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The Security Factor in The Political Economy of Development

Prepared by Martin C. McGuire¹

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Abstract

A country's judiciary, police, and security forces are essential to protect the State from external aggression. By virtue of the State's monopoly of coercion, they maintain a stable legal framework and the safety of persons and property. All these activities enhance a society's productivity, but they also sustain the particular political regime—and its redistributive ethic—in power. They absorb resources, but they also waste them, since security forces tend to be rent-seekers. This paper analyzes both the productive and the unproductive side of security provision and shows that the balance depends on the nature of the political regime.

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Author's E-Mail Address: mcguire@aris.ss.uci.edu

¹Professor of Economics, University of California-Irvine. This paper was written while the author was a Visiting Scholar, International Monetary Fund (July-December 1996), and later Fulbright Research Scholar at Aoyama Gakuin University, Tokyo, Japan (January-March 1997), and Ritsumeikan University, Kyoto, Japan (April-September 1997). An early version of the paper was discussed at a University of Maryland, IRIS Center conference on Security and Economic Development, September 1996. The author thanks Alfredo Cuevas Camarillo, Ke-young Chu, Laszlo Garamfalvi, John Norregaard, Hiroshi Ohta, David W.H. Orsmond, Alberto Ramos, Vito Tanzi, Andrew Wolfe, and Howell Zee for helpful comments, and the IMF and Japan-U.S. Educational Commission (Fulbright Commission) for research support.

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SUMMARY

There is a great need for better understanding of the role of the forces and agencies of justice, security, and police in the political economy of modern societies. Recent times have seen many new symptoms of intergroup conflict increasing the demands on institutions of police, security, and military forces without providing much insight into which are good, bad, or necessary; which are productive, and, more generally, what are the larger social consequences of security agencies. This paper makes a beginning toward answering a part of that need.

First, the paper identifies the *allocative functions* of security-justice-police in any society. Next, the paper shows how these relate to and merge with the *distributive or redistributive functions* of such agencies. Finally, formal models are introduced to show how the balance between these functions depends on the productive capacities of the society, the costs of tax collection, and the political nature of the regime—i. e., where it lies on a spectrum from military dictatorship, to benevolent autocracy, to consensual democracy.

These considerations lead to identification and better understanding of three sources of resource absorption by security elements in any society: (1) resources that support the productive functions and that are necessary, useful, and of service to the entire society; (2) those needed because every regime in power, even the most popular, must have the strength to exact the taxes necessary to provide the forces that keep it from losing power; and (3) those diverted to security-police-justice bureaucracies just because of the coercive power they possess. The paper discusses how this approach helps to distinguish “productive” from “unproductive” security and suggests a further program of research.

I. INTRODUCTION

Whenever the fruits of economic production can be stolen or expropriated, predators will be active unless dissuaded by defensive actions of the producers. That is, every economic asset will be protected or else it will be eroded by theft (Tullock, 1967; and Barzel, 1993). It follows that every producer and every society must choose between direct productive allocation of its resources and reservation of some of those resources to protection of that production. Study of the structure of such allocation between provision and protection has come to be known as the “economics of ongoing conflict” (Hirshleifer, 1987, 1988, 1991, 1994, 1995). From this perspective, resources allocated to defense or to security are indeed themselves no less productive than resources allocated to direct provision, and examples of the blessings of such security at the individual, local, and national levels are commonplace.

Defending persons and property, however, has its dark side. Powers of enforcement, coercion, and punishment are vested in individuals and institutions. Will these be faithful to their purpose or will they be corrupt? The economics of rent seeking (Tullock, 1974) and public choice posit that all individuals and institutions—even those created for the public good—will seek their own benefit. From this perspective, defense and security are extortionary, directly unproductive activities (Bhagwati, 1982). Examples of misery inflicted in the name of “security” are also commonplace.

These two economic models reflect a more general ambivalence between “good cop/bad cop” in the case of communities, or between “good army/bad army” in the case of larger societies, an ambivalence coincident with confusion and even embarrassment in assessing the meaning of “security” in our new post cold war world. For the thaw in the Superpower Standoff, having led to many new symptoms of inter-group conflict, has increased the role of the institutions of police, security, and military forces in many places without providing insight into which are good, bad, or necessary, and some insight would be useful within many governmental and international institutions where policy concerns reflect a mounting dismay over the growth of government-engineered transfers throughout the world (Chu and others, 1995). The implied focus on how to encourage productive and discourage unproductive government programs requires an understanding of when security expenditures are productive and when unproductive, and of how to discourage the latter but not the former. This paper employs both good cop and bad cop models to locate the functions of security activities within a larger framework of institutional incentives for economic development. Institutions are crucial in the success of development² and the security sector a central institution, yet its role in the political economy of growth and development not much examined.

“Security” and “security forces” include three types of agencies usually charged with distinct responsibilities:

²See especially Olson (1996).

- Agencies/forces responsible for external-national security, the defense of the country, and its borders from attack from outside one's boundaries. Protection of the nation from other countries.
- Agencies responsible for internal-national justice-security, protection, maintenance, and stability of internal political structure, and of the state's monopoly use of force. Security of the state from internal threats.
- Agencies responsible for enforcement of internal laws which establish security of persons and property. Protection of the citizens from each other.

By "security" I mean to include the entire domain of external-national forces, internal-local armed forces, state security forces, and justice and police forces in a country including their supporting industrial and institutional structure. It is this complex taken as a whole which administers/embodies the necessary coercive power of the state on which coercion the remainder of the social order depends.

It is natural and tempting to think of these three types of missions and institutions as separate and independent because in a stable modern mostly state they are. Their functions are served by different identifiable agencies,³ and the links seem tenuous between the rule-of-law/legitimacy-of-the-state, and the state's capacity to crush challenges to its power monopoly, and the size and reliability of forces at its disposal.⁴ In unstable evolving countries, however, in the throes of self-formation, of fragmentation, or of conquering others, these functions may be merged and performed by the same agencies.⁵

In the present state of understanding, no unified theory of how all these institutions of coercion fit together seems possible. None is offered here. The links between justice, investigative, and security forces including forces of local police, internal security, and national defense forces remain fuzzy and idiosyncratic. And how these are affected by such factors as legitimacy of regime, homogeneity of population, and traditions of rule of law

³In the United States, the spectrum includes the Defense Department, International Intelligence Agencies, Justice/Treasury Department Agencies, State Armed Force (National Guard) Components, Courts, State/Local Police, Justice Administration, and Enforcement. Just how to assign which agency to which function may be somewhat ambiguous.

⁴History and inertia or stickiness caused by the transactions costs of collective action no doubt filter out much of the imminence of the state's power monopoly in established democracies, but see Dudley (1992), Wintrobe (1990), and references therein.

⁵The degree of co-mingling of these functions and of the agencies which perform them in the former U.S.S.R., South America, Middle East, and Africa varies from case to case.

remain open to speculation.⁶ But, although these agencies and missions may be philosophically and bureaucratically distinct, all of them share certain features in common based on their incentive creating social functions and effects—functions and effects parodied in the “good-cop-bad-cop” example. In essence, those paradigms summarize three incentive effects attributable to security-justice-police forces, whether of local, national, or international orientation. These three incentive effects are:

- All three kinds of security activities enhance the productivity of a society and therefore are themselves “productive.”
- All three support (different aspects of) the particular **redistributive** ruling regime which happens to hold power in their country and, therefore, they sustain the existing redistribution. That is all governance is in some fashion and to some degree redistributive, and security forces, in the broadest sense of the term, are essential to enforcement of redistribution—redistribution within their society.
- All three kinds of security absorb resources themselves: (i) because their productive functions are necessary and useful, and of service to the entire society; (ii) also because every regime in power, even the most popular, must have the strength to exact the taxes necessary to provide the forces which keep it from losing power; and (iii) moreover because of the coercive power they possess, security forces are inherent rent garnishers.

Without any claim for completeness, this paper will identify and discuss briefly three thematic areas for research suggested by the foregoing concept of the incentive effects of security functions. These thematic areas are:

- The allocative role of military/security/police/justice agencies in the political economy of development.
- The military/security/police, rent seeking, and transfers.
- The security factor in the interdependence between economics and politics.

We then develop at greater length a model in which these three incentive effects emerge and their allocative consequences can be deduced. This focused issue will then be: “A Model Which Generates Security Allocations.”

Alternative approaches to and techniques of analysis for these issues are left open in this concept paper. In many cases, the most basic theory has yet to be developed so there is clearly need for conceptual work. Nevertheless, construction of original empirical measures

⁶I thank Alfredo Cuevas Camarillo for focusing my attention on these factors.

relating to military/security and the economy could be of use independently of concept breakthroughs—which argues for basic measure development in this field. Moreover, significant improvements in the data relating to security and the economy have accrued gradually over recent decades, so that econometrics analyses could estimate the effects which we identify. Lastly, the past four decades of comparative development—especially under diverse security regimes and conditions—present a laboratory for case study of differential effects of security on economic performance in instances of successful versus unsuccessful development.

II. SECURITY: ITS ALLOCATIVE, DISTRIBUTIVE, AND POLITICAL ROLES

A. Allocative Role of Security in the Political Economy of Development

Economists now generally agree that successful development depends crucially on establishment of a “social order” and provision of certain productivity inducing public goods.⁷ The most crucial of these public goods is property right definition and security.⁸ The exclusive responsibility for exercising this coercive power of the state rests with its justice-military-security-police complex, which (1) protects the society from foreign conquest; (2) maintains the monopoly power of the existing state to tax and control arms; and (3) protects the persons and properties of the citizens from each other. Without these protections to the social order, vastly less investment, specialization, production, and exchange will arise, and the society remains mired in primitive prelaw economy or warlordism. There are two reasons for this. First, individual resources—in the absence of the public good of property protection—will have to be allocated to personal defense/security (and theft of others’ property) and this reduces the resources available for production.⁹ Second, losses to theft by others reduces the net productivity—net of those losses—of those resources which, in fact, are allocated to production and, therefore, will reduce such allocations. On both counts, the individual and society are poorer, assuming that public provision of security is cheaper and more efficient than piecemeal individualistic provision.

⁷Relevant references include Barro and Sala-i-Martin (1995), Grossman (1991, 1994), McGuire-Olson (1992, 1996), Olson (1982, 1993, 1996), Tullock (1974), Engineer (1989), and Konrad and Skaperdas (1996).

