacefully. In the meantime, it should surprise no one if impoverished Ethiopia buys state-of-the-art anti-aircraft batteries. Some other examples of rivers that have induced or are likely to induce contention include the Jordan river (involving Israel, Jordan, Syrian, and the Palestinians), the Tigris and Euphrates (involving Turkey, Syria, and Iraq), the Indus (Afghanistan, Pakistan, India), the Brahmaputra (China, India, and Bangladesh), and the Mekong (China, Thailand, Laos, Campodia, and Vietnam).

The second type of insecurity that is looming on the horizon is the real or imagined rise of a peer competitor to the military and economic preeminence of the United States. The most widely mentioned and discussed candidate is China. Before September 2001 the role of China had been widely debated especially in connection with its WTO accession. The proponents of China’s admission into the WTO were offering the liberal gains-from-trade and peace-through-trade arguments, whereas its opponents were offering the realist it-will-come-back-to-bite-you argument as well as more ideological arguments regarding the nature of China’s polity and its relation to Taiwan. Whereas it would take China decades to become a genuine peer competitor to the US, in the absence of significant or prolonged measures not just to improve relations, but also to eliminate all suggestions of hostile intent on either side, the present calm could
well turn out to be the calm before the storm.\textsuperscript{4}

Influence, lobbying, and litigation [to be done]

From land, to oil deposits, water resources, and shares in corporations, property rights are costly to enforce by governments and interested parties, whenever such rights legally exist. In other instances, some examples of which have been discussed here, property rights do not even exist and private costly enforcement under "anarchy," often with the threat of violence in the background. The associated costs are economically very significant and, in many ways, dwarf the deadweight costs of ordinary distortions on which economists typically focus.

One question that emerges then is whether, regardless of the quantitative importance of these costs, do the essential insights from existing Nirvana models continue to hold? If they do not, how are the findings modified and how do they change our interpretation of reality? Before proceeding with the examination of specific models that allow for conflict and appropriation I should note that in such settings the main inputs of conflict – be it arming, influence, or lobbying – are not combined collaboratively, as when one side expends more of it, the other side can be expected to have a lower payoff. That is, the process is fundamentally adversarial and could hardly be described by an ordinary production function. This is one major substantive difference between ordinary productive inputs and the inputs of conflict that can be better considered non-productive.

2 Valuation and compensation, with and without appropriation

For reference, we begin with a simple textbook model of exchange of the type examined by Edgeworth (1881). Consider two individuals, labeled $a$ and $b$, and two goods, fish ($f$) and corn ($c$). $a$ holds an endowment $e_a$ that can be converted one-to-one into fish and $b$ holds and endowment $e_b$ that can be converted also one-to-one into corn. Consumption of $f_i$ of fish and $c_i$ of corn by $i = a, b$ induces utility $U(f_i, c_i)$, which, for simplicity, we assume to be linearly homogeneous and normalized so that $U(0, 0) = 0$.

Neoclassical economics has exhaustively analyzed such settings. The determination of prices (or, exchange ratios) by bargaining or competition, their relationship to scarcity and preferences, and the compensation of different agents have been main concerns of this literature. Regardless of the approach taken, there is a tendency for outcomes to have the property that goods that are more valued to have higher prices, and those who hold such goods to receive higher incomes and utility. For instance, under competitive pricing, the final

\textsuperscript{4}Of course there is the possibility of other states becoming peer competitors to the United States, even some seemingly unexpected ones at the moment. For example, Japan possesses the nuclear and missile technologies to become a major nuclear power within a short period of time. While now Japan might not aspire to become a nuclear power, a confirmation of North Korea’s nuclear status or higher perceived threats from China could well make Japan a nuclear power, after sufficient preparation of its domestic opinion. A nuclear Japan would radically change world balance of power, even if it does not evolve to a US peer competitor.
utility received by \(a\) can be shown to equal \(e_a \frac{\partial U(e_a, e_b)}{\partial e}\) and the utility received
by \(b\) is \(e_b \frac{\partial U(e_a, e_b)}{\partial e}\). Suppose \(e_a = e_b = E\). Then, the person who would receive
higher utility would also be \(a\) if and only if \(\frac{\partial U(E, E)}{\partial f} > \frac{\partial U(E, E)}{\partial c}\). That is the
person who, other things being equal, holds the endowment that contributes
higher marginal utility also would receive higher compensation.\(^5\)

Moreover, such a property does not hold just for the case of exchange and
utility. The simple problem of exchange we are discussing is analytically iso-
morphic to the basic problem of production, whereby the endowments of \(a\) and
\(b\) are inputs used in the production of a final consumption good by a means
of a production function that has the same properties that the utility function
has. Under such a production interpretation of the model, the more marginally
productive person would have a higher wage rate and, other things equal, would
also receive higher utility.\(^6\)

As both Edgeworth and Pareto mention in the opening quotes, however, and
as Thomas Friedman’s need for a "hidden fist" indicates, there is no reason for
\(a\) and \(b\) to just haggle over price. In the absence of suitable restraints \(a\) could
engage in another activity – arming, influencing, litigation - that would attempt
to take away at least some of the corn away from \(b\). If \(b\) were to foresee that, he
would do that as well. Thus, engaging in open conflict with one side winning
outright entails additional costs, beyond those of arming or other similar activity,
the mere threat of conflict would influence the bargaining positions of the two
sides. Their interaction then can be expected to be rather different from the
one in the basic model of exchange that we just reviewed.

