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Domestic Politics and International Conflict

By MICHELLE R. GARFINKEL*

This paper explores the interactions between domestic politics and international conflict. The analysis shows that electoral uncertainty associated with competition between political parties, each representing a specific group of the electorate, imparts a negative "bias" on the nation's military spending, given military spending by other nations. In turn, electoral uncertainty lowers other nations' incentive to arm as well. In this context, democratic institutions can be thought of as a possible "precommitment" mechanism that reduces the severity of conflict between nations and, thereby, increases the amount of resources available globally for consumption. (*JEL* D74, E61)

How does competition between political parties manifest itself in aggregate economic outcomes? In addressing this question, macroeconomists have taken primarily two approaches: the "rent-seeking" or opportunistic approach and the "partisan" or ideological approach.[1] The first approach assumes that the political party in office enjoys a psychic benefit from being in control or can extract rents from society once in power. If these rents do not depend on the party's policies, policy choices are made to maximize future reelection possibilities. In the partisan approach, by contrast, each party represents a particular group of the electorate. Policy choices are made not only to enhance future reelection chances, but to maximize the welfare of the party's constituency. Despite differences in the approaches, the general implication of these analyses is essentially the same, namely, that democratic institutions tend to generate suboptimal economic outcomes.[2]

Although few, if any, would argue that democratic institutions are without costs, the general implication of the existing literature would seem somewhat puzzling. In particular, the analyses from which these negative implications are derived have little to say about the economic benefits of political competition. Why do these democratic institutions exist? If these institutions are designed optimally, they would be intended to minimize deadweight losses. Insofar as

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[1]See Torsten Persson and Guido Tabellini (1990) and Alberto Alesina and Nouriel Roubini (1992) for recent surveys of this enormous and still-growing literature. It should be noted that some of this recent research on political business cycles (e.g., Alesina, 1988) takes a combination of these two approaches.

[2]Many of the analyses recently surveyed by Alesina and Roubini (1992), for example, focus on the unemployment–inflation trade-off, showing how democratic political institutions can add to the variability of inflation and output. See Persson and Tabellini (1990) for a useful discussion of the other types of costs of democracies that have been identified in the literature. Alesina and Tabellini (1990), for example, find that political competition can generate a positive bias in debt finance when there is disagreement about the appropriate composition of public spending. In a related line of research emphasizing inequalities in income, Persson and Tabellini (1994) show how the presence of a conflict over the distribution of income in a democratic society can lead to policies that do not protect individuals' property rights fully and, thereby, harm economic growth; also see Alesina and Dani Rodrik (1994). However, these analyses do not predict that democracies are likely to grow more slowly than are nondemocratic nations.

the existing analyses fail to explain the emergence of the political institutions in question, they seem incomplete.[3]

This paper analyzes the interactions between domestic politics within a nation and conflict between nations in a effort to fill in the gap. The main finding is reminiscent of a prediction made by Immanuel Kant nearly two centuries ago, that democratic nations are likely to be more peaceful (see Kant, 1949). Specifically, the analysis finds that electoral uncertainty associated with political competition in one nation can reduce the severity of conflict between that nation and others.

Based on a simple political-economic framework in the spirit of the partisan approach, the analysis identifies the effects of electoral uncertainty associated with political competition on a nation's allocation of resources among peaceful (private and public) production activities and military spending when there is disagreement about the appropriate composition of peaceful production activities. The key feature of military spending (or, equivalently, armaments) in this framework is that, given military spending by other nations, it secures resources available for future peaceful production and, thus, enhances future consumption possibilities. The incumbent policymaker who chooses the current allocation of resources feels the full burden of arming in terms of lower current consumption; but, unless reelected and able to choose the next period's allocation of resources secured by those armaments, the incumbent need not enjoy their benefits fully. Under a reasonable set of conditions, the possibility of being replaced by another policymaker with different goals prevents the incumbent from entirely internalizing the benefits of current military spending realized beyond the current electoral term. That is to say, electoral uncertainty associated with political competition can impart a negative bias in a nation's military spending policy. Like the positive bias in debt finance found by Alesina and Tabellini (1990) and Tabellini and Alesina (1990), the negative bias in arms identified here increases in magnitude as the degree of disagreement between the incumbent policymaker and potential successors increases.[4]

However, the bias found in the present analysis should not be interpreted simply as an additional cost of a democratic system. Rather, the bias implies that international "cooperation," in the form of disarmament, is more likely to be sustained in a noncooperative equilibrium without threats and punishments.[5] Even if disarmament is not supported in equilibrium with political competition, the presence of electoral uncertainty associated with such competition can support some degree of cooperation by reducing the amount of resources allocated to military activities below that which obtains absent such uncertainty. Thus, although political competition might generate some inefficiencies as demonstrated in the existing literature, these inefficiencies might be out-