⁸See Hillman and Ursprung (1997), Hirshleifer (1987, 1994), Grossman (1990), Skaperdas (1992), Skaperdas and Syropoulos (1994, 1996), and Thompson (1974, 1979).

⁹See Hirshleifer (1987, 1991) and Skaperdas (1992) for models wherein the net production of Agent i — NP_i , net of his losses to theft—has the form $NP_i = \pi(M_i, M_j)Q(R_i - M_i)$. Here R indicates productive factor resources, M security expenditures, Q a country’s aggregate production function, π the proportion of gross production retained by country I when confronted by the other countries in the international system j .

These ideas about the allocative function of security have direct policy relevance/application. Note first that from the foregoing concept regarding the allocative role of security efforts, a basic principle for determining when or what part of such efforts are **productive** emerges. Military expenditures, for internal police justice and regime support, or external security expenditures, are productive (at the margin) if they lead to greater investment-savings-trade such that the economy produces more (at the margin) than the security effort cost (again at the margin). Take for instance conventional “defense” expenditure—undertaken to reduce the likelihood of attack, invasion, or conquest by a foreign power, or possibly to deter expropriation of foreign assets held abroad, or to insure open access to foreign markets. If such defense efforts are productive, they will cost less than the increase in expected GDP which they induce. The expected marginal benefit increase will be a sum

$$\text{GDP}(\Delta\pi) + \pi(\Delta\text{GDP}) \quad (1)$$

where “ π ” represents likelihood of avoiding loss from being conquered or dominated. A safer nation, one that is less vulnerable to attack, will find that its citizens will invest more (and foreign investors also), specialize more, and risk more commercially thus leading to greater production.¹⁰ This overarching social, allocative role of security efforts defines, in principle,

¹⁰The point of this formula is to identify separately two beneficial effects of increments to security: first, those which reduce the risk of loss, and second, those which add to the base on which the expectation is made. As Hiroshi Ohta has pointed out to me, the costs of the security outlay must be included to give the entire picture. As in the previous footnote: if R = resources; M = security outlays; $\pi(M)$ = likelihood of preserving Q = GDP (or percentage of Q expected to be retained); then net expected product = $Y = E[\text{GDP}] = \pi(M) \cdot Q(R - M)$. Competition from adversaries or possible booty from conquest is left out of the picture. An independent expression represents the positive effect that an increase in Y has on savings, investment, division of labor, specialization, and other productive endeavors requiring that one take the risk of accepting commitments of others. This supply of resources is written, $R = f[Y]$.

Then for any given allocation to security, M^0 , the solution to $Y = \pi(M) \cdot Q(R - M^0)$ together with $R = f(Y)$ gives the expected GNP = Y^0 . The effect of a small increase in M on expected GNP then becomes:

$$\frac{dY}{dM} = \underbrace{Q \frac{\partial \pi}{\partial M}}_{\text{M Benefit of M}} + \underbrace{\pi \frac{\partial Q}{\partial R} \frac{dR}{dM}}_{\text{MC of M}} - \pi \frac{\partial Q}{\partial R}$$

where marginal benefits and costs of a small increase in M are as indicated and

(continued...)

when such efforts are productive.¹¹ Superoptimal allocations to security will be unproductive at the margin—that is insufficiently productive. Excessive allocations may even be positively discouraging to economic advance, and therefore negatively productive, which is to say “destructive.” This will be true if military or police activities actually interfere with conventional production beyond merely reducing it by draining off resources. This definition of being “productive” counts only final products in a cost benefit analysis. It probably understates the productive value of defense, since the pure consumption value of life protection should be added to this production value, and could easily exceed other types of consumption disbenefits (if there are any) which would be offset in part by consumption benefits.

Thus, in the concern over reducing unproductive government outlays, the practical challenge for research is to learn how to use this basic principle to narrow down arbitrary and capricious elements in such assessments. Exact measurement of elasticities of GDP with respect to security or of changes in probabilities of property loss are not very likely nor plausible. So the question becomes whether some partial information can be gathered. A start is to note the various dimensions of security of property, external and internal. Can historical

¹⁰(...continued)

$$\frac{dR}{dM} = \frac{\partial f}{\partial Y} \cdot \frac{Q \cdot [\partial \pi / \partial M] - \pi \cdot [\partial Q / \partial R]}{1 - \pi \cdot [\partial Q / \partial R] \cdot [\partial f / \partial Y]}$$

Equation (1) in the text refers to the “marginal benefit” terms identified in the above expression. The formula may suggest a kind of qualitative symmetry between the gains from protecting oneself and from dominating others, but this is not necessary, since the costs of conquering others may be much different—probably greater—than the costs of defending oneself. This paper assumes a given configuration of nation-states where the balance between self defense and dominance of others is sustained/resolved by military allocation (not actual battles). In the best of all possible utopian worlds no national defense against attack from others would be valued or needed (possibly no internal defense of property rights would be needed either). In fact, this allocative competition between self protection and aggrandizement in an environment of variable returns to scale from nation formation provides a cost-benefit foundation for nation-state formation and equilibrium. See Wittman (1991), Grossman (1994), Brito and Intriligator (1985), Findlay (1996), Friedman (1977), Garfinkel (1990), Grossman and Noh (1990), and McGuire (1974, 1991, 1996).

¹¹So a defense outlay of 5 percent of GDP is more than justified on this criterion if it lowers the chance of total destruction by 5 percent, or of loss of 10 percent of GDP by 50 percent, etc. I say “more than” justified because the lesser chance of loss will probably encourage greater investment, specialization, trade, etc., and lead to greater GNP. This measure of benefit also ignores all direct “consumption” gains from defense, including benefits of lives saved (other than returns due to the productivity of those lives), as well as the entertainment or self-esteem building elements which the citizenry may enjoy.

study, then, or expert opinion, generate some degree of scaling of high, middle, and low payoff? Possibly, individual countries can serve as benchmarks. Consider Israel versus Costa Rica, for instance, for comparisons of the “productivity” of external defense forces. The productivity effects of high degrees of security effort—as well as the redistribution and rent garnishment effect to be considered in upcoming sections of this paper—may be gleaned from professionally experienced comparative analyses between countries once similarly placed but now very different.¹²

Coming to grips with estimates of the constructive, productive role of security expenditures may give rise to a host of intermediate questions, ranging from rather technical input-output relationships with respect to maintenance of property rights, to profoundly cultural issues concerning the role of security forces in establishing the legitimacy of the state,¹³ and the effects of the security regime on the openness or closeness of societies. The interaction between security configurations/programs and the economy is highly complex, and has been subject to intensive but as yet inconclusive study.¹⁴ Such relationships will bear on economic success of countries through their openness to technological change, competition from abroad, trade linkages, and balance between formal and informal—underground—economy (Tanzi, 1983). Similarly, questions of the economic effects of security orientation resonate with concerns over the desirability of a “hard state” which sets lasting “tough” rules and requires the private sector to accommodate them. There, it is argued how critically important are institutional, organization, and government policies (more than factor accumulations, or technology) in determining economic/social success of societies (Olson, 1996).

B. The Military/Security/Police, Rent Seeking, and Transfers

Although wide agreement exists that “unproductive” expenditure is to be avoided, just what expenditures are productive and which unproductive is not clear. Just because some military or security expenditures can be productive—as argued above—does not mean that all of them are. Bribery and corruption are often singled out as paradigms of unproductive

¹²Countries of Northeast Asia and Southeast Asia seem an especially suitable population from which to sample.

¹³I have benefited from helpful conversations with Alfredo Cuevas Camarillo on this point.

¹⁴Beginning with Benoit (1973, 1978), the interactions between military spending and economic growth have been the subject of many studies. Deger (1986), Deger and Smith (1983), and many others, including recently Gupta, Schiff, and Clements (1996), have focused on this issue. Conclusions have varied widely, so widely that some believe no trend will ever be found in the statistics. Some encouragement may be derived from Hartley and Sandler (1995) who report stable results when supply and demand influences of defense outlay are estimated properly.

expenditure.¹⁵ If the above argument as to the **productive** features of security outlay is correct, however, then waste and unproductive security expenditures are quite more involved than the bribery example. The greater complications stem from the fact that almost every government redistributes income/wealth from some groups within its domain to others, and implicitly this redistribution is only accomplished under the coercive shadow of the state's monopoly over force. The redistribution I refer to is not merely discriminatory taxation. Tax discrimination is compatible with distributively neutral public finances as pointed out long ago by Lindahl. I mean, instead, a redistribution which is a net transfer of wealth from those out of favor to those in favor with the ruling government. The forms of such redistributions may take are highly diverse—frequently concealed in complex regulation, transfer, and market intervention mechanisms—but every country has them. Some countries may have such a long history of constitutional legitimacy and allegiance from its citizens that redistribution is achieved with little or no explicit hint of coercion. In these countries, redistribution losses may be regarded by the losers as a lesser price for inclusion in the society lesser than the costs of resistance. In other countries this will not be so and the forces of state security will be central to stability of a regime and enforcement of redistribution. At an extreme, this may reach the point where the army grabs everything it can get. Between these extremes and commingled with them seem to be two different sources of “nonproductivity” or to use Bhagwati's terminology “directly unproductive” uses of resources.¹⁶

First, the army may simply be a cost-effective instrument for enforcing redistribution to the rulers from the ruled. Plantation economies would seem to display this characteristic possibly but not necessarily associated with colonialism. In the general case—aside from plantation economies—it is not clear how to classify such security expenditure. Is it productive or not? It almost surely generates incentives which curtail investment and entrepreneurship and thus is an indirect cause of lowered productivity.¹⁷ Still, redistribution is not inherently evil. If it is “good,” its achievement may entail quite legitimate costs one of which could be disincentives against investment, etc. From this perspective, if redistribution involves taking from some who may resist, and, therefore, inherently entails coercive backup, these costs of enforcement are not “wasted” or “unproductive.” Instead, they are just the required costs of obtaining a good for society. However, on the other hand, an outside neutral judge or assessor may regard a country's actual redistribution practices as unfortunate to unacceptable. Then the power of the state is being used for a “bad.” Should one still classify

¹⁵In fact, a big literature exists within the “rent seeking” framework on economics of corruption and bribery. Yet, at the same time, the property right literature argues convincingly that all property requires protection (Hirshleifer, 1987; and Skaperdas, 1992), and that as stated above if property is not protected, much less will be accumulated, and much less collaborative production will occur.

¹⁶I will use the term “army” to refer, sometimes indiscriminately, to all security forces.