To allow for the possibility of appropriation, suppose that \(a\) and \(b\) can allocate
part of their endowment to arming so that\(^7\)

\[
\begin{align*}
    e_a &= f + g_a \\
    e_b &= c + g_b
\end{align*}
\]  

(1)

where \(g_i\) (\(i = a, b\)) denotes "guns" and \(f\) and \(c\), given the specialization of
\(a\) in the former and of \(b\) in the latter, are the total quantities of fish and corn
produced. Note, then, that contrary to the neoclassical case of the previous
section the number of fish and corn is variable. Given the assumption of linear
homogeneity of the utility function that implies transferable utility, total utility
\(U(f, c) = U(e_a - g_a, e_b - g_b)\) is variable as well. The more guns the two sides
choose, the lower is the level of useful production and of total utility.

\(^5\)For exceptions, see literatures on "manipulation of endowments" or "immiserizing
growth." [Postlewaite, Bhagwati.]

\(^6\)With more general utility and production functions or with different ways of determining
exchange, defining contribution to marginal utility or productivity are not as clear cut, but
we would be hard pressed to find cases in which those who contribute more to utility or more
to production receive less compensation.

\(^7\)The model examined here is formally similar to those Skaperdas (1992), Skaperdas and
Syropoulos (1997), and Neary (1997). The argument in this section follows a very similar
approach to that in Skaperdas (2003).
Guns are used to determine distribution. The two sides could fight it out and whoever turns out to be the winner would take possession and consume all of the fish and corn. Another possibility would be for the two sides to exchange some corn for some fish under the threat of fighting it out. In such a case guns would determine the bargaining power of each side. Let \( p(g_a, g_b) \) denote \( a \)'s probability of winning in the event of a fight, with \( 1 - p(g_a, g_b) = p(g_b, g_a) \) being \( b \)'s probability of winning; that is, the probability of winning is symmetric. Naturally, it is assumed that the probability of winning of each side is increasing in its own quantity of guns and decreasing in that of their opponent.\(^8\) Again, because of the linear homogeneity of the utility function it can be shown that the two sides would be indifferent between fighting and a receiving a \( p(g_a, g_b) \) share of fish, corn, and total utility with \( b \) receiving the remainder. Risk aversion, diminishing returns, destruction due to fighting, or additional resources needed to be devoted to fighting all would imply a greater set of peaceful alternatives, but the findings that follow do not qualitatively depend on exactly how the surplus over fighting is determined. Then, whether the two sides fight or settle peacefully under the threat of conflict, taking account the constraints in (1), the payoff functions are as follows:

\[
V^a(g_a, g_b) = p(g_a, g_b)U(e_a - g_a, e_b - g_b)
\]

(2)

\[
V^b(g_a, g_b) = (1 - p(g_a, g_b))U(e_a - g_a, e_b - g_b)
\]

(3)

An increase in one side’s guns increases the share of total utility received but decreases the production of consumables, fish in the case of \( a \) and corn in \( b \)'s case. This tradeoff appears when we take the partial derivative of each side’s payoff with respect to own guns:

\[
\frac{\partial V^a(g_a, g_b)}{\partial g_a} = \frac{\partial p(g_a, g_b)}{\partial g_a} U(e_a - g_a, e_b - g_b) - p(g_a, g_b) \frac{\partial U(e_a - g_a, e_b - g_b)}{\partial f}
\]

(4)

\[
\frac{\partial V^b(g_a, g_b)}{\partial g_b} = - \frac{\partial p(g_a, g_b)}{\partial g_b} U(e_a - g_a, e_b - g_b) - (1 - p(g_a, g_b)) \frac{\partial U(e_a - g_a, e_b - g_b)}{\partial c}
\]

(5)

The first term in each of the two derivatives represents the marginal benefit of a small extra unit of guns whereas the second term represents the marginal cost of guns. Note how the second component of the marginal cost of guns is the marginal utility of the good produced by that side. Thus the higher the marginal contribution of one side, the higher is its marginal cost of guns. As

\[\text{\footnotesize \cite[Two functional forms of } p(g_a, g_b) \text{ that are employed in the literature are } \frac{g_a^m}{g_a + g_b} \text{ (} m > 0 \text{) and } \frac{e^{g_a g_b}}{g_a + g_b} \text{ (} k > 0 \text{). The former functional form has been extensively employed in the rent-seeking literature, with Tullock (1980) being the first to use it (with } m = 1 \text{). Hirhsleifer (1989) has explored the properties of both functional forms, whereas Skaperdas (1996) has axiomatized them as well as a wider class of functions.\}\]
we shall see shortly this property has significant implications for the pattern of distribution. A unique Nash equilibrium \((g_a^*, g_b^*)\) can be shown to exist under mild conditions.\(^9\) An interior equilibrium is characterized by setting (4) and (5) equal to 0. By doing that it can be shown that
\[
\frac{\partial p(g_a^*, g_b^*)}{\partial g_a} + \frac{1 - p(g_a^*, g_b^*)}{p(g_a^*, g_b^*)} = \frac{\partial U(e_a - g_a^* - e_b - g_b^*)}{\partial e_a} - \frac{\partial U(e_a - g_a^* - e_b - g_b^*)}{\partial e_b}
\] (6)