[3]This is only to say that the economic benefits of political competition are generally ignored in the theoretic literature. Of course, there are exceptions. The benefits identified generally rely on information problems. For example, without complete information about the competency of alternative candidates as in Kenneth Rogoff (1990), elections are useful to ensure that the incompetent leaders do not remain in office indefinitely. In addition, Alesina (1989 p. 85) argues that elections provide a mechanism whereby society's (changing) preferences are revealed to the parties and can influence each party's bargaining power in a cooperative equilibrium. As argued in this paper, however, the economic benefits of political competition might extend well beyond the resolution of information problems.

[4]Alex Cukierman et al. (1992) obtain a similar result with respect to money creation (i.e., seigniorage). However, it should be noted that the authors interpret this bias as being driven more generally by "political instability," that is, the likelihood of either a regular or irregular government transfer.

[5]In its focus on noncooperative equilibria, the analysis does not assume a commitment technology to support cooperation, nor does it rely on trigger strategies as in Garfinkel (1990). Rather, restricting attention to equilibria where each nation's strategy is contingent only on the current state variables, the notion of cooperation in the present analysis is analogous to that in a one-shot, Nash game. See Stergios Skaperdas (1992) for an interesting analysis of cooperation in an asymmetric, one-shot game.

weighed by the benefits in the form of greater global consumption opportunities. In turn, this benefit provides some rationale for the tremendous importance attached to the stabilization (and preservation) of democracy in Russia by Western nations.

In what follows, the next section presents a simple political-economic framework to study the optimization problems faced by voters (or consumers) and the political parties of one nation. Treating the other nations' military spending as fixed, Section II studies the implications of electoral uncertainty on the nation's optimal military spending policies. Section III sketches an extension of the model to a game between two nations to illustrate the main implication of political competition for international conflict. Finally, Section IV offers some concluding remarks.

I. Analytic Framework

To characterize policy outcomes in one nation where political competition prevails, this section presents a simple two-period framework—a slightly modified and simplified version of the basic model developed in Alesina and Tabellini (1990) and Tabellini and Alesina (1990). The economy consists of J consumers or, equivalently, voters, indexed by $j = 1,2,\ldots,J$. Each voter receives an identical endowment, Z_t, of nonstorable goods at the beginning of both periods, $t = 1,2$. Of this endowment, which cannot be consumed directly, voter j allocates i_t^j units to a production technology. Together with peaceful investment goods provided by the government to the voters on a nondiscriminatory basis, n_t (in per capita terms), the voter's private investment yields nonstorable goods for consumption at the end of the period. Representative voter j possesses the following technology:

$$(1) \quad G(i_t^j, n_t, \mu^j) = (1-\mu^j)\, g(i_t^j) + \mu^j g(n_t)$$

for $t = 1,2$, where $g(\cdot)$ is at least twice continuously differentiable, strictly increasing, and strictly concave. Both i_t and n_t depreciate fully by the end of period t.

In this formulation, voters possess different technologies, identified by the parameter μ^j which is distributed over the interval $[0,1]$. Variation in μ across individuals reflects real differences in technologies available to the nation's individuals; whereas some individuals' returns depend heavily on public investment (e.g., infrastructure and the protection of property rights within the nation), others' returns depend more on private investment. In a more fully articulated model, these differences could be linked to differences in individuals' locations in the nation or to differences in the nature of individuals' types of business. Alternatively, variation in μ could be interpreted simply as a conflict over the distribution of income or, with minor modifications, as "ideological" differences about the extent to which the government should intervene in economic activity.[6] In any case, given the nation's resource constraints, variation in μ across individuals translates into a general disagreement about the appropriate composition of peaceful investment.

An essential feature of this model is that, while each individual's technology parameter μ is constant over time, the median voter need not be the same for both periods. Rather, the distribution of those individuals who actually vote is subject to unpredictable changes. These changes could be driven, for example, by costs randomly imposed on individual voters to alter their decision of whether or not to participate in the election (John Ledyard, 1984) or by uncertainty about future changes in the

[6]Under the interpretation that variation in μ reflects a conflict over the distribution, n would represent a lump-sum distribution of income from the government financed by lump-sum taxes on each individual [see equation (2)]. Although each individual contributes an equal share of his endowment, the marginal burden of this tax falls more heavily on those individuals with smaller μ and the provision of any given n yields a smaller marginal benefit to those same individuals. Variation in μ might be seen as ideological differences if (1) is viewed as the individual's period-t instantaneous utility function. In this case, the individual's lifetime utility is given by equation (4), substituting in $G(i_t^j, n_t, \mu^j)$ for c_t^j.