¹⁷This is demonstrated in McGuire and Olson (1992 and 1996).

resources expended on such effort as “productive”? Probably not. But that makes the classification of social expenditures as “productive” on the one hand, and “wasteful” on the other, depending on the possibly transient idiosyncratic judgments of the individual or organization doing the classifying. This arbitrary aspect in designation of “unproductive” outlays seems unavoidable but it should be recognized as arbitrary.

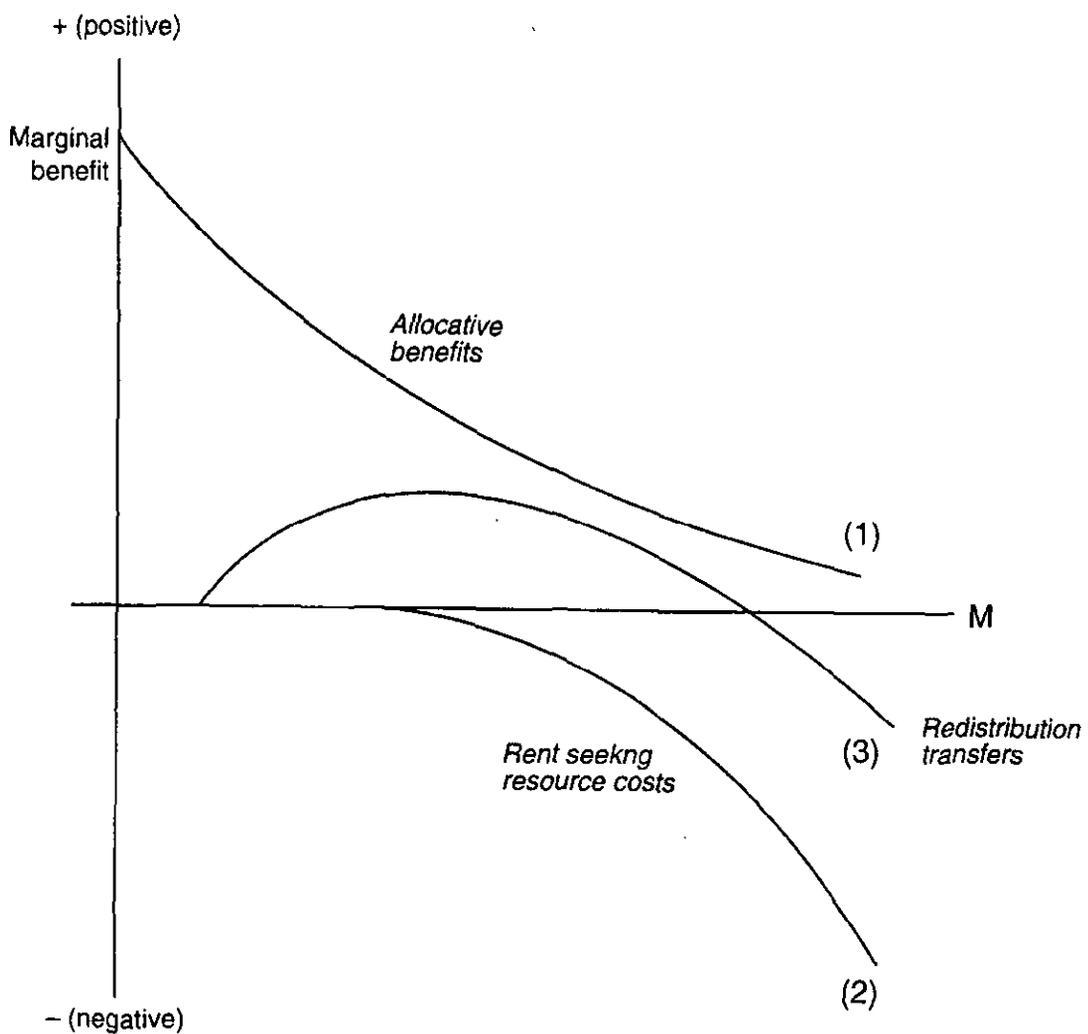
Second, the armed forces may themselves be a sink for redistribution. Of course, they may be both the mechanism for enforcement and the recipient of redistribution, or they may be only the recipient not the enforcer.¹⁸ Examples of the army as a sink for rents are numerous. Phantom soldiers may generate pure surplus for their “commanders.” “Gold plated” weaponry will generate resource expense of negligible value to the society and questionable value even to the military. The army may own enterprises which monopolize production of ordinary goods generating further rents for generals. Special universities, medical corps, transport systems, communication systems, and strategic reserves for “readiness” will cost more, maybe much more than their value. Too many soldiers, bases, and weapons than legitimate purposes will justify may be exacted from the public treasury to justify too many colonels and generals. This type of expenditure would probably count as nonproductive and wasteful in most peoples’ calculus. And, there may be interactions between corruption, redistributions to military leaders, and allocations to unproductive support which deserve special analysis.

We can use this distinction to further clarify the framework for determining when security outlay ceases to be productivity enhancing, in the clear-cut sense of adding to expected GDP by more than their cost. After the point at which such marginal additions to expected GDP become less than the marginal cost of enforcement, net enforcement “benefits” may still be greater than zero if they are associated with **good or desired redistribution**. In this range, *security expenditures are “productive” of social welfare, although not productive of GDP*. Still further, allocations to security, military, internal police, justice forces, etc—that is any allocation not necessary to achievement of one or both of the above two objectives in any particular case at hand—will reflect rent benefits to security forces or to the military itself, but not to society. These latter are definitely not productive. Because any particular portion of military or security expenditures may generate multiple effects, the range over which one effect obtains may overlap the range over which other effects obtain.

Thus—as illustrated by Figure 1—one can think of overlapping ranges of security expenditures where (1) some are most probably supportive of safety, property rights and exchange, and, therefore, are “productive;” (2) some only maintain the rent garnishments of the security forces themselves and are, therefore, definitely “nonproductive” which leaves (3) an intermediate area where security outlays main purpose is to enforce redistribution within the society, and in this middle region they are productive or not depending on one’s evaluation of the desirability of the redistribution. The figure shows a case where the redistribution within the society which security outlays back up is according to prevailing

¹⁸As in a society which lavishes unnecessary superfluous resources on its idle armies.

Figure 1. Example of Marginal Social Benefits from Security Outlays



social judgments “good,” and, therefore, the expenditures associated with enforcing this redistribution have positive offsetting social benefits. The rent garnishments—curve 3—are shown as socially negative, although from the point of view of the security forces themselves these rents are positive. Aggregate marginal social benefits from M can be obtained by adding the curves vertically. The total social benefit at any level of M then will be the **sum of areas** under the individual marginal curves—a negative sign being attached to the negative area below the X axis.

Practically speaking, the crucial issue becomes how can one distinguish what fraction is a cost of providing a service, and what an unwarranted and unearned transfer? More fundamentally what determines this distinction and division? What are the economic, social, historical, cultural forces and institutions which effectively determine this division. Expert opinion on the composition, supply, and management of justice, military, and police forces is likely to be the best source of an answer to such questions—although itself not immune from prejudice and self-service. Provisional results could be obtained by comparisons between countries of similar geography, population, size, and other relevant characteristics.

C. The Security Factor in the Interdependence Between Economics and Politics

By its choice of governance,¹⁹ every Society will decide how much to invest in itself and how much to redistribute. Investment includes, most importantly, provision of crucial overhead “public goods” that is public factor inputs without which private investment, risk taking, specialization, and exchange will not occur or will occur if at all in greatly diminished amount (see Barro, 1990; and McGuire and Olson, 1996). Redistribution includes both the amount redistributed, the identity of gainers and losers, the form of redistribution, and the processes by which redistribution is decided. We have already argued that three modern developments in economics are crucial to any analysis of the question of when the security expenditures of government are productive and when not. These three²⁰ are: (1) the positive economics of rent seeking behavior; (2) economics of property definition/protection and ongoing conflict; and (3) positive theory of redistribution as a political-economic process.²¹ The idea, however, that allocations to security expenditure operate through these three

¹⁹This is speaking metaphorically, assuming one can treat the “society” as a unit and that the outcome of complex political economic processes can be described as a choice.

²⁰Significant references include Barro and Sala-i-Martin (1995), Findlay (1996), Grossman (1991), Hillman and Ursprung (1997), Hirshleifer (1995), Olson (1993), Skaperdas (1992), Thompson (1974, 1979), Tullock (1974), and Wintrobe (1990).

²¹There are a few important economic articles which address the positive economics of income redistribution. None, however, addresses the question of how the power to redistribute is obtained by the beneficiaries, when redistribution proceeds beyond the donors’ desired amounts.

channels has more far reaching implications for the connections between security and development that go beyond the identification/measurement of productive expenditures.

The combination of these elements suggests a structure for how economic and political developments interact. Operating through the above three channels, the security factor **endogenizes the choice of governance**, and ultimately can explain how it is that military and security forces can range in function over the domain of “roving bandits,” to “repository of national identity,” including intermediate locations such as “vanguard of the people,” “backstop of the monarchy,” “gang of warlords,” “lackeys of arms monopolists,” “mafia enforcers,” and “plantation security.” Thus conceived, the political economy of security has broad ramifications for foreign assistance (or equivalent interventions), and indeed foreign and international policies of all types in developing country situations.

Although economic theories of government behavior are many, positive explanations of how governments which redistribute come into being and sustain themselves are new to receive much attention. In the realm of the former, one must include the literature on how economic policy depends upon the set of agents in power—for example, the median voter, interest groups, dictators, etc. And recently, economists have proposed economic models to determine of who comprises the set of rulers.²² As an element in such models, several have suggested that “suppression” or “repression” of dissidence is an important factor in the durability and success of regimes (Palda, 1993; Wintrobe, 1990; Schnytzer, 1994; and Brezis and Schnytzer, 1996).

And durability of regime is crucial to understand the incentives rulers have for self control, and avoidance of confiscation of those assets under their control suitable to be liquidated.²³ Convergence of these papers implies as an important area for study, the question of how security allocations influence the identity and longevity of ruling groups. Although “suppression” may be a slippery concept, it seems clear that hard line dictators and strong men can and do divert resources away from growth and development inducing activity (sometimes resources which have been granted by aid giving or regulatory agencies) into activities which

²²For example, Hillman and Ursprung (1997), where the ruling class or government is considered a Buchanan-club (Buchanan, 1965) and entry is determined by who can bribe his way in.