Under the same conditions that ensure existence of equilibrium, the left-hand-side of this equation can be shown to be greater than 1 if and only if \(p(g_a^*, g_b^*) < 1/2\) or if and only if \(g_a^* > g_b^*\). Then, say, for \(b\) to be more powerful and receive the larger share of the total pie \((g_a^* < g_b^*)\), by (6) we must have \(\frac{\partial U(e_a - g_a^* - e_b - g_b^*)}{\partial e_a} > \frac{\partial U(e_a - g_a^* - e_b - g_b^*)}{\partial e_b}\), or that \(b\) must be less marginally productive at the equilibrium point. To facilitate comparison with the simple exchange model of the previous section, let \(e_a = e_b = E\). It can then also be shown that \(b\) is more powerful if and only if \(\frac{\partial U(E, E)}{\partial e_b} > \frac{\partial U(E, E)}{\partial e_b}\).\(^10\) Note that this is the exact opposite outcome from the case of completely secure property rights that we discussed earlier. When property is insecure, the side that is more productive has a comparative disadvantage in grabbing and, in equilibrium, it prefers to contribute relatively more to production and relatively less to guns which in turn results in lower welfare than its opponent. The less productive side has a comparative advantage in grabbing as it faces a lower opportunity cost of guns (in terms of useful production) and receives a bigger part of the total pie.

We do not have to go far back in history to find evidence of the relationship between productivity and power. It appears that warriors, knights, lords and generally specialists in violence appeared to have enjoyed higher consumption than the peasants who were the actual producers and over which those specialists ruled.

Of course, the possibly inverse relationship between productivity and power is just a tendency that is not absolute. Someone who is better compensated could have the absolute advantage in production as well. But allowing for appropriation casts serious doubt on the presumption that those who are better compensated are also necessarily more productive, a presumption that appears widespread in empirical assessments of relative worth.

Moreover, regardless of absolute advantage, the dynamic incentives created by the possible static disadvantage that higher productivity confers can be seemingly perverse. As Gonzalez (2005) shows, even superior technologies that available at zero cost could be easily rejected in favor of inferior technologies that

\(^9\)For existence, it is sufficient that the contest success function \(p(\cdot, \cdot)\) is not too convex in its first argument \((\frac{\partial^2 p(g_R, g_X)}{\partial g_R^2} < \frac{\partial p(g_R, g_X)}{\partial g_R})\). For uniqueness, it is sufficient that \(p(g_R, g_X) = \frac{f(g_R)}{f(g_R) + f(g_X)}\) for some positive and increasing function \(f(\cdot)\). Proofs can be found in Skaperdas and Syropoulos (1997).

\(^10\)For the proof, see Skaperdas (1992). For additional comparative static results of a more general model, see Skaperdas and Syropoulos (1997).
would not provide the strategic disadvantage of the superior technologies. The
water mill for example had been used by the first century AD in the Roman
world but was not generally adopted until the eleventh century. Similar fates
had befallen numerous other innovations from the classical world as well as
China (see Baumol, 1990, for examples and arguments).

Another obvious difference from the received economic model of exchange
concerns the costs of arming and conflict themselves. These costs can be
both static and dynamic. In growth models that allow for appropriation, either
as non-durable output (Grossman and Kim, 1996, Mehlum et. al., 2000) or
as durable non-productive 'enforcive' capital (Lee and Skaperdas, 1998), its
growth-stunting effects become compounded over time. If we were to briefly
reflect on the types of capital and large-scale organizations that most human
societies had created up to about two centuries ago, we can easily see that it had
been heavily weighed towards the appropriative type; protective walls, castles
and moats, elaborate siege machines. No civilian equivalent could approach the
organizational and logistical sophistication of many armies.

Up to this point we have maintained that appropriative expenditures and
other associated costs are primarily due to arming. There are however numerous
other forms of appropriative activities that are important and are very diffe-
rent from arming. Whether private or public, almost all organizations are not
organized as markets but as bureaucracies. At least some activities within bu-
reaucracies can be considered to be influence activities which have been modelled
in a broadly similar fashion to the model described above (see, e.g., Milgrom,
1988, or Mueller and Warneryd, 2001). The problem of the conflict between
shareholders and managers is of course very old and at least one part of Rus-
sia’s dismal economic performance during the 1990s, where asset-stripping and
outright stealing of productive assets in the face of weak legislation and en-
forcement have been rampant. Other activities that can be, at least partly,
considered appropriative include litigation expenditures (Farmer and Pecorino,
1999, Hirshleifer and Osborne, 2001) and of course lobbying, 'corruption,' and
rent seeking.

How much of such activities can be considered unproductive or non-productive
and therefore in some need of control and governance is not a priori clear. How-
ever, the point is not where precisely to draw the line but the need to look more
closely to the vast world of non-market activities; to begin recognizing that the
governance of those activities takes a significant portion of human resources; and
that we cannot keep assuming that all these activities are simply deviations or
distortions of an ideal world of costless market interactions in which everybody
behaves as a saint, except when they need to haggle over price.

I have not distinguished here the conditions under which actual conflict occurs versus those
that settlement under the threat of conflict takes place. Incomplete information is obviously
one possible reason for parties engaging in actual conflict despite its additional costs (for formal
models on this point, see Brito and Intriligator, 1985, and Bester and Warneryd, 2000). Actual
conflict can also occur without incomplete information because of the compounding rewards
to the winner of a conflict, a point that we will discuss in the next section.
3 Exchange and enforcement costs

In introducing appropriation in the previous section, we did not allow for the possibility that one or both sides might altogether opt out of the arrangement in which their production is vulnerable to the other side. One possibility is that they do not produce any fish or corn. Instead, they could produce another good (leisure, for example) that is not appropriable by the other side but also presumably provides lower utility. Yet another possibility would be for each side to have the ability to consume its endowment of either fish or corn as long as it does not open itself to attack by the other side and does not claim the other side’s endowment. Although in both cases the cost of arming would be avoided, there would be welfare costs due to the absence of exchange and possible lack of specialization. To clarify what may occur under such conditions, consider the case whereby each side can safely consume its own endowment with the following sequence of decisions:

1. A and B decide whether to consume their respective endowments or open themselves to conflict or exchange. If either side chooses to consume its endowment, then the two sides receive utilities of \( U(e_a, 0) \) and \( U(0, e_b) \).