criteria that define the voting population (Tabellini and Alesina, 1990). In turn, this instability ensures that future election outcomes are uncertain.[7]

Upon receipt of the endowment in each period t, individuals vote to elect a policymaker.[8] Once the outcome of the election is realized, the incumbent imposes an identical, lump-sum tax on each voter, τ_t, which can be transformed without any cost into nonmilitary, public goods, n_t, and military goods, m_t (also in per capita terms). The government's budget constraint, in per capita terms, is given by

$$(2) \qquad \tau_t = m_t + n_t \qquad t = 1,2.$$

Here, it is assumed that all public expenditures are financed by current tax revenue.[9]

In this model, military spending enhances the nation's ability to capture or protect a fraction of world resources. Specifically, holding military spending by other nations fixed, an increase in military spending increases the endowment received by each voter equally, but not until the next period:

$$(3) \qquad Z_{t+1} = z(m_t)$$

given m_0, where $z(\cdot)$ is at least twice continuously differentiable and $z_m(m_t) \equiv \partial z(m_t)/\partial m_t$ is strictly positive and decreasing. For analytical convenience, the specification in (3) precludes any benefits from military spending in the current period. Insofar as military spending's potential benefits are not fully realized during the incumbent's current term, the results to follow remain valid. As discussed in Section III, $z(\cdot)$ depends not only on the state of technology available to the nation to extract or protect resources, but on other nations' military spending (see e.g., Jack Hirshleifer, 1988, 1991; Garfinkel, 1990; Skaperdas, 1992).[10] However, since the analysis initially treats military spending by other nations as exogenous, that notation is suppressed for now.

A. *The Voters' Optimization Problem*

Although voters differ with respect to their production technologies, they have identical preferences defined over current and future consumption, c_t^j, $t = 1,2$:

$$(4) \qquad W^j = E_1\left\{\sum_{t=1}^{2} \beta^{t-1} c_t^j\right\}$$

where $E_1\{\cdot\}$ denotes the expectations operator conditional on information available in the beginning of period $t = 1$ and β reflects the individuals' time preference. Under the maintained assumptions that the endowment cannot be consumed directly and is nonstorable, the individuals' investment decision is trivial. Specifically, taking the current and expected future tax and public spending policies as given, each individual j maximizes expected utility (4), subject to his production technology (1) and two sets of resource constraints: (i) $c_t^j \le G(i_t^j, n_t \mu^j)$ and (ii) $i_t^j \le Z_t - \tau_t$, $t = 1,2$. The solution to this problem is identical for each voter:

$$(5) \qquad i_t = Z_t - \tau_t \qquad t = 1,2.$$

Thus, the only interesting choice made by

[7]Tabellini and Alesina (1990) show how this uncertainty falls as individuals in the nation become more homogeneous.

[8]Following the modeling strategy of this literature, the analysis takes the timing of elections as given. See Christopher J. Ellis and Mark A. Thoma (1991) for an interesting analysis of how a variable election term determined endogenously can influence economic outcomes and, in particular, the variance of real economic activity.

[9]Alesina and Tabellini (1990) and Tabellini and Alesina (1990) have already shown that, with the possibility of debt finance, political competition can lead to inefficient outcomes. To emphasize the positive aspects of political competition, the present analysis abstracts from this particular distortion.

[10]Alternatively, if $z(\cdot)$ is interpreted as a policing function to guard against internal threats, it would depend on the severity of those threats (e.g., the possibility of a revolution) (see Herschel I. Grossman, 1991). Under this alternative interpretation, however, spending aimed to promote the protection of property rights within the nation must be included in m and not in n.

each individual concerns which political party to support. Given μ^j, this decision depends on the policies expected to be implemented by each party if elected.

B. *The Political Parties' Optimization Problem*

To focus the discussion, the analysis assumes that there are only two political parties, indexed by $k = \mathrm{I},\mathrm{N}$: respectively, the incumbent party in period $t = 1$ and the potential successor in period $t = 2$. Disagreement between the two political parties is captured by differences in their preferences, W^k, corresponding to those of different groups of the electorate:

$$(6)\quad W^k = E_1\left\{\sum_{t=1}^{2}\beta^{t-1}G(i_t, n_t, \mu^k)\right\}.$$

where $\mu^k \in (0,1)$ for $k = \mathrm{I},\mathrm{N}$. To fix ideas, the analysis assumes that party I identifies itself with those voters having $\mu = \mu^{\mathrm{I}}$ and encourages more private investment than would party N, who identifies itself with those voters having $\mu = \mu^{\mathrm{N}}$. That is, $0 < \mu^{\mathrm{I}} < \mu^{\mathrm{N}} < 1$. Keep in mind, however, that it is only important for there to be some disagreement between the two parties.[11]