²³A transient ruler will confiscate everything which has a greater immediate salvage value than the present value of its net future returns. If a ruler knows his regime’s days are numbered, and, therefore, the present value of returns he can expect to acquire are truncated, he will tend to sell capital assets and pocket the price received much more flagrantly than a ruler who expects long tenure (see Olson, 1993).

maintain their dominion. Because of fungibility and control problems, such diversion will be difficult to detect and difficult to contain.²⁴

The economic analysis of “suppression” is especially relevant considering the dramatic changes in the world’s political economy which recently have enhanced interactions between security and economic factors, because it relates to the connections between internal security and external defense needs of countries. Thus, it has been argued that the increases in numbers of states following on breakup of the U.S.S.R. was due to failures²⁵ of repression while the durability of the regime in China is due to the opposite (Brezis and Schnytzer, 1996).²⁶ Moreover, the causality in this relationship may also function in the opposite direction, in that changes in the composition of states have led, in turn, to critical changes in the demands for and functions of security forces. The utility of understanding the economic consequences of repression in a world of transition is substantial; for example, the increased numbers of nation-states in Europe and greater homogeneity and self-determination of individual units has probably reduced demands for internal security forces. But has the demand for external security simply increased by an equal or greater offsetting amount? It could be conjectured that internal and external security are interdependent; that the balance between allocations to the two depends on characteristics of an individual country and on the entire system of countries as well (how many, how homogeneous, how distant from each other, etc.). Thompson (1974, 1979) suggested international defense against attack and absorption as an economic principle which implies an international system of countries based on a cost/benefit structure in which each mounts sufficient defense to make attack disadvantageous to any aggressor. Thus, an implication of this idea—if it is combined with the notion of a security need to maintain monopoly power of the State—becomes a trade-off between internal and

²⁴Use of aid to prop up unpopular, destructive, or predatory regimes maintained by suppression, corruption, and rent accretion is not uncommon. Still unresolved, and a topic for research focus, is how to craft or target aid and other types of intervention to change the architecture of incentives toward a more benign configuration.

²⁵The term “failure”, it must be emphasized, is used here strictly in a descriptive, positive sense. Obviously, these “failures” were not unwelcome to those under the boot of communist repression.

²⁶This argument holds that the police-military role in the U.S.S.R. was to “suppress” the population so that the State apparatus (and its privileged leadership) could exact discriminatory taxes and work efforts from them. More suppression was needed as information about standards of living and attainable life styles in the West reached increasing numbers of the Soviet population. But this greater suppression was expensive, and in addition to the inherent inefficiency of command economic structure, it detracted from the economy’s ability to satisfy consumer needs. Eventually the economic base was unable to support any sufficient combination of consumer standard of living and police suppression sufficient to maintain the leadership in power.

external security as a crucial element in the politics-development nexus. The trade-off is ultimately conditioned by economic factors, such as, wealth, resources and technology, scale of economies in governance, conquest or defense, and homogeneity of population.

A second major channel for the mutual interdependence between development and security must be how security, police, and justice forces in developing societies influence the ratio of redistribution versus social investment. Although accumulation of all types of capital—both private and social—is acknowledged to be crucial to development, and although, income distribution is presumed to be important to development, the interdependence between these two in the realm of public investment has not been adequately studied nor empirically determined. More germane to this paper is the fact that the positive connections of both redistribution and investment to internal police-court-tax-justice-defense functions have not been thought through. Does the development of security organizations stimulate and support redistribution at the expense of investment, or does it benefit investment and growth to such a degree that more redistribution is sustainable? Where redistribution chokes off growth, the police/security forces which enforce the redistribution may be underwriting their own demise. A country's security forces may be directed toward internal order, or instead toward protection from external aggression by others, or toward enrichment through external aggression; and which orientation obtains will strongly influence a country's incentives toward investment compared to redistribution at home.²⁷

III. A MODEL WHICH GENERATES SECURITY ALLOCATIONS

Now, we want to illustrate the workings of those three functions of security outlay as identified above, and their implications for the organization of the political economy of a country. These again are: (1) the allocative function which supports productivity in the entire economy; (2) the redistribution enforcement function which supports income transfer from powerless to powerful groups; and (3) the opportunistic rent garnishment function by which the security sector absorbs and destroys resources for directly unproductive activity. To do this, we will develop a simple model in which all three are transparent and their impact observable.²⁸ This will be a modification and extension of the McGuire-Olson (1992, 1996) model (M-O) which showed how the character of governance of a society—where on a spectrum between autocracy and consensual democracy it is located—determines its choices of **productivity enhancing** public good investments beneficial to the entire community and **productivity eroding** redistributions beneficial only to those who receive them. In the

²⁷Analysis along these lines would seem especially appropriate for appraisals of the roles of the People's Armed Police (PAP) and the PLA in the next round of political/economic developments in China.

²⁸Distinguishing these effects in applications will require econometric modeling not covered in this paper.

original M-O model no explicit costs of collecting taxes and maintaining the ruling interest in power were considered nor was the need for property right protection as a primary public good (factor input) explicitly modeled. This extension to their model will supply those two deficits. The model I develop to analyze the missing links is static, and, therefore, preliminary to more realistic and elaborate representations where security of property influences savings, investment, migration, and other dynamic factors which in turn influence growth. Still, the problems addressed here have been so little scrutinized that the fundamentals can best be illuminated by comparative statics. Not only is the model to be presented static, it treats countries as atomistic, and individually unable to change the general security environment. Thus by analogy with the price taking behavior assumed in competitive economic analysis, in this model countries are assumed to be “aggression taking.” This rules out collusive oligopolistic behavior such as is the essence of arms races or alliances.²⁹

In addition to including both those neglected effects, we will also extend the range of styles of governance to a government even more successful in its absorption of a country’s resources than the dictator they modeled.

Here, we will allow for an opportunistic security establishment, a self-serving interest group which desires to maximize its own rent/size. The “selfish autocrat” in the M-O model sets taxes to maximize his share of real GDP (potential GDP net of the efficiency losses which distortionary taxation creates). In this paper, we consider the behavior of a “military dictatorship” which rather than considering its size an instrument for obtaining tax share, wants, instead, to maximize its own size as a goal in itself. As we will see, a government with this objective will tax more and allocate still more to security than will a simple autocrat. Thus, our “military dictatorship” model serves to describe the directly unproductive, opportunistic rent garnishment aspects of security activity. These effects will follow from the assumption unlike the original M-O model, that the population of a country resists taxation (actively or passively), and that to impose taxation upon the productive population in the private sector requires resource outlay by the government in the form of controls, monitoring, and security enforcement.

However, the amount of resources required to impose any degree of taxation also depends on the legitimacy or moral authority of the government. Generally the more the government is seen to be legitimate, the less enforcement is required. Many factors will determine legitimacy—for example, the homogeneity and history of the populace. However, here we concentrate on one of these. If the processes by which governance is decided are seen

²⁹Vito Tanzi, Ke-young Chu, and Alfredo Cuevas Camarillo have suggested to me a further source and type of wasteful security expenditures once arms race or oligopolistic interactions are admitted. Externally oriented military efforts which induce military responses from a rival may bring about no improvement in security at all but only divert resources from productive uses—a case of “output diversion.” Internally directed security effort, on the other hand, may generate “output creation” in accordance with the argument of the text.

to be democratic in any majoritarian meaning of the word, then we will say that legitimacy is greater, and less in the way of resources are needed to enforce any tax share. A crucial economic characteristic of the ruling power in any system of governance—as in M-O—is the proportion of private property owned by those who enact taxation. By property ownership we mean to include ownership of all types including human labor and human capital as well as land and tangible capital. This share required to enact taxes will be denoted by the parameter F .³⁰ In order to model and capture the implications of these assumptions, we introduce basic notation as follows:

- $M =$ Police, justice, and security expenditures which are directly related to maintenance and enforcement of basic police and court functions, property right definition and enforcement, rule of law maintenance, tax collection/enforcement, and the government's monopoly of force. Also included in M are internal security, repression of resistance, and external defense. The division between these functions might be expected to depend on the size of M but we will leave these details unspecified.³¹ These expenditures have two effects. They increase the productivity of the society which is to say they have the allocative effects described above. Also, they allow taxes to be collected beyond those necessary for allocative provision of public goods. These further taxes serve redistribution and rent seeking objectives mentioned above. I do not assume that all security expenses are related to tax enforcement, only that a proportion is so related. The price of M in terms of Y is assumed to be unity.
- $G =$ Productivity enhancing public good other than M ; price of G in terms of $Y = 1$.
- $Y =$ $Y(M, G) =$ Potential National Product which uses as inputs both M and G as well as other fixed natural and human

³⁰This paper makes no attempt to model how this variable F —representing the degree of assent necessary to carry out tax/expenditure programs—is determined. Here, it will be treated as a parameter. Actually to call F an index of democracy would be somewhat inaccurate; it is more closely an index of shareholders democracy. Some of the objection is diminished by the fact that we refer to ownership of all productive factors including labor and human capital.

³¹The model could be easily extended to relax this assumption. For example, one way of specifying these details might be to distinguish M_α as the part of M which improves allocative efficiency, from M_β the part of M which is necessary to support taxation. Then $M = M_\beta + M_\alpha$.

resources which are not explicitly identified. The allocative function of M^{32} is captured by its presence as a productive input to Y . Assume both M and G are essential inputs such that $Y(0, G) = Y(G, 0) = 0$. Assume also that $Y_G > 0$, the marginal product of G is positive throughout and diminishing $Y_{GG} < 0$; moreover, we will assume that small to medium doses of security add to productivity $Y_M > 0$ while too much "security" may interfere with productivity so that after some critical value of M the marginal product of M turns negative, $Y_M < 0$, and that this transition is smoothly diminishing $Y_{MM} < 0$.

$m =$ $M/Y(M, G)$ = share of security expenses in national product/income;³³ $dm/dM = [(1/Y) - (MY_M/Y^2)]$.

$F =$ *Ownership Share* of the governing group in the productive property in the economy. A larger value of F indicates a more inclusive economic majority is required to tax and spend.

$t =$ Average = Marginal Income Tax Rate.