2. If both A and B decide to open themselves to conflict or exchange, they make choices between production and appropriation given the constraints in (1). The equilibrium \((g_a^*, g_b^*)\) yields payoffs that can be interpreted as being either the outcome of probabilistic conflict \([p(g_a^*, g_b^*)U(e_a - g_a^*, e_b - g_b^*)] \) for A and \((1 - p(g_a^*, g_b^*))U(e_a - g_a^*, e_b - g_b^*)\) for B or one whereby the two goods are divided under the threat of conflict in accordance with the winning probabilities \([U(p(g_a^*, g_b^*)/(e_a - g_a^*), (1 - p(g_a^*, g_b^*))/(e_b - g_b^*))] \) for A and \([U((1 - p(g_a^*, g_b^*)/(e_a - g_a^*), (1 - p(g_a^*, g_b^*))/(e_b - g_b^*))] \) for B.

In this second case, A exchanges \((1 - p(g_a^*, g_b^*))/(e_a - g_a^*)\) of her fish for a \(p(g_a^*, g_b^*)/(e_b - g_b^*)\) of B’s corn. That is, the linear homogeneity of the utility function allows for only one possible exchange ratio of the two goods. Note how, expressed in this more familiar to economists term, the exchange ratio or price depends not only on the endowments but also in a major way on guns, both through their effect on power and their effect on shrinking of resources that are available for fish and corn. As we have seen from the analysis in the previous section, the valuation of resource or productivity affects the price of fish for coconuts but it does it through guns and in a seemingly counterintuitive

12The model of the previous section essentially assumes complete specialization in production. That specialization could be derived from the Ricardian model of trade whereby the two individuals can produce both goods but they endogenously choose to specialize, one in the production of fish and the other in the production of corn.

13For example, each side could go into the "woods" where it cannot be located by the other.

14With destruction due to conflict, risk aversion, and other reasons (see Garfinkel and Skaperdas, 2006 for an overview), there would normally exist other feasible exchange ratios that would be preferable to conflict. I will examine a setting that allows for a range of outcomes in the next section.
fashion, with lower marginal valuation for one’s own endowment leading to a higher price of the good supplied.

Given the possibilities outlined, when would the two sides be expected to engage in insecure exchange and when would they be autarkic? Note that if one side is autarkic, then it is a best response to be autarkic as well. That is, autarky is always a Nash equilibrium. The more interesting question is when insecure exchange is an equilibrium. That is the case only if both sides prefer insecure exchange to autarky, or when:

\[
U(p(g_a^*, g_b^*)(e_a - g_a^*), p(g_a^*, g_b^*)(e_b - g_b^*)) \geq U(e_a, 0) \quad (7)
\]

and

\[
U((1 - p(g_a^*, g_b^*))(e_a - g_a^*), (1 - p(g_a^*, g_b^*))(e_b - g_b^*)) \geq U(0, e_b) \quad (8)
\]

- Enforcement costs can foreclose exchange
- The more effective appropriation is, the more likely autarky is
- The more productive side has more of an incentive to refrain from exchange
- Complementarity between trading and fighting (Vikings, Russians, Genovese, Venetians, English and Dutch East India Companies, Admiral Ho’s expeditions)
- Home-market bias

4 Enforcement costs as a function of norms and governance

We have seen that military expenditures differ widely across countries. The same is true in terms of crime rates, rates of incarceration, and the costs associated with both. However, the relationship between security, the public good that military expenditures and anti-crime spending are considered to buy, and the expenditures themselves can be hardly related. In a "Nirvana" or a "cross-my-heart" society (Schelling, 1960), where crossing one’s heart implies perfect commitment, one can have perfect security without incurring any enforcement costs. Such a level of security would be difficult to achieve in a Hobbesian polity regardless of expenditures. These expenditures would be included in the measured GDP of the Hobbesian polity, which could well be higher than the measured GDP of the "cross-my-heart" society despite the latter's much higher security and possibly higher overall welfare. Actual economies and societies fall in between such two extremes, yet the variation in enforcement costs and
security expenditures can nevertheless vary widely. In this section, I will discuss some of the determinants of differential security costs using a very simple model.

Consider the two parties $A$ and $B$ to have total (gross) income $Y$. Suppose $A$ has secure possession of $\sigma_a$ portion of that income whereas $B$’s secure share is $\sigma_b$. Thus, a share $\sigma \equiv \sigma_a + \sigma_b \in [0, 1]$ of total income is secure. If the parties are within the same country, the security of that income can be considered to be guaranteed by the state. If the parties are located in different countries or if they countries themselves, security could emanate from practically enforceable international law, the international collective security arrangements that have prevailed in the post-war period, or through bilateral and multilateral agreements. We can think of that security as being due to "governance."15

The remainder insecure income, $(1 - \sigma)Y$, is contestable by the two parties through arming. However, contrary to our approach up to this point whereby fighting and settlement under the threat of fighting lead to the same expected payoffs, we consider fighting and settlement to lead to different outcomes. In particular, we consider the case in which fighting leads to the destruction of some of the insecure income so that only $\phi(1 - \sigma)Y$ ($\phi \in (0, 1)$) is left to the winner of fighting. To be clear, we consider the following sequence of moves:

1. $A$ and $B$ choose costly levels of arming, $g_a$ and $g_b$.