In what follows, the analysis assumes that the parties do not attempt to influence their own probability of election: party I is reelected in period $t = 2$ with probability P and party N wins the second-period election with probability $1 - P$. Indeed, if voters are forward-looking rational agents, who know both parties' preferences, neither party can make *false* announcements in equilibrium about policies to be implemented in the future to influence future election outcomes without a commitment technology. Absent such a technology, each party can credibly announce only that policy which would be considered optimal once in power in period $t = 2$. Also, as noted below, the equilibrium determination of $P(\cdot)$ depends only on the preferences of the median voter in relation to those of the political parties.

[11]The assumption that $\mu^k \in (0,1)$ is not crucial as noted in Section II-B. In addition, it is important to note that allowing for more than two parties would only complicate the analysis without providing much additional insight.

II. Electoral Uncertainty and Military Spending

This section analyzes the effects of electoral uncertainty on the nation's allocation of resources to armaments, treating other nations' military spending as exogenous. With this focus and the assumed time-separability of each party's objective function, it is convenient to start by characterizing the parties' preferred peaceful investment policies for a given sequence of military spending. But note here that, because military spending in the final period yields no benefits, $m_2 = 0$ regardless of the identity of the policymaker.

A. *Preliminaries: The Parties' Preferred Composition of Peaceful Investment*

Each party, if in power in period t, would choose the composition of peaceful investment to maximize $G(i_t, n, \mu^k)$ for a given endowment net of military spending in that period, $z(m_{t-1}) - m_t$. Under the maintained assumptions that $\mu^k \in (0,1)$, the first-order conditions to this problem are generically given by (2), (3), (5), and the following:

$$(7)\quad -(1-\mu^k)g'(i_t) + \mu^k g'(n_t) = 0$$

for $k = \mathrm{I},\mathrm{N}$ and $t = 1,2$, where as previously noted $m_2 = 0$. Given the concavity of the production technology, these conditions are both necessary and sufficient.

The expression in (7) equates the marginal benefits of private and public peaceful investment given m_0, m_1, and $m_2 = 0$. Combined with (2), (3), and (5), it implicitly defines the parties' preferred peaceful investment policies in period $t = 2$, n_2^{*k} and i_2^{*k}, as functions of m_1 and μ^k. An application of the implicit-function theorem to (7), using (2) with $m_2 = 0$ and (5), shows that $\partial n_2^{*k}/\partial \mu^k = -\partial i_2^{*k}/\partial \mu^k > 0$. Not surprisingly, then, $i_2^{*\mathrm{I}} > i_2^{*\mathrm{N}}$ and $n_2^{*\mathrm{I}} < n_2^{*\mathrm{N}}$. Along the same lines, one can easily verify that $\partial i_2^{*k}/\partial m_1 = z_m(m_1) - \partial n_2^{*k}/\partial m_1 > 0$. As shown below, given the disagreement be-

tween the two parties, the dependence of party N's preferred peaceful investment policies in period $t=2$ on m_1 gives rise to some important strategic considerations in party I's arming decision in period $t=1$. Equations (7), (2), and (5) also implicitly define party I's optimal peaceful investment policies, $i_1^{*\mathrm{I}}$ and $n_1^{*\mathrm{I}}$, as functions of $z(m_0)-m_1$ and μ^{I}. As one can easily verify, $\partial i_1^{*\mathrm{I}}/\partial m_1 = 1-\partial n_1^{*\mathrm{I}}/\partial m_1 < 0$.

These solutions in turn define party I's indirect utility in period $t=1$ as a function of $z(m_0)-m_1$,

$$G^{\mathrm{I}}\big(z(m_0)-m_1\big) \equiv G\big(i_1^{*\mathrm{I}}, n_1^{*\mathrm{I}}, \mu^{\mathrm{I}}\big)$$

and its indirect utility if reelected in period $t=2$ as a function of m_1,

$$\hat{G}^{\mathrm{I}}(m_1) \equiv G\big(i_2^{*\mathrm{I}}, n_2^{*\mathrm{I}}, \mu^{\mathrm{I}}\big).$$

In addition, party I's second-period utility function if not reelected is indicated by

$$\hat{G}^{\mathrm{NI}}(m_1) \equiv G\big(i_2^{*\mathrm{N}}, n_2^{*\mathrm{N}}, \mu^{\mathrm{I}}\big).$$