The assumption that some given fraction of security expenditure is necessary to support tax collections means that t is a function³⁴ of $m=[M/Y(M, G)]$, that is, $t=t(m)$ —or alternatively $m=m(t)$. And the assumption that F influences the costs of taxation as argued above means that t is a function of F as well. Therefore, we write:

$t =$ $t(m, F)$; $\partial t(m, F)/\partial m \equiv t_m > 0$: an increase in the fractional security outlay supports greater taxation (or greater taxation requires greater enforcement given by $m_t \equiv 1/t_m > 0$). The partial effect of F on t is given by $\partial t(m, F)/\partial F \equiv t_F > 0$: more representative decision processes allow greater tax for the same level of enforcement or suppression; also $t_{mF} > 0$: more representative governance increases the marginal

³²If M_α is broken out as in the previous footnote, then $Y = Y(M_\alpha, G)$.

³³Arguably, the correct formulation is $m = M/r\{t[m]\}Y$. This formulation, however, involves a recursive relation and more complexity than appropriate at this stage of analysis.

³⁴A distinction between $M_\beta + M_\alpha$ would mean that we should write $M_\beta = M_\beta(t)$. This formulation has the advantage of specifically associating M_β with t , but it has the disadvantage that it assumes that the taxes which are needed to pay for M_α do not require enforcement for their collection.

effectiveness of enforcement/suppression.³⁵ Let us call this critical relation $t = t(m, F)$ or equivalently $m = m(t, F)$ the *Tax Enforcement Function*; it captures in a most general way the fact that imposition of a system of taxation system itself requires/absorbs resources. This very general formulation is silent about alternative, and very different, specific forms which this Tax Enforcement Function may take. For instance, resources required for tax enforcement may be negligible to small at low level of tax rates, rising only to significant amounts as taxes approach confiscatory levels. In such case, the degree of solidarity/homogeneity, or the degree of political consensus and legitimacy of government—as proxied by the value of F —may perform the role of a shift parameter to indicate the level of taxes considered acceptable and not requiring significant enforcement outlay.³⁶

$1-r(t) =$ Fractional deadweight loss or excess burden caused by proportional income taxation;³⁷ that is the proportion of Y lost due to bad incentive effects of taxes. It is assumed that this relationship is the same function irrespective of the character of the regime—autocratic, democratic, etc.

$r =$ $r(t)\# =$ Realized fraction of potential product; $r(0) = 1$; $dr/dt \equiv r' < 0$. Actual product, therefore, is $r(t)Y$.

We will now formulate the decision problem for three “pure” benchmark archetypes of governance. Among these three, we desire to compare the levels of security spending, of taxation, and of provision of productivity enhancing public goods by the government.

The first of these archetypes is a unanimous consensual democracy, not a realistic case, but one which will serve as a benchmark for comparison. The main characteristic of the consensual democracy is that **no redistribution takes place**; therefore, the role of security is strictly allocative and strictly productive. In this paradigm, security expenditures will serve only the broad allocative purposes of the society because the distribution of welfare has been agreed on, no taxation for redistribution will be undertaken; it could only impose a cost in the form of efficiency losses $(1 - r)$ with no offsetting benefit. One can think of this society as being characterized by an $F = 1$, wherein no individual is excluded from the politically decisive

³⁵Explicit analysis of the effect of F on $t(m)$ will not be pursued further in this paper.

³⁶Thanks for this insight are due to Vito Tanzi, Ke-young Chu, and Alfredo Cuevas Camarillo.

³⁷Karla Hoff has pointed out that although incentive distorting effects of taxation or regulation will result in a loss of welfare it is not at all necessarily true that incentive distortion effects will cause a reduction in measured GDP. So this assumption must be taken as an approximation or surrogate for welfare losses.

majority. Alternatively, one can think of this society as governed by a benevolent dictator who has solved all distribution issues among his people, and who taxes and spends only for their welfare.

The second form of governance will be an autocracy, or selfish dictatorship, in which an enduring autocrat with monopoly power over taxation, taxes so as to maximize the net transfers he can obtain. Of course, this autocrat will benefit from the allocative, productivity enhancing effects of security, and property right protection which his power provides his country. He will benefit because this security causes his subject to work, save, invest more, and, therefore, to generate a higher GDP which the autocrat in turn can tax.³⁸ Under this autocratic organization, therefore, the purposes of allocation to security are both to increase product and to support redistribution. Moreover, it is assumed here that the autocrat has control over his security forces, including all decisions as to how big, how equipped, and how expensive they are to be. Accordingly, in this case, the army enjoys no independent, rent absorbing benefit. It merely serves the allocative and redistributive purposes of the ruler. For this society $F = 0$, since the autocrat owns no assets directly, only the monopoly power to tax.

The third form of governance is one in which the security forces do have independent power to garnish rents from the society. We will consider the extreme case in which all redistribution goes to the army to be expended on more soldiers. Not only is this a dictatorship, it is a military government which serves its own benefit and to the maximum degree possible uses the resources of society to enlarge and enrich the army. In this archetype, the army imposes taxes at a rate which will maximize its own size, and, therefore, all collections are devoted to security expenditures, except those which increase productivity sufficiently to be worth the ultimate benefit to the army itself. This society is characterized by $F = 0$ also, but it differs from the other two archetypes in that here the costs of M are ignored or counted as zero, because in the calculus of the military dictatorship resources devoted to security are not a cost at all, but rather are a benefit.

We can now proceed to analysis of the implications of the type of regime for the qualitative and quantitative role of security allocations.

Before getting down to specifics, we should emphasize that all three of these societies—in fact, every society imaginable—is governed by the same³⁹ iron law of resource scarcity. That is, all three of these cases are governed by the same possibilities for taxation in the economy. The differences among the three will derive from the objectives of the rulers,

³⁸This effect is formally modeled in M-O.

³⁹We will ignore the differences in incentive and morale between societies organized on such diverse bases as our three paradigms—differences which may shift the entire production function in or out. Incorporating this effect would not circumvent the principle of resource scarcity and constraint.

and, therefore, the uses to which tax revenues are put.⁴⁰ Tax revenues—net of the cost of security outlays, M , and provision of other public goods, G —are written as

$$\text{Net Tax Revenues: } t(m)r[t(m)]Y(M, G) - M - G \quad (2)$$

where again $m = M/Y(M, G)$. This formula indicates that security outlays are necessary for tax collection, that taxes themselves erode productivity, and that the government must pay for both G and M out of its tax revenues.

Examples of the relationship between t and m are shown in Figure 2. Consider curve A first; there for low levels of t no M is required or useful. This does not mean, of course, that M , “security,” is useless in the region of low t . It does rather mean that in this region *the purpose and effect of M is solely allocative*, in the sense that security outlays enhance productivity— $\partial Y(M, G)/\partial M \equiv Y_M > 0$ —while they are neither necessary nor sufficient for the collection of taxes in so far as $m_t \equiv [t_m]^{-1} \equiv [\partial t[\{M/Y(M, G)\}, F]/\partial M]^{-1} = 0$. For a tax enforcement function like curve A, society exhibits such a high degree of voluntary compliance that security-justice-police forces are seen as essentially irrelevant to tax collection except for very high tax rates. For curve A, once a certain positive tax level—shown as t^0 is reached allocations to M both support tax collections and provide allocative benefits via Y_M (if it is in fact the case that $Y_M > 0$).

Curve B shows another case. Here, no taxes could be collected without security enforcement, even though the public goods (public factor inputs) such resources provide are productive, maybe even so highly productive as to be “essential”—essential if $Y(M, G) = Y(0, G) = 0$. So in the case of curve B, as we will explore presently, the society cannot voluntarily support court-security-police-justice outlays even though they are utterly necessary. In this case, the police-army-etc. is not only self supporting in the sense that it indirectly adds to productivity more than it costs to maintain; it is also self-supporting in that it is necessary to collect taxes to bring itself about. Thus, the nature of the tax enforcement function will prove to be of major importance in analyzing the behavior of and indeed the viability of different types of governance.

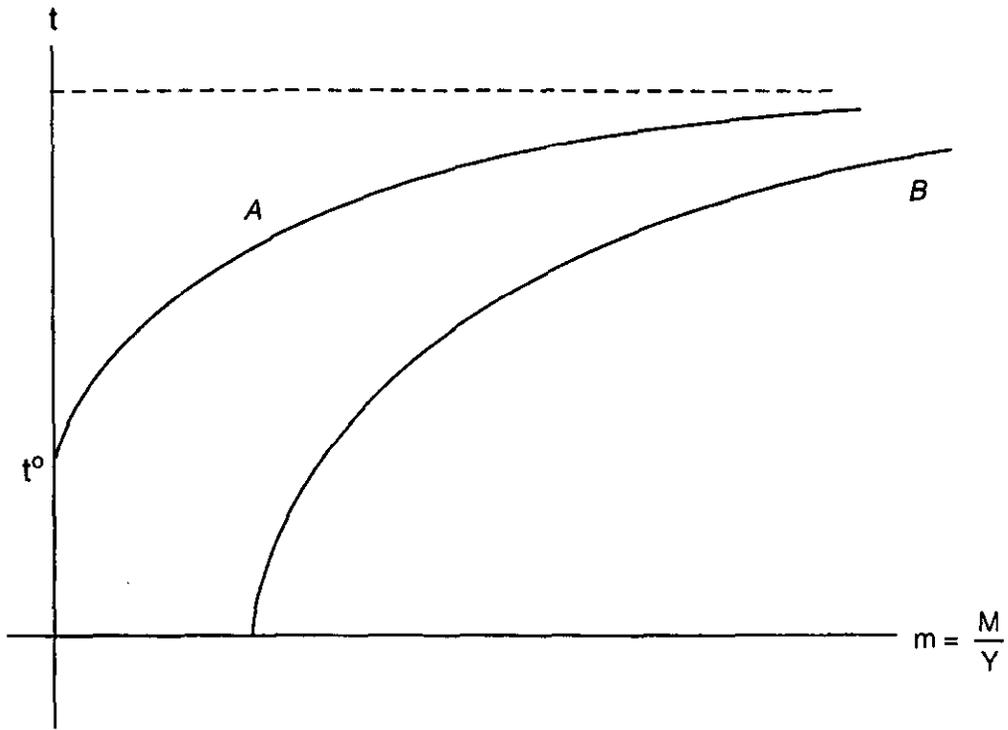
A. Behavior of a Consensual Democracy

The consensual democracy’s consumable product, net of expenses for security and other public goods that is public factor inputs is:

$$rY - G - M \quad (3a)$$

⁴⁰We will not explicitly write $t = t(m, F)$; F will be suppressed in the notation.