2. Each side makes a choice of whether to fight or to divide the contested income according to a given division rule $v^\beta(g_a, g_b)$ (to be specified below), where $v^\beta(g_a, g_b)$ is the share of insecure income received by $A$ and $1 - v^\beta(g_a, g_b)$ is the share received by $B$. If either side chooses to fight, the two sides fight with the following expected incomes:

$$y^f_a(g_a, g_b) = \sigma_a Y + \frac{g_a}{g_a + g_b} \phi(1 - \sigma)Y - g_a$$

$$y^f_b(g_a, g_b) = \sigma_b Y + \frac{g_b}{g_a + g_b} \phi(1 - \sigma)Y - g_b$$

3. If both sides choose to settle, then their incomes are the following:

$$y^\beta_a(g_a, g_b) = \sigma_a Y + v^\beta(g_a, g_b)(1 - \sigma)Y - g_a \quad (9)$$

$$y^\beta_b(g_a, g_b) = \sigma_b Y + (1 - v^\beta(g_a, g_b))(1 - \sigma)Y - g_b \quad (10)$$

Please note that in place of the general contest success function $p(g_a, g_b)$ we have used the specific functional form $\frac{g_a}{g_a + g_b}$ for party $A$’s probability of winning. Given the settlement incomes in stage 3 and the conflict expected incomes described in stage 2, in stage 2 party $A$ will choose to settle if and only if

---

15 We can think of governance as encompassing both political institutions and arrangements as well as conventions or norms about property that may not be supported by particular institutions.
and, similarly, party $B$ will choose to settle if and only if

$$(1 - v^\beta(g_a, g_b)) \geq \frac{g_b}{g_a + g_b} \phi$$

Because $\phi < 1$, for any given choice of guns $(g_a, g_b)$, there is a range of possible division rules that satisfy both (11) and (12). We shall consider only such rules that always yield settlement as part of any subgame perfect equilibrium and for any combination of guns $(g_a, g_b)$ that might be chosen in stage 1. Moreover, we consider the following class of rules parametrized by $\beta \in [0, 1]$:

$$v^\beta(g_a, g_b) = \beta \frac{g_a}{g_a + g_b} + (1 - \beta) \frac{1}{2}$$

This class of rules includes the following three possibilities:

a. ($\beta = 0$) When the insecure income is divided in half regardless of each side’s choice of guns (this is an example of a "cross-my-heart" society).

b. ($\beta = \phi$) When the insecure income is divided according to any symmetric axiomating bargaining solution (including the Nash and Kalai-Smorodinsky solutions) where the disagreement payoffs are those under fighting described in stage.

c. ($\beta = 1$) When the insecure income is divided according to the probability of winning ($\frac{g_a}{g_a + g_b}$ for $A$ and $\frac{g_b}{g_a + g_b}$ for $B$).

The settlement incomes in (9) and (10) along with a specific rule in (13) constitute a well-defined game. The Nash equilibrium choices of guns, denoted by $(g_a^\beta, g_b^\beta)$, are the following:

$$g_a^\beta = g_b^\beta \equiv g^\beta = \frac{\beta(1 - \sigma)Y}{4}$$

The corresponding equilibrium incomes are the equal to:

$$y_i^\beta(g^\beta, g^\beta) = \sigma_i Y + \frac{2 - \beta}{4}(1 - \sigma)Y \quad i = A, B$$

Note how both gun choices and equilibrium incomes depend on the security or governance parameter $\sigma$ and on the rule of division or "norm" parameter $\beta$. If either all property is secure ($\sigma = 1$) or guns play no role in dividing any surplus ($\beta = 0$), no guns are chosen and incomes are maximal. As property becomes more insecure ($\sigma$ becoming lower) or as more weight is given to the disagreement point in bargaining ($\beta$ is rising), more resources are expended on guns and less income is left for consumption or other purposes.

Thus, we can see how enforcement costs and incomes can vary widely across different jurisdictions depending on the governance and norms that determine how parties in actual or potential conflict interact. Different levels of security costs are consistent with widely different levels of actual security and incomes.

16
5 Trade and conflict

Second-best explanations of seemingly inefficient policies:
- wage subsidies (Grossman, 1995, Zak, 1995)
- land reform (Grossman, 1994)
- generic interventions (Dal Bo and Dal Bo, 2004)

- Security externality of trade; liberalism vs. realism. Is China a "strategic partner" or a "strategic rival?"
- distortion of comparative advantage
- enforcement costs and the natural resource curve


6 On proprietary governance

[The following two sections are (temporarily) borrowed from Skaperdas (2003). I expect the final form of these two sections to include the models that back up some of the arguments and to be substantially different in other ways.]

Olson (1991) and somewhat more emphatically McGuire and Olson (1996) have argued that a "stationary bandit," a king or lord who has a reasonable expectation of maintaining his position for some time, can actually have the incentives to provide a measure of good governance.\footnote{A number of articles by economists have examined the problem during the past decade or so. To my knowledge, Findlay (1990) was the first to specify a model of the autocratic state within an optimizing framework. Besides McGuire and Olson (1996), others include Grossman and Noh (1994), Hirshleifer (1995), Marcouiller and Young (1995), Skaperdas and Syropoulos (1995), Robinson (1997), Konrad (1999), Konrad and Skaperdas (1999), and Moselle and Polak (2001). Wintrobe (1998) has engaged in an in-depth examination of dictatorships, as he considers the many different control problems that dictatorships typically face. Usher (1989) has developed an elaborate model of anarchy out of which autocracies may emerge.}