B. *Military Spending with Alternating Policymakers*

Recognizing the influence of m_1 on the potential successor's peaceful investment policies, the incumbent in period $t=1$, party I, solves the following optimization problem:

$$(8)\quad \max_{m_1}\Big\{G^{\mathrm{I}}\big(z(m_0)-m_1\big) + \beta\big[P\hat{G}^{\mathrm{I}}(m_1)+(1-P)\hat{G}^{\mathrm{NI}}(m_1)\big]\Big\}$$

subject to (1), (2), (3), and (5). Assuming an interior solution, the first-order condition to this problem, similar to an individual's consumption–savings decision, can be written as

$$(9)\quad -G^{\mathrm{I}\prime}\big(z(m_0)-m_1\big) + \beta\big[P\hat{G}^{\mathrm{I}\prime}(m_1)+(1-P)\hat{G}^{\mathrm{NI}\prime}(m_1)\big] = 0$$

where, from (7),

$$\hat{G}^{\mathrm{NI}\prime} = \big(1-\mu^{\mathrm{I}}\big)g'\big(i_2^{*\mathrm{N}}\big)\big(\partial i_2^{*\mathrm{N}}/\partial m_1\big) + \mu^{\mathrm{I}}g'\big(n_2^{*\mathrm{N}}\big)\big(\partial n_2^{*\mathrm{N}}/\partial m_1\big)$$

and by the envelope theorem,

$$G^{\mathrm{I}\prime}\big(z(m_0)-m_1\big) = \big(1-\mu^{\mathrm{I}}\big)g'\big(i_1^{*\mathrm{I}}\big)$$

and

$$\hat{G}^{\mathrm{I}\prime}(m_1) = \big(1-\mu^{\mathrm{I}}\big)g'\big(i_2^{*\mathrm{I}}\big)z_m.$$

The second-order condition is assumed to be satisfied as a strict inequality.[12]

The first term in (9) is simply the marginal cost of military spending in terms of forgone peaceful production and, thus, consumption in period $t=1$. At an optimum defined by (7), it equals the marginal drop in peaceful production when either type of peaceful investment is reduced by one unit. The second term in (9) is the expected discounted marginal benefit of military spending in terms of the additional resources secured for peaceful production and consumption in period $t=2$, accounting for the influence of μ^{N} on the composition of peaceful investment if party I is not reelected through $\hat{G}^{\mathrm{NI}\prime}(m_1)$.

Party I's optimal military-spending policy, $m_1^{*\mathrm{I}}$, as implicitly defined by (9), with (2), (3), (5), and (7), depends on its probability of reelection, the level of military spending in the previous period, and both parties' preferences. As a starting point to analyze this policy, consider the benchmark case of no disagreement between the two parties (i.e., $\mu^{\mathrm{I}}=\mu^{\mathrm{N}}$). From (7), for $t=2$, it is clear that the parties' investment policies in period $t=2$ will be identical for any P such that the (undiscounted) marginal benefit of military spending if party I is reelected, $\hat{G}^{\mathrm{I}\prime}(m_1)$, is identical to that if it is not reelected, $\hat{G}^{\mathrm{NI}\prime}(m_1)$. In turn, (9) implies that, in the absence of disagreement between the two parties, electoral uncertainty would have no implications for the nation's military-spending policy. For future reference, let $m_1^{*\mathrm{D}}$ denote this policy.

[12]Given the restrictions imposed on $g(\cdot)$ and $z(\cdot)$, a sufficient (but not necessary) condition which ensures that $\hat{G}^{\mathrm{NI}}(m_1)$ is concave in m_1 is that $R(i)^2 + R(n)R(i) + R(n)^2R'(i) > 0$ and $R(n)^2 + R(i)R(n) + R(i)^2R'(n) > 0$, where $R(\cdot) \equiv -g''(\cdot)/g'(\cdot)$. Details are available from the author upon request.

A close inspection of (9) reveals that the effect of electoral uncertainty on party I's arming decision in period $t=1$ depends on the difference between $\hat{G}^{\mathrm{I}\prime}(m_1)$ and $\hat{G}^{\mathrm{NI}\prime}(m_1)$ for $\mu^{\mathrm{I}} \neq \mu^{\mathrm{N}}$. Following Tabellini and Alesina (1990), it is possible to show that, when $\lambda(\cdot) \equiv -g''(\cdot)/g'(\cdot)^2$ is decreasing (monotonically) in the level of peaceful investment, the marginal benefit of arming if not reelected, $\hat{G}^{\mathrm{NI}\prime}(m_1)$ for a given m_1, falls below $\hat{G}^{\mathrm{I}\prime}(m_1)$ as party N's preferences diverge from those of the incumbent (i.e., $|\mu^{\mathrm{I}} - \mu^{\mathrm{N}}|$ increases).[13] Since the difference between $\hat{G}^{\mathrm{I}\prime}(m_1)$ and $\hat{G}^{\mathrm{NI}\prime}(m_1)$ is strictly positive for $\mu^{\mathrm{I}} \neq \mu^{\mathrm{N}}$ given $m_1 > 0$, the necessary condition in (9), when evaluated at $m_1^{*\mathrm{D}}$, is negative for any $P < 1$. In turn, the second-order condition implies the following:

PROPOSITION 1: *If* $\lambda'(\cdot) < 0$, $m_1^{*\mathrm{I}} < m_1^{*\mathrm{D}}$ *for* $P < 1$ *and* $\mu^{\mathrm{I}} \neq \mu^{\mathrm{N}}$.