Figure 2. The Tax Enforcement Function



or written out more completely:

$$r[t(m)]Y(G, M) - G - M. \quad (3b)$$

Formulas (3a and 3b) reflect an assumption that whenever the consensual democracy levies taxes it also imposes a deadweight loss on itself. That is, we suppose it lacks the degree of coordination, commitment, and enforcement which would be necessary for it to employ efficient lump-sum taxation. Because this democracy has already achieved an optimal income distribution, to repeat, it would gain no benefit by taxing for purposes of redistribution; however, such taxation would produce a deadweight loss; therefore, none will be undertaken. This means that (with $m = M/Y(M, G)$ as above) the consensus democracy will obey the constraint

$$t(m)r[t(m)]Y(G, M) - G - M = 0. \quad (4)$$

This society's allocation problem, therefore, can be formulated:

$$\text{Max}_{M,G} r[t(m)]Y(G, M) - G - M + \lambda \{t(m)r[t(m)]Y(G, M) - G - M\} \quad (5)$$

where $\lambda > 0$. Differentiating (5) with respect to M produces as a first order conditions for this maximization:

$$r't_m + Y_M(r - mt_m r') + \lambda [t_m(r + tr') + Y_M \{rt - mt_m(r + tr')\} - 1] = 1 \quad (6)$$

or for short:

$$r't_m + \lambda [At_m] + Y_M [C + \lambda B] = 1 + \lambda \quad (7)$$

where

$$A = r + tr'; \quad B = rt - Amt_m; \quad C = r - mr't_m. \quad (7a)$$

The complicated marginal influence of M upon t is due to the fact that M influences both Y and the ratio M/Y . In (6) the entire term in square brackets after λ must be positive for the consensus society because it measures the net marginal change in revenues in excess of the costs of raising such revenues which the consensus could exact with a slightly higher tax rate. Moreover, the term $(r - mt_m r') > 0$ because $r' < 0$. Accordingly, we conclude that even a consensus society could conceivably require sufficient enforcement to the point that $Y_M < 0$, that is, to the point that the allocative contribution of M is negative at the margin. This could be true if the effectiveness of the tax collection and enforcement function of m is very low.

Next, differentiating with respect to G yields a first order condition which reflects the interdependencies between m , t , Y , and G :

$$Y_G(r - mt_m r') + \lambda [Y_G \{rt - mt_m(r + tr')\} - 1] = 1 \quad (8)$$

or for short with B and C as defined above

$$Y_G [C + \lambda B] = 1 + \lambda. \quad (9)$$

The consensus democracy—that is essentially a utopian democracy which has no redistribution objective, and is beholden to no special interest or other rent garnishers—will never tax itself so much as to be on the declining portion of the total revenue curve. Therefore, we know that the term $A \equiv (r + tr') > 0$ since this is the slope of the total revenue curve, that is, of “tr.” Combining (7) and (9) gives:

$$Y_M/Y_G = 1 - \{t_m[r' + \lambda(r + r't)]/[1 + \lambda]\}. \quad (10)$$

In the expected case $Y_M > 0$, $Y_G > 0$; but $Y_M/Y_G \stackrel{z}{<} 1$ depending on the level of taxation and on the tax generating effects of security outlays, that is, on $t(m)$. Equation (10) means that the tax collecting function of M causes more to be allocated to security than “pure” allocative, property definition, and protection would require.

B. Behavior of a Permanent and Selfish Autocrat

We now can turn to the behavior of an enduring autocrat or that of his permanent dynasty. We assume that the autocrat’s only source of income is the taxes he exacts from his subject; he owns no factors of production himself and does no work; instead he has the monopoly power to tax. The autocrat desires to maximize the flow of tax revenues to himself. He derives no benefit from his “army” per se (short for his entire security complex which performs all the security functions elaborated in Sections I and II). It is strictly instrumental to his revenue collection⁴¹—instrumental both as enhancing productivity through $Y(M, G)$ and as support tax collection efficiency via $t(m)$. As a benchmark for comparison, suppose initially that it costs nothing to collect taxes. That is consider the popular acclaimed autocrat of the McGuire-Olson model; in this case the autocrat sets a tax rate which simply maximizes his share of the economy’s product. In other words, he would select the value of t , suppose it

⁴¹One can suppose that the military force necessary to keep the autocrat in power when he taxes at rate t is already included in the function $t(m, F)$. The benefit which the autocrat obtains from M is strictly implicit. Similarly, a probabilistic model could generate an expected tax revenue—maximized with respect to m . In this case as well, the Army is not an object utility or benefit directly, merely an instrument for obtaining revenues at a cost.

is t^* , which maximizes $tr(t)$. Moreover, he would provide public good, G , up to the point that $Y_G = 1/t^*r(t^*)$.⁴²

In a more realistic model however, as in the world, tax collection and enforcement of the government's tax monopoly absorbs resources. Our model incorporates this reality; we have assumed that after some threshold level of t , as shown in Figure 2, further taxation requires enforcement resources, M . Consequently in this world the autocrat's objective will be to

$$\text{Max}_{M,G} t(m)r[t(m)]\{Y(G, M)\} - G - M. \quad (11)$$

Expression (11) is almost the same as (4). The consensus society will tax only to spend on G and M so that the expression in (4) represents a constraint—viz $t(m)r[t(m)]\{Y(G, M)\} - G - M = 0$. But the autocrat desires to maximize this net collection of resources so in (11) it is an objective function. This further illustrates that we have chosen the “autocrat” as a pure case of a government which redistributes. An autocrat in this way of thinking really wants only to redistribute (to himself, of course), so we have chosen him to explore the effect that allowance for redistribution has on the derived demand for security. We expect the autocrat to have a greater need for security forces than would a consensus society, since the autocrat wants to redistribute and the consensus does not.

Differentiating (11) with respect to M yields first order conditions to solve the autocrat's problem:

$$t_m r Y [dm/dM] + t_m tr' [dm/dM] + rt Y_M = 1 \quad (12)$$

where

$$[dm/dM] = [(1/Y) - (MY_M/Y^2)] > 0. \quad (13)$$

Another way to write (12) is:

$$t_m(r + tr') + Y_M\{rt - mt_m(r + tr')\} = 1 \quad (14)$$

or for short

$$At_m + BY_M = 1 \quad (15)$$

⁴²For details see M-O.

with A and B as already defined. When the autocrat approves a marginal increase in M, this has two effects on the share of M as a fraction of national product— $m = M/Y(M, G)$ —which in turn influences $t(m)$, which in turn affects his maximizing calculus. On the one hand, increasing M raises m directly and this brings in more revenue, increasing his revenue share by At_m . Therefore, the cost to the autocrat of raising M by one unit is not the \$1 shown on the far right of (12) or (14). Instead, his actual cost is $1 - At_m$. This is the first of the two effects mentioned. Secondly, because M changes Y, and therefore M/Y, it has a second effect operating through $t(m)$; that is, it lowers the share of national product taken into the autocrat's treasury in taxes—lowers it by the amount $-mt_m(r + tr')$. When the economy grows due to the beneficial allocative effect of M the “reach” of the tax collecting and economic regulatory apparatus is reduced and this reduces the effective tax rate $t(m)$. Therefore, to summarize, the surplus maximizing autocrat when comparing his benefits with his costs—not society's benefits and costs—will count as costs $1 - At_m$ and as benefits BY_M . Equation (15) shows this balance. Next differentiating (11) with respect to G gives:

$$Y_G\{rt - mt_m(r + tr')\} = 1 \quad (16)$$

or for short

$$BY_G = 1. \quad (17)$$

Here the coefficients A and B are the same expression (though not the same values) as in (7) and (9).

Now, we can draw certain conclusions about the autocrat's tax and spending behavior. We desire to compare his choice of t with the case when taxation requires no security resources to support it (the M-O model), and to compare his behavior with that of the consensus society.

If maintenance of a regime which can maintain its monopoly of power to tax required no coercion and absorbed no resources, and if tax collection itself required no resource outlays, then the M-O model would apply. This is the happy situation which a “beloved” or “accepted” or “legitimate” (but still selfish) dictator finds himself.⁴³ In this case, we know that the autocrat would never carry taxation beyond the peak of the rt -curve; accordingly, we know that under such an autocracy $(r + tr')$ —which is the expression for the slope of that curve—is zero to positive.

We can use this knowledge of the incentives faced by an accepted autocrat to better understand the behavior of the autocrat who must overcome resistance to his monopoly rule

⁴³Maybe this autocrat's subjects fervently believe in his divine right to tax, or maybe they are sheepish. For whatever reason they do not resist taxation other than via reallocations of resources which bring about the efficiency losses of $1 - r(t)$, in the M-O model.

and must allocate resources, M , to tax collection. Because we assume public goods, G , always generate some productive return, any solution will necessarily entail $Y_G > 0$. Then, it follows from (16) that $\{rt - mt_m(r + tr')\} > 0$ at the optimum and, therefore, that at that optimum $tr(t) > \{rt - mt_m(r + tr')\}$. This means that the positive cost of tax collection, that is, $mt_m(r + tr')$, causes the marginal productivity of public goods, Y_G , at the autocrat's optimum, to be greater than $1/t^*r^*$ (which is the optimizing value of Y_G that would obtain in the absence of tax collection costs). Compared with the M-O model of the accepted popular autocrat who can tax as much as he wishes at no cost at all, in this more realistic model the costs of the autocrat's tax monopoly maintenance plus the costs of his collections enforcement lead him to curtail provision of other public goods as well as to tax less. Expression (14) together with (16) also entails an inverse relation between equilibrium values of t_m and of Y_M . From (16) $\{rt - mt_m(r + tr')\} > 0$. Therefore, if security forces are sufficiently effective at collecting taxes—that is, if t_m in (14) is sufficiently large—it may pay the autocrat to employ them even though they also interfere with productive activity (i.e., past the point where $Y_M < 0$).