The stationary bandit, as the proprietor of the state, provides protection against bandits and robbers using a more efficient technology of protection that can be provided privately by each individual producer.\footnote{McGuire and Olson (1996), as well as Findlay (1990) and others, model the services provided by the state as an ordinary public good, without any explicit reference to the provision of security. The interpretation discussed here follows that of Konrad and Skaperdas (1999).} Because collective protection can be provided more efficiently and fewer resources are needed to provide the same level of protection as under a hypothetical anarchy, output should in principle be higher under autocracy than under anarchy. That also implies that more security can be bought with a smaller fraction of the population resorting to banditry and robbery. Higher security can in turn induce the ruler to provide the more traditional infrastructural public goods and stimulate trade and economic development. With a longer time horizon, the profit-maximizing proprietor could lower tribute so that he can stimulate these economic forces even further.

\footnote{\textsuperscript{16}}
What is a necessary condition, however, for a profit-maximizing ruler to follow non-extortionary taxation and growth-promoting expenditures on public goods is a high degree of certainty that he will be around in the future to reap the rewards of such policies. Since the internal and external challengers to the power and profits of autocrats typically abound, their position can be precarious. Those who have been in power the longest could even be the most paranoid about the future – as Wintrobe (1998, p.39) argues, paranoia is the characteristic personality trait of dictators. The optimal policy of the ruler could then well be the extraction of maximal revenue for the short term. Because the ruler can have greater extractive powers than simple bandits have or because not enough protection is provided by the ruler, producers could be even worse off than under anarchy. (See Moselle and Polak, 2001, and Konrad and Skaperdas, 1999, for formal models that allow for such possibilities, and Marcouiller and Young, 1995, for a model similar to McGuire and Olson’s but which can also lead to a disastrous ”black-hole-of-graft” outcome.)

The presence of a long horizon that comes from a low uncertainty of future rule by a ruler with an “encompassing interest,” though, is by no means sufficient for following growth-promoting policies. For, as Robinson (1997) has argued, many such policies can be at the expense of autocratic rule in the long run. Promoting trade implies that merchants becomes richer and perhaps ask for more rights and a share of power; expanding education can make more of the population become conscious of its subservient status and demand reforms and a change in the status quo; even building roads can make it easier for rebels to reach the capital and drive out the ruler.\footnote{I cannot resist reproducing the following statement (quoted in Robinson, 1997, p.2) by former President of Zaire Mobuto Sese Seko to President Juvenal Habyarinha of Rwanda: “I told you not to build any roads... Bulding roads never did any good.. I’ve been in power in Zaire for thirty years and I never built one road. Now they are driving down them to get you.” Of course, President Mobuto was following the same policies of the former masters of Congo, the Kings of Belgium and especially King Leopold.} Thus, long-term survival may well be incompatible with providing the infrastructure public goods that are necessary for development. Robinson’s (1997, pp. 23-26) review of the evidence on dictatorships suggests that those with dynastic pretensions and therefore longer horizons have been the most predatory during the twentieth century. Similarly, the dynastic empires of Spain, Russia, or Ancien Regime France were very slow to adopt growth-promoting policies compared to the other more liberal regimes in Europe and, from the eighteenth century onward, compared to the emerging national states.

Overall, then, there is no theoretically or empirically convincing case to be made that a for-profit, proprietary state will necessarily bring an improvement in the material welfare of its subjects. After all, up to less than two centuries ago there were virtually no other types of states and their contribution to material growth had been at best questionable. However, one factor that has been argued to have taken some of the rough edges off autocracies in the West and have very gradually (and, grudgingly, on the part of rulers) led to the developmental policies is competition among such states (e.g., North and Thomas, 1973).
6.1 Competing Autocracies

Extrapolating from competition in ordinary economic markets we could expect that competition in the provision of protection and security would also be beneficial. The typical argument runs as follows: Rulers who maximize the difference between tax revenue and the cost of services provided will offer lower taxes and a higher service level, the more rulers there are around. This is because the customers/subjects will tend to be attracted to the rulers with the best combination of tax rates and services. For this type of competition to work, there are two necessary conditions. First, the movement of subjects across states should be of low enough cost. Second, each ruler can commit to their announced tax rates and service provisions - for, otherwise, subjects who are lured in a state face the threat of expropriation once they have chosen their location and have become producers there. If rulers cannot commit, then taxation is determined by the relative power of the two sides: the brute strength of the ruler versus the tax-resistance capabilities of the subjects. Failure of either condition – mobility of subjects or the ruler’s ability to commit – cannot guarantee that tax competition among autocratic states will bring about the beneficial outcomes of competition expected in ordinary economic markets.

However, in much of history competition among proprietary rulers appears to have been much less like competition among mineral water producers and more akin to competition among mafia lords. Mafiosi compete less on the prices they charge for protection and more through fighting for, and protecting, their turf. Likewise, rulers have typically worried much more about the armies of their competitors across their borders than about how the fiscal policies of their competitors affect the movement of their subjects. Indeed, autocratic states had to devote most of their resources to defending their territories, with the tributary subjects within them, and fighting against other states. Because those resources expended on arming and fighting are kept away from production and consumption, such competition has very different effects from those of price competition. For other things equal, greater competition – in the sense of having a greater number of states – implies that a greater amount of resources is expended on conflict, which can in turn create greater uncertainty for the fate of the rulers themselves and for the production and investment decisions of the subject populations. Such warlord competition can be worse than atomized anarchy and can be characterized as a higher level of organized anarchy. (For a model of this type of competition and its effects, see Konrad and Skaperdas, 1999. In Azam (2002), though warlords are taken to maximize the welfare of their group and not strictly their own take, the effects can be still be pretty dismal.)