Because the party in office in period $t=1$ can choose the allocation of resources secured by current military spending among peaceful investment activities in the next period $t=2$ only if reelected, the strict probability of not being reappointed "distorts" its choices. As long as $\lambda'(\cdot) < 0$, this distortion produces a negative "bias" in military spending.[14]

The importance of the condition imposed on the concavity of the peaceful production technology [i.e., $\lambda'(\cdot) < 0$] can be seen by looking at the source of this distortion more closely. In particular, consider a hypothetical increase in μ^{N} relative to μ^{I}, where initially $\mu^{\mathrm{N}} > \mu^{\mathrm{I}}$. Given P, μ^{I}, and m_1, the change in party N's preferences decreases party I's consumption in period $t=2$ if not reelected, increasing the risk and decreasing the expected return from military spending. Given the similarity between the incumbent party's intertemporal choice and an individual's optimal savings decision, it is natural to conjecture that the effect of this change in party N's preferences on party I's military investment is generally ambiguous. However, while this conjecture is correct, in the case of time-separable preferences a decrease in the return from savings in one state of nature will reduce the individual's incentive to save if and only if her relative risk aversion is less than 1.[15] Due to the strategic nature of the problem at hand, the source of the ambiguity of the effect here (and so the set of conditions under which the direction of this effect is clear) differs subtly from that in the case of the individual's optimal savings decision.

In particular, an increase in μ^{N} influences party N's allocation of additional resources secured by one more unit of military spending among the two types of peaceful production activities—specifically, through the terms $\partial i_2^{*\mathrm{N}}/\partial m_1$ and $\partial n_2^{*\mathrm{N}}/\partial m_1$. If $-g''(\cdot)/g'(\cdot)$ is decreasing in the level of investment, the two parties' preferred peaceful investment policies diverge as the second-period endowment increases. This condition is both necessary and sufficient to ensure that an increase in μ^{N} relative to μ^{I} produces a negative substitution effect on military spending. That is, the incumbent views the opportunity cost of current consumption as being lower since the other party (N) if in power in period $t=2$ would allocate the additional resources secured by the arms disproportionately to the type of peaceful investment spending having the lower marginal value. A reduction in military spending pushes the potential successor's peaceful investment policies toward

[13] This condition requires that $R'(\cdot) + R(\cdot)^2 < 0$, where $R(\cdot) \equiv -g''(\cdot)/g'(\cdot)$. Details are available from the author upon request. As noted by Tabellini and Alesina (1990), this condition on $g(\cdot)$ would be satisfied by any constant-elasticity-of-substitution production technology, $g(i) = i^{\alpha}/\alpha$ for $0 < \alpha < 1$.

[14] If instead the party is a dictator (i.e., $P=1$), it is possible to show that this bias relative to the optimal military-spending policy is identical to that relative to the optimal military-spending policy of a hypothetical (nationalistic) social planner or benevolent dictator who is reelected with probability equal to 1 when the production technology is homothetic.

[15] See Jacques H. Drèze and Ando Modigliani (1972) for an explicit statement of the conditions under which the direction of the effect of an increase in uncertainty (in future income and the rate of return on assets) is clear. Also, see Agnar Sandmo (1974) for a brief survey of this literature.

that which the incumbent party prefers in period $t = 2$, thereby smoothing consumption for those individuals represented by party I over the two contingencies. At the same time, however, an increase in μ^N pushes party N's preferred composition of peaceful investment, for a given $z(m_1)$, away from that of party I, producing a positive income effect on military spending given the concavity of the peaceful investment technology. At the expense of lowering consumption in period $t = 1$, an increase in m_1 increases future consumption whether or not party I is reelected, thereby smoothing expected consumption over the two periods. The condition in Proposition 1 simply requires that $-g''(\cdot)/g'(\cdot)$ decrease more quickly than $g'(\cdot)$ such that, for any given $\mu^N \neq \mu^I$, the divergence between the two parties' preferred spending policies increases sufficiently as the second-period endowment increases, to ensure that the substitution effect dominates the income effect.