From (15) and (17) it follows that:

$$Y_M/Y_G = 1 - t_m(r + r't) < 1 \quad (18)$$

whence $Y_M < Y_G$. That is this autocrat will definitely push provision of M until its marginal productivity is less than that of G —unlike the consensus which may do the opposite. Exactly when more of the public good will be supplied by a consensus democracy than by an autocracy depends on the details of the functions $t(m)$, $r[t(m)]$, $Y(M, G)$, etc., although there is a strong presumption that the autocrat will tax at a higher rate than the democracy, and will provide a lower level of G .⁴⁴

C. Behavior of a Rent Garnishing Military Dictatorship

Our last case is one in which the government essentially serves the security establishment rather than the other way round. Although extreme, it is not impossible that the military is so powerful in its rent-seeking activities, that it generates the maximum possible taxes of which it is capable, and **spends these tax receipts on further security activities**. Assume then that the military controls the government, receives all redistributive transfers, and ploughs these proceeds back into the army which in turn permits greater taxes, etc. It is the equilibrium at which this process ends that we want to examine. In this case the equilibrium condition becomes:

⁴⁴McGuire and Olson show that in the expected case the selfish autocrat will tax more and provide less public good, G , than the Consensus—a conclusion potentially undermined by the addition of m and $t(m)$ in this model.

$$t(m)r[t(m)]Y(M, G) - G - M = 0 \quad (19)$$

or with the variable “m” written out explicitly.

$$M = t[M/Y(M, G)]r\{t[M/Y(M, G)]\}Y(M, G) - G. \quad (20)$$

Under this form of governance, the army uses all resources it obtains from taxation to increase its own size and capability—as in the greedy bureaucrat model of Niskanen. That is, all tax revenues are spent on the army except where public good provision investments can be justified to increase the net tax take even after they have been paid for, and thus indirectly to support the army even further. Of course, some public good investments have payoffs so great that even the most voracious of military dictatorships would endorse them, for these investments will produce in greater GDP far more than their cost and therefore cause a net increase in tax receipts and concomitantly in military outlays. The condition for optimal G derived from maximizing (20) with respect to G gives:

$$Y_G[rt - mt_m(r + tr')] = 1. \quad (21)$$

Because such a rent maximizing captive-of-the-military government will allocate all expenditures possible to M , it may happen that at the rent seeker’s maximum the rt -curve is either rising or falling and, therefore, the expression $(r + tr')$ may be less than or greater than zero.⁴⁵ If $(r + tr') > 0$ and taxes are not pushed as far as the maximum on the rt -curve then $Y_G > 1/rt$ and less G may be provided than under an autocracy. In this case, as (21) indicates, the marginal productivity of the public good, G , is higher. On the other hand, if $(r + tr') < 0$ which means that taxes are so high as to take the society necessarily beyond the autocrat’s maximum then it may be true that the military dictatorship invests more in its economy than does the autocrat. (A conclusive inference is not possible because the value of rt —that is, the share of GDP taken in taxes by the government—is less than its maximum under both forms of governance when taxation is costly.) Therefore, the values of

$$Y_G = 1/[rt - mt_m(r + tr')]$$

cannot be compared definitively as between equation (16) and equation (21).

A compact way to depict the military dictatorship’s equilibrium is shown in Figure 3. Panel **a** shows the production relationship $Y = Y(M, G)$. This is drawn on the assumption that for any given value of $G = G^*$, total output $Y(M, G^*)$ reaches a maximum. This implies that beyond the peak of any one curve too much military intervention/supervision actually reduces

⁴⁵The redistribution maximizing autocrat will stop short of the peak in this tax share schedule, i.e., short of the maximum in rt . He does so because of the costs of tax collection that is the inverse of $t(m)$ or $M(t)$.

Figure 3. Equilibrium Allocations in a Rent Seeking Military Dictatorship

Figure 3a.

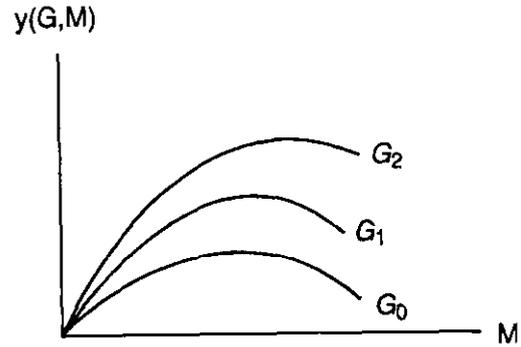
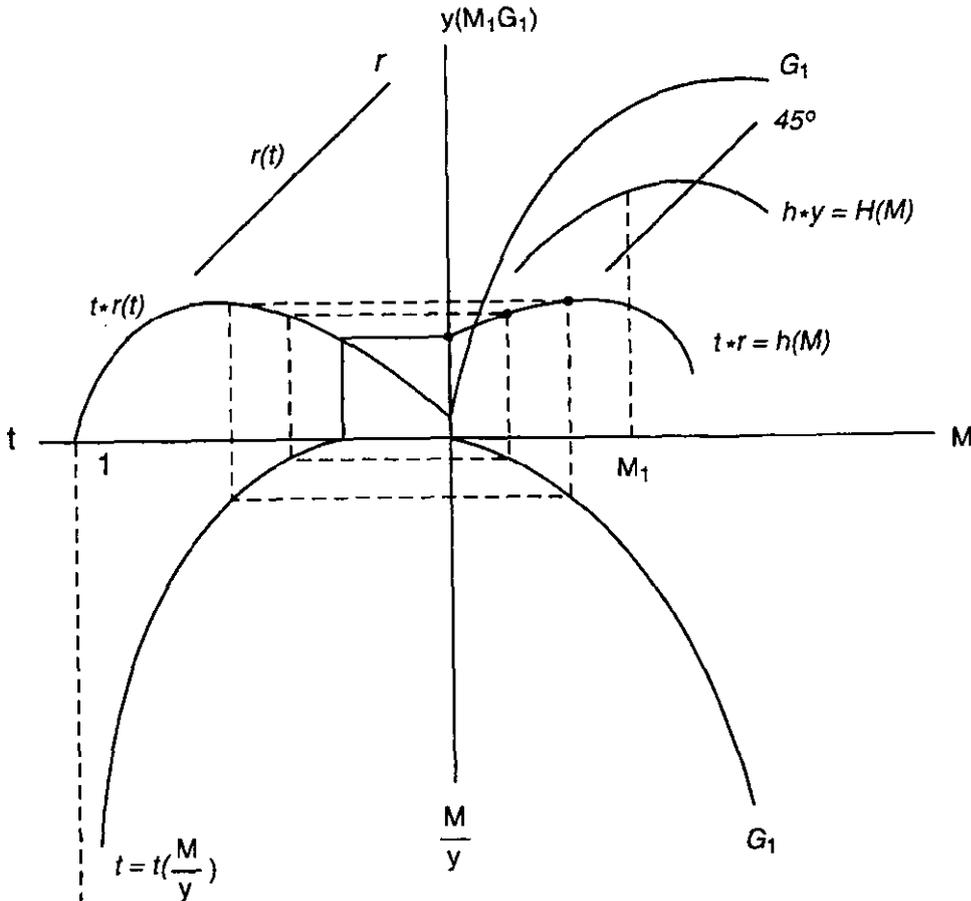


Figure 3b.



the productive potential of the economy. In panel **b** of the diagram, the choice of M is shown for one given value of G ; the diagram is constructed on the assumption that $G = G_1$. The diagram is to be read clockwise from the first quadrant. The first quadrant shows the output relationship $Y = Y(G_1, M)$. The fourth quadrant simply derives $m = M/Y$ from the first quadrant. The third quadrant shows an assumed $t = t(m)$, drawn to be asymptotic to $t = 1$. The second quadrant shows an assumed deadweight loss or excess burden $r = r(t)$, and the rt -curve derived from $r = r(t)$.

The military dictatorship's equilibrium then is shown in three steps: first the rt -curve as a function of t — $rt = f(t)$ —is transposed to the first quadrant of the figure to give rt as a function of M — $rt = h(M)$. Note that the peak of $h(M)$ can be to the right or left of the peak of $Y = Y(G_1, M)$. The product of $h(M) \cdot Y(G_1, M) = H(M)$ will have a peak intermediate between those of the two components $h(M)$ and $Y(G_1, M)$. To ascertain the value of M chosen by the military dictatorship, extend a 45° from the origin to its intersection with $H(M)$. At this value of M no resources would be available to pay for $G = G_1$; therefore, reduce M until the vertical separation between the 45° and $H(M)$ equals the amount G_1 . Call this amount M_1 . For each value of G a similar procedure will give its own value of M . The highest of these (farthest to the right in the diagram) will give the value of G which satisfies (21), giving the optimal G , and will yield the maximum sustainable value of M , which is the objective of the military dictatorship.⁴⁶

⁴⁶The M-O model explores how the **degree of representativeness** of the political system influences the level of taxes and provision of public goods. This feature is readily incorporated into the above extension of their model. First, we extend the notation in the text to define.

$S =$ Defined as the after-transfer or after-redistribution *Income Share* of the governing class measured in terms of the actual Product $r(t)Y$. But not rather than being an independent variable, t depends upon M as in $t = t(m, F)$. With F a parameter, not a variable in the analysis, S is measured as

$$S = F(1 - t) + t = F + t(1-F); \quad dS/dm = (1-F)t_m.$$

For $F = 0$, $S = t$ —the case of a pure autocracy who owns no productive assets, but merely governs and taxes. This autocrat's income share, as in the text therefore, is simply t .

$\delta = r(t)S =$ Income share of the governing group in potential product Y . For an autocrat $S = t$ and $\delta = tr(t)$. The net income of the rulers after paying for public goods and enforcement is $\delta Y - M - G$. The objective or maximization problem for the rulers then becomes

$$\text{Max } \delta Y - M - G : \text{ subject to } [\delta Y - M - G] \leq 0$$

M, G

(continued...)

SUMMARY

Description or Characteristic	Form of Governance		
	Consensual Democracy	Selfish Autocracy	Military Dictatorship
Government's Objective	Maximize Representative Citizen's Welfare.	Maximize Surplus of Taxes in Excess of Expenses on M and G.	Maximize the Sustainable Size of the Security Forces.
Taxes			
Purpose	Finance public goods, M and G.	Produce surplus over revenue necessary to finance M and G.	Finance G and maximize size of the "Army."
Tax rate	Minimum necessary to finance M, G.	Chosen to maximize surplus.	Highest possible.
Amount	Minimum necessary	Marginal cost of collection = 1. Tax yield after costs maximized.	Tax rate higher than maximum tax yield tax.
Security Outlays			
Purpose	Underpin economic incentives to specialize, trade, invest, etc. to maximize economic prosperity.	Support incentives to produce and maintain surplus maximizing autocrat in power.	Support allocative incentives to extent this does not conflict with support of tax-confiscation.
Amount	Marginal social benefits = marginal social costs including tax induced inefficiencies.	Marginal benefit to autocrat (less than social benefit) = marginal cost to autocrat (less than social cost).	Maximum.