Which type of competition has been most important? The former type of economic competition among autocratic rulers is virtually the sole form of competition really considered but has most likely been overrated. If it were the main form of competition among rulers, even in the West, the world would have developed materially a long time ago. Autocratic rulers can behave differently, though, when they do not face just other autocratic rulers but are under the pressure of economic competition from less autocratic regimes. They can then
be forced to provide tax and other privileges. This is the force — the pressure from city states in Italy and the Netherlands, and from England whose rulers had more restrictions in their power — that Tilly (1992) has identified as those that operated in the West and which gradually induced more economic forms of competition. Autocratic rulers, left by themselves, find more profitable to just fight one another for territory and the tributary subjects that come with it.

Even today, this fighting-for-rents competition is not confined to mafias and gangs. Former President Mobutu Sese Seko certainly was not afraid that his subjects would flee to the greener pastures of other states, although some of them undoubtedly did, and policies of his successors do not appear any different. If anything, from Colombia to many other areas of Africa, to Afghanistan, and many post-Soviet republics, that competition for rents by rulers threatens to become even more important in the medium run.

Overall, though autocratic rule can increase security and help provide other public goods, it often recreates the problems of conflict in anarchy at a higher and more organized level. Autocrats can extract more efficiently from producers than simple bandits can and fighting among such rulers moves the problem of restraining self-interest from individuals to organizations and groups. The political experimentation of the past two centuries, though rather new to assess especially in terms of long-term viability, appears to have been effective in providing at least some answers to the fundamental problem of governance.

7 Modern Governance

Over the past two centuries the tremendous expansion of markets has been primarily of the variety that Olson (2000, Chapter 10) has labelled socially contrived markets (as opposed to self-enforcing ones). In these markets, individual participants face potential enforcement problems and other prerequisites that are much more complex than those faced by our example of Robinson and Xena. Take for instance the market for real-estate mortgages. To begin with, the owner of the land and other structures needs to have clear title, something that requires well-defined laws, courts that will enforce them, land registries and other government agencies that oversee zoning and related land regulations, reliable insurance that will cover many contingencies, and every step along the way has to be free of corruption. These attributes might appear to Western eyes easy to satisfy, but they are expensive to set up and difficult to institute in practice. For example, in Russia only recently legislation was voted on the private ownership of land in cities and still no such laws exist for land in rural areas. Clear title is just a prerequisite. The obligations of the lender and borrower, bankruptcy laws and their enforcement, various asymmetries of information are typically even more complex than clarity of title. To have the secondary mortgage market that exists in the United States, another set of complex conditions needs to be satisfied.

Underpinning all the above is a very high degree of confidence on the part of all market participants that none of the contractual terms, the basic laws,
and their enforcement will change during the life of the loan. That is, market participants need to have high confidence that whoever is in power cannot change much that concerns them. It is difficult to see how an autocrat with few restraints could inspire enough confidence so that markets such as today’s mortgage markets could evolve.

In the West, modern governance evolved out of Absolutism, with a patchwork of restraints, piecemeal extensions of the franchise and other rights, and civil service reorganizations gradually and haltingly introduced. Its main characteristics include checks and balances, separation of powers, formal representation, bureaucratic form of organization, as well as the loyalty of the citizens of national states. I will next argue that these characteristics can, at least partly, be seen as ways of restraining the dark side of self-interest of individuals, organizations, and rulers. My presentation will necessarily be selective, tentative, and speculative at times since economists have done so little work in the area. It therefore also represents somewhat of an agenda for future research.

7.1 Representation, Checks and Balances

Representative government and checks and balances have often began with restraints on the power of rulers that have come about after protracted civil wars. According to North and Weingast (1989) it took almost the whole seventeenth century in England for the Parliament (consisting of nobles) to develop just the beginnings of an effective and lasting check on the powers of the Crown. This check on the power of the Crown and transfer of conflicts from the battlefield to the political and judicial arenas were according to North and Weingast critical for the subsequent developments in England and in the wider area of Northwestern Europe. However, the process of conflict and settlement that took place in seventeenth century England was by no means unique in Europe (or beyond it), and it took various other forms. Earlier, for example, in twelfth century Genoa, after decades of unresolved civil wars the feuding clans agreed on the institution of the *podesta*, an outsider noble who served for a limited term of one year as administrator and judge but who had enforcement powers limited enough to safeguard against takeover in alliance with one of the clans (See Greif, 1998). Other Italian cities in late Medieval times developed locally adapted institutions of conflict management that were part of the institutional stock of knowledge that could be used in the subsequent centuries.

The English Crown did not cede some of its power out of the goodness of their Kings’ hearts. Many of the developments in modern governance over the past two centuries that have benefited wider segments of the population – the extension of the democratic franchise, land reforms, labor legislation, welfare programs – could be interpreted to have emerged under pressure as conflict-alleviating devices. Land reform can be a rational response of landowners who can be better off by giving up some of their land which in turn induces considerably less conflict and banditry (Horowitz, 1993, Grossman, 1994). Employment subsidies can similarly be instruments of conflict resolution (Zak, 1995, Grossman, 1995). Generically, Rajan and Zingales (2000) have shown that in
variations of the basic model of section 3 one side can bring about a Pareto improvement by voluntarily transferring ex ante (that is, before the choices of guns are made) some of its initial resources to the other side. However, the range of parameter values over which such ex ante transfers are Pareto-improving can be narrow or non-existent, and even if they are not the savings from reduced conflict are small compared to the gains that can be brought about by more drastic conflict-reducing measures.