The negative bias in the nation's military-spending policy found here is analogous to the positive bias in debt finance found by Tabellini and Alesina (1990) under a direct democracy and by Alesina and Tabellini (1990) under a two-party representative democracy when there is uncertainty about the identity of the future median voter. As in those two analyses, while the condition on the concavity of the production technology [i.e., $\lambda'(\cdot) < 0$] is sufficient to ensure the emergence of the negative bias, it is not necessary. Specifically, one can easily verify that, if the potential successor (party N) had extreme preferences (i.e., $\mu^N = 1$), then it would encourage no private investment: $n_2^{*N} = z(m_1)$ and $\partial i_2^{*N}/\partial m_1 = 0$. Accordingly, the (undiscounted) marginal benefit of military spending if party I is not reelected, $\hat{G}^{NI\prime}(m_1)$, simplifies to $\mu^I g'(z(m_1))z_m$ which is unambiguously less than that if party I is reelected, $\hat{G}^{I\prime}(m_1) = \mu^I g'(n_2^{*I})z_m$, as long as $\mu^I < 1$ and $g''(\cdot) < 0$. In this case, the expansion paths of the two parties' preferred peaceful investment spending policies diverge sufficiently to yield Proposition 1 without the restriction on $\lambda(\cdot)$. Moreover, following Alesina and Tabellini (1990), one can verify more generally for $\mu^k \in [0,1]$ that the negative bias remains intact in the political equilibrium.[16]

C. *Comparative Statics and Empirical Implications*

The discussion above suggests that the analysis yields a rather straightforward empirical hypothesis. Specifically, by applying the implicit-function theorem to (9) and invoking the second-order condition, one can verify the following:

PROPOSITION 2: *If* $\lambda'(\cdot) < 0$, m_1^{*I} *is increasing in* $P < 1$ *and decreasing in* $|\mu^I - \mu^N|$.

In words, the analysis predicts that the amount of resources allocated to military spending will be lower the greater is the likelihood that the incumbent will be replaced by another leader and the greater is the degree of polarization between the incumbent's goals and those of the potential successor. As suggested previously, the first part of this proposition holds even if the condition on $\lambda(\cdot)$ is not satisfied as long as $\mu^N = 1$. Of course, testing this prediction requires that one find reasonable measures of (i) electoral uncertainty for the incumbent leader and (ii) the extent of disagreement between the incumbent and the potential successor(s). But, when leaders of nondemocratic nations are viewed as benevolent dictators (i.e., nationalistic social planners) facing no uncertainty about future rule (or reelection), one can subject the model to empirical verification without seeking such measures. Specifically, from Proposition 1,

[16] Furthermore, along the lines of Alesina and Tabellini (1990), assuming that the parties have extreme preferences (i.e., $\mu^I = 0$ and $\mu^N = 1$), one can show that the bias does not disappear in the steady state of the infinite-horizon case. (Details are available from the author upon request.) As illustrated by Linda R. Cohen and Roger G. Noll's (1992) interesting analysis, however, this result does not extend easily beyond the two-period case. Nevertheless, explicitly accounting for the effects that policies enacted today and delivering benefits in the future (beyond the incumbent's current term in office) have on the incumbent's probability of being reelected, their analysis suggests that the bias identified here would not vanish in a longer-horizon model.

TABLE 1—MILITARY-SPENDING SHARES IN DEMOCRATIC AND NONDEMOCRATIC NATIONS

Type of government	Military-spending shares (A)	(B)
Democratic	0.0304	0.0277
	(0.0452)	(0.0303)
Nondemocratic	0.0508	0.0438
	(0.0554)	(0.0459)
All nations	0.0361	0.0358
	(0.0396)	(0.0396)
Number of democratic/nondemocratic nations:	85/33	58/59
t test for the null hypothesis of no differences in means:	2.577	2.238

Notes: For each nation, military-spending share is measured as real military spending as a fraction of real GDP averaged over the years 1967–1989, taken from *World Military Expenditures and Arms Transfers* (U.S. Army Control and Disarmament Agency, 1990). As described in the text, column A classifies the nations as democratic or not democratic on the basis of the Alesina et al. (1992) measure of democracy, while column B uses the Gastil (1987) measure of political rights taken from the Alesina et al. data set. Standard deviations are reported in parentheses.

the analysis predicts that the fraction of a democracy's total income allocated to military spending will be significantly less than that of dictatorships.