⁴⁶(...continued)

where the constraint indicates that resources for enforcement and public good provision must be covered by tax collections. First order conditions for the optimum M for this ruling group maximum are:

$$t_m[(1-F)r + \{(1-t)F + t\}] = 1$$

or

$$r(1 - F) + r'[F(1-t) + t] = m_t > 0$$

and for the optimal G

$$S_r - S_r' m_t m_m - (1 - F) r m_t m_m = 1/Y'$$

Introduction of the tax collection function $t(m)$ makes comparison of outcomes as F varies slightly more complex. But, in general, $t(m)$ means that the cost of M serves to reduce the level of taxation below the level which would obtain for any value of F in the absence of the costs of collections/enforcement; for example, below "pure" autocratic rate which would obtain at $[r + t r'] = 0$ if it were not for enforcement costs. Similarly, with costs of resources greater than in the original M-O model, one should expect less G to be provided. However, the relationship between degree of democracy—value of F—and level of G will continue to obtain for regular increasing marginal cost tax enforcement functions.

Description or Characteristic	Form of Governance		
	Consensual Democracy	Selfish Autocracy	Military Dictatorship
Public Factor Supplies			
Purpose	Public investments in economic productivity.	Increase productivity to generate greater tax revenues.	Improve productivity so that more tax revenues are attainable.
Amount	Marginal social benefits = marginal social costs including tax induced inefficiencies.	Marginal cost to autocrat (less than marginal social cost) = marginal benefit to autocrat (less than marginal social benefit).	Marginal benefit to dictator may be more or less than benefit to rent maximizing autocracy.
Rents or Transfers	None.	Maximum net of revenue costs of M and G to the autocrat.	All rent absorbed by the military.

IV. CONCLUSIONS

This paper proposes a framework for objective, nonideological assessment of the role, and values of security allocations in developing countries. The theme of the analysis is that to explain how resources become available for military use requires understanding of how groups are able to tax away sufficient resources from their economy to maintain their own power and reward themselves without at the same time destroying it. I conjecture that the same incentive structure applies as well to developed countries, but in these latter cases elements of history, transaction cost inertia may more likely overwhelm the cost and benefit structures postulated here. We have constructed models of three pure, but related alternatives for the organization of a society's governance. We have summarized the principal characteristics and conclusions of each in the foregoing table.

The principal import of this analysis for policy makers in international bodies like the IMF and other aid giving entities is that the assignment of resources to security is not all bad. Every effective organization of governance, whether benevolent or not, requires a monopoly over powers of taxation. A monopoly of power to tax is superior to duopoly, and duopoly, in turn, superior to oligopoly. And, monopoly can only be sustained by coercion implicit or explicit. Analysis of whether a country has assigned too much or too little resources to security, involves understanding the places of redistribution versus allocation in the local political economy. Does the army serve only itself, or is it some ruling interest which it represents (ethnic perhaps), are police-justice-security forces solely allocative in purpose? The answer to this question, together with a realistic appreciation of the inevitability of some degree of redistribution, will color the analysts attitude toward the validity of security expenses altogether. It always remains true, of course, that exhortation to accomplish more with less resources can be a useful instruction. And it remains true that the reciprocal interchange of external diseconomies in the form of regional arms races can be objects of well thought out and desirable economizing. However, if the effects identified in this paper prove of quantitative importance, exhortations to reduce security expenses should be made only on a case-by-case basis.

The upshot of these considerations is a major research issue of how to employ a framework resembling that developed in this paper to fit the benefits, costs, and decision processes together to describe an equilibrium between allocative (internal and external security), distributive, and rent garnishment capacities and performances of security forces in developing societies. Such a program should involve several steps or phases to be applied to any society or (most ambitiously) region. First is basically an identification or estimation of actual benefits and costs of security expenditures in accord with the foregoing classification. Second, the distribution of these within any society in question (and spillovers into other societies) is to be determined, particularly how the costs and benefits so estimated impinge on decision-making forces or groups. Third is identification of decision groups and processes, in particular the entities of greatest influence on choice between allocative investment, redistributive transfers, and directly unproductive rent garnishment pursuits within the society under consideration. Last, comparisons of the benefits and costs incident upon and governing the behavior of decisive groups leads to a picture of the rational determination of security and defense allocations.

On the costs side, the supply of resources for military purposes depends on a complex interaction between political and economic incentives, but certain technical factors are also important. For example, in an economy manifesting persistent disequilibrium surpluses and shortages, true opportunity costs and financial costs will diverge, for example, rigidity of labor markets, and excess supplies of labor locally or throughout an economy may reduce true costs of armies, security forces, or gangs greatly. Lack of opportunities for employment outside of country and economic/social isolation of population⁴⁷ may also lessen perceived costs of manning security forces. The significant economic literature on the relations between economic prosperity and military outlays is extremely relevant here, but has not been applied to this issue. For example, portability of skills (Benoit, 1973, 1978; and numerous articles to follow) learned while in the military may generate an external benefit or cost reduction which encouraging allocation to security. What is actual distribution of the costs of the military? Externalities and nonmarket costs associated with defense or police (e.g., costs of conscription) may be very important. Aside from such externalities not included in tax costs of financing a security establishment, the cost distribution is the same as the distribution taxes. Thus, consider the distribution of taxes: in an autocracy the autocrat bears none of these costs, in a plutocracy the decision makers will bear very little of the direct costs, and as one imagines the organization of politics to approach closer and closer to unanimous consensual democracy the costs borne by the decision groups approaches closer and closer to the true social costs. Of course, real costs of taxation (and therefore of providing for security) involve extra deadweight losses in addition to resources actually collected (and this reduces the value in some sense of the tax monopoly of political control).

On the benefits side of benefit cost comparisons, one primary distinction in conceptualization will be benefits from protection against internal versus external "threat."

⁴⁷I have had helpful conversations on this point with Ludger Schuknecht.

As for internal benefits, issues include the effectiveness or leakiness of the tax monopolization to the role of police-justice-security back-up force in tax collections.⁴⁸ How does this depend on stage of development, and on tax base/system in use? Could taxation provide incentives for producers to go underground or migrate to other countries? Can security allocations reduce these effects, by border control, suppression of underground activities, etc.? To what extent is this function of enforcement subject to corruption? Corruption in terms of the accounting scheme laid out above is a form of redistribution and a directly unproductive benefit.

With respect to the external role of a military capability to provide defense against outside interference, and to sustain the independence of a country, and/or to conquer, dominate, acquire possessions, and such like, there has been a rekindling of interest lately among economists at a theoretical level. Typically, these economic arguments for defense (or for conquest), assume that a tendency exists for the decision apparatus of a country to be rational, if not consciously then implicitly because it has survived—which it could not achieve if it systematically and repeatedly discarded net resource augmenting opportunities. Thus, with respect to benefits of defense, who in a country actually benefits from self-defense, and how are the costs and benefits of conquering, dominating, or merely influencing other nations shared among the population of the aggressor country and the rulers in that country? How far will an assumption of a unitary monolithic population take us in analyzing aggression? An alternative assumption to the unitary state can be that an aggressor country's population is just used as an instrument for the redistributive objectives of its political leadership. In other words, does the normative measure of benefit from security represented by equation (1) have any positive validity?

There is a long literature which concentrates on the fact or presumption that successful aggression, if rational, must gain a benefit for the aggressor and this must be greater the benefit he would gain by doing something else with his resources. Thus, numerous forecasts have been made (some around the time of World War I, others just since the end of the Cold War) that war being no longer profitable, we should expect it to not recur. More than deductive reasoning is needed to look at this question. Included would be models of how the state of technology and education in a country influence whether its surplus can be stolen: what kinds of industries are invulnerable to being conquered and what kinds are vulnerable; to steal a country's surplus must its population be conquered, or can it be expelled, or can it be just bypassed?⁴⁹ For some countries, easy-out migration of conquered populations will

⁴⁸The role of internal security in securing the stability of regime is vastly different in different countries. In some, there may be no role at all. In others, this obviously is of great importance. Whether one is interested in this function of security depends possibly on one's interest in advanced versus early stages of development.

⁴⁹Relevance of these questions and of the approach of this paper to understanding ethnic, political, and border instabilities in South-East Europe, Africa, Middle-East and other hot
(continued...)

influence a country's susceptibility to being conquered. What binds people to staying in a country that has been conquered? How have costs of managing a subject or satellite population been changing? Especially in a modern technological environment where the product of a country cannot be stolen, it can only be produced with the active cooperation of the indigenous population.

More generally than these specific topics of how the incentives shape the effects of security on development there is the broader subject of how a strong military or security backdrop in a society energizes or depletes development; whether as mentioned above authoritarianism, discipline, organization, and other spillovers from the military mentality outweigh the eclecticism, creativity, and nimbleness which are lost. This connects to the current debates in transition countries and East Asian countries as to the benefits of a "hard" state and raises questions, of how other characteristics of societies interact with security programs to enhance or retard development. For example, highly heterogeneous societies may only be held together by military power. And military power is expensive, but possibly less so than the costs of market shrinkage when size is sub-optimal.⁵⁰

Aside from the true marginal benefits and costs of military capability, how are these effects perceived and measured by the decision-making apparatus in a country? How does this measurement or mis-measurement depend on, and how does the true or warped perception of military costs/benefits depend on the decision structure? For example, does a democratic more or less consensual society operationally judge the marginal benefits and costs in the same way and with the same accuracy as does a dictator? Does the accuracy or inaccuracy with which true costs and benefits are perceived depend in some systematic fashion on the political system in a country? If this were true, then one might understand/anticipate how the style of the regime biases perceptions of military benefits/costs. The laboratory for discovering which of these effects is important and which not, for exploring the interaction between security forces and a country's political economy is evidently the spectrum of countries and situations in every part of the world. Empirical applications of these ideas obviously must be tempered by the importance of other noneconomic factors in explanations of political developments, including irrational factors which may overshadow rational ones.

⁴⁹(...continued)

spots suggest a prime area for empirical research and application.

⁵⁰The concept of "optimal size" applied to countries, while empirically difficult, is conceptually fairly clear. Even in an environment of completely free trade, and zero risk of trade disruption, scale economies in organization and provision of national public goods and economically costly compromises necessary when people have disparate preferences/tastes strongly imply the existence of a surplus maximizing size—in terms of area and population.

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