Such a drastic measure is implementing transition to a new regime with rulers that are very different. Rosendorff (2001) argues that the transition from apartheid in South Africa was engineered by a cost-benefit calculation on the part of the white ruling elite there. Rosendorff models apartheid as a conflictual regime with the type of inefficiencies we have examined in this paper, whereas under democracy, as the median voter is poor (and mostly black), there is redistribution from the rich (and mostly white) to the poor. Under circumstances that Rosendorff argues were about those prevailing in South Africa around transition time, the losses that the rich whites would incur under democracy were deemed to be lower than those due to conflict, thereby precipitating transition from apartheid.

Acemoglu and Robinson (2000) make a similar argument about the extension of the democratic franchise in Britain during the nineteenth century, albeit using a dynamic model that takes account of an additional possibility: the fact that the ruling elites could have possibly replicated the economic outcome of democracy through systematic transfers and without extending democracy. However, as Acemoglu and Robinson argue, such transfers are not as credible as those that would come about if the poor were to hold a share of power. That is, extending the democratic franchise represents a level of commitment which, in a changing environment, cannot be credibly replicated by a stream of transfers that are not accompanied by a fundamental change in the rules of the game.

The relative social peace that has followed the extension of the democratic franchise and the variations of the welfare state that are to be found in the developed world appear to have contributed to the political stability that is a prerequisite for modern markets and which, in turn, further fuelled the material growth of the second part of the twentieth century.

7.2 Bureaucracy

New democracies, however, have their own problems of conflict. When a party attains power it often views government as its fiefdom, ready to be exploited just as it was by its former autocratic proprietors. Government positions are staffed by loyal supporters regardless of their qualifications and the positions are used for private gain; government contracts and loans are doled out to individuals and firms within the party’s fold; and the power of government is used to weaken political opponents. All this can be perfectly legal as the legal framework is undeveloped. In the meantime, rent-seeking and corruption take place at all levels and actual, bloody conflict can easily take place between government and opposition. The behavior and economic effects of such governments can be
more rapacious and short-sighted than those of many dictators. And these are not problems confined to banana republics. The now developed national states of the West have also gone through similar phases during their histories (e.g., Johnson and Libecap, 1994, for the corrupt functioning of the United States civil service in the nineteenth century).

The way Western national states have attempted to tackle these problems and continue to do so can be characterized as attempts to limiting the discretion of government officials and agencies. At the higher echelons this is accomplished through systems of checks and balances between the legislative, executive, and judicial branches of government. At the lower levels, discretion is limited through the professionalization of the bureaucracy and the creation of laws, rules, and procedures that attempt to patch the inevitable holes that are created by the evolving economy and society. Bureaucracy becomes professionalized by providing civil servants with security of employment that does not depend on which party is in power, salaries that are adequate to deter corruption for most, and a professional ethic and culture that insulates civil servants for everyday political struggles. Milgrom (1988) and Milgrom and Roberts (1990) have modelled influence activities within organizations and shown how the limiting of discretion, equity in compensation, and other procedures that seem inefficient in a market environment can be efficiency enhancing within organizations. Similarly, using the approach of Warneryd (1998), it can be shown that having more than one level of hierarchy in influence activities and rent-seeking can increase efficiency.  

The ideal disinterested bureaucracy has seldom been attained, of course, and it has many problems of its own, especially when all laws and rules are being applied "by the book." However the relevant comparisons should not be with an unattainable ideal but with the more probable alternative – found in the West’s past and in the present of much of the rest of the world – of arbitrary, amateur, and frequently corrupt political control of the levers of government.

By the end of the nineteenth century, the bureaucratic form of organization became the dominant form of organization for private firms as well. Bureaucratization came hand-in-hand with the rise of the corporation as chronicled in Chandler (1977). Though the recent incomplete-contracts approach to the theory of the firm has emphasized the role of relationship-specific investments (Grossman and Hart, 1986), the control of some appropriative activities through the market may well be more difficult than through hierarchies. For example, much of trade across countries, which involves a greater degree of contractual insecurity than trade within countries, is intrafirm trade.  

\[\textit{Max Weber’s (1978) classic essay on bureaucracy can still be read with profit, whereas Wilson (1989) offers an excellent survey of the functioning of bureaucracies. Arguments complementary to those being made here have also been advanced using a traditional principal-agent approach (see Tirole, 1994, and Dixit, 1996). Using such an approach, multi-tasking and measurement difficulties lead to the adoption of the low-powered incentives that are typically observed inside bureaucracies.}\]

\[\textit{In the late 90s over 50 percent of US and Japanese trade was intrafirm trade (Gilpin, 2001, p.210).}\]
8 Concluding Remarks

- Conflict and appropriation empirically significant
- Incorporation of Conflict and appropriation leads to very different results from those in Nirvana models.
- Nirvana implausible as a guide to understanding the world.
- Governance as a costly economic activity.

REFERENCES


Dal Bo, Ernesto and Pedro Dal Bo (2004), Workers, warriors and criminals: Social conflict in general equilibrium, unpublished manuscript, Haas School of Business, University of California, Berkeley, CA.


Greif, Avner, Bates, Robert, and Singh, Smita, "Organizing Violence: Wealth,


Lee, Jaewoo and Skaperdas, Stergios, ”Workshops or Barracks? Productive versus Enforcive Investment and Economic Performance,” in M.R. Baye (ed.),


Robinson, James, "When is a State Predatory?," December 1997, Working paper.