Table 1 reports the averages of military spending as a share of gross domestic product in the sample period 1967–1989 for democratic and nondemocratic nations using two indexes to classify nations. In column A, the classification scheme is based on the index constructed by Alesina et al. (1992) which, for 118 nations, distinguishes democracies wherein two or more political parties compete for office (index = 1) from those with some form of elections but severe restrictions on the competitiveness of such ballots (index = 2), as well as from nondemocratic nations (index = 3). Using this measure, nations with an average index value (in the sample period 1950–1982 or the subperiod for which data are available) strictly less than 3 are classified as democratic. In column B, the classification scheme is based on Raymond D. Gastil's (1987) index of political rights. Available for only 117 nations, this index ranks nations on a scale from 1 to 7, with 1 representing the highest level and 7 representing the lowest level of political rights. Nations with an average score of political rights (in the sample period 1973–1982 or the subperiod for which data are available) strictly less than 5 are classified here as democracies. Using either classification scheme, the table indicates that military-spending shares are greater in nondemocracies than in democracies, as would be predicted by the analysis. The t tests, also reported in Table 1, indicate that the differences in means are statistically significant. Under the maintained assumption that the key distinguishing feature of a dictator is that she faces no electoral uncertainty, the data support the notion that electoral uncertainty imparts a negative bias on a nation's military spending.[17]

[17]To be sure, the simple correlations between the military-spending shares and the two measures of democracy are statistically significant at conventional levels. This result appears to be robust in the sense that the correlation remains significant upon controlling for differences in economic development (i.e., GDP per capita and industrialization). However, one has to exercise care in interpreting such simple, reduced-form evidence. Specifically, "opportunistic" dictators could be equally (if not more) uncertain about future rule as elected governors and, thus, driven to use arms as a means of protecting their power (e.g., see Grossman, 1991; S. Brock Blomberg, 1992). Thus, it is not clear whether dictators, on average, have a greater incentive to arm because they face no electoral uncertainty or because arming is necessary to secure their ruling positions. Extending the theoretical analysis to study the process by which such opportunistic dictators protect their ruling position from internal threats would be helpful for distinguishing these two hypotheses empirically.

III. Implications for International Conflict

Referring to the effect of electoral uncertainty on the parties' military-spending policies as a "distortion" or a "bias" is somewhat misleading, however, for it connotes a suboptimal outcome. In the context of the partial-equilibrium analysis above where military spending by other nations is taken as given, such an interpretation would be appropriate, since lower military spending implies a lower realization of future endowments. But, in the context of a general-equilibrium framework wherein the defense technology, $z(\cdot)$, depends on military spending by other nations, lower military spending can yield a better outcome—specifically, some degree of "cooperation" between nations implying greater consumption opportunities for all nations.

This section illustrates such a possibility, focusing on a simple extension of the two-period model above to a two-period, two-nation model of conflict. For simplicity, the nations are assumed to be identical with respect to J (the number of voters), initial endowments, peaceful investment technologies, and the preferences of the incumbent leaders as well as those of the voters. In period $t=1$, each nation chooses its military-spending policy in an effort to secure a proportion of (given) world resources for the next period $t=2$. To focus the discussion the defense technology for the domestic nation is specified as

$$(10)\qquad z(m,\tilde{m})=\frac{h(m)}{h(m)+h(\tilde{m})}Z$$

where $Z>0$ denotes the pool of resources to be "shared" by the two nations, the tilde ($\sim$) denotes the foreign nation's military-spending policy, and $h(\cdot)$ is a nonnegative increasing function. The defense technology is defined symmetrically for the foreign nation: $z(\tilde{m},m)=1-z(m,\tilde{m})$. Upon differentiating (10), one can verify the following:

$$(11a)\qquad z_m(m,\tilde{m})=-z_m(\tilde{m},m)>0$$

$$(11b)\qquad z_{\tilde{m}}(m,\tilde{m})=-z_{\tilde{m}}(\tilde{m},m)<0$$

$$(11c)\qquad z_{m\tilde{m}}(m,\tilde{m})=-z_{m\tilde{m}}(\tilde{m},m)>0 \quad \text{for } m>\tilde{m}$$

where $z_{\tilde{m}}$ denotes the partial derivative of the defense technology with respect to $\tilde{m}$ and $z_{m\tilde{m}}$ represents the cross partial derivative of this technology.[18] Economizing on notation, z is used to denote $z(m,\tilde{m})$ below.

A. *The Severity of Conflict Between Dictatorships and the Incentive To Cooperate*

As a basis for comparison, consider first the severity of conflict between the nations as reflected in the equilibrium level of military spending, when the nations are governed by dictators (D) with preferences summarized by μ^{I}. In period $t=1$, each faces a dynamic optimization problem, analogous to that of the political party of her respective nation, (8) with $P=1$. As described above in Section II-B, the first-order condition to this problem relative to m_1, equation (9) with $P=1$, implicitly defines the domestic dictator's optimal military-spending policy as a function of $\tilde{m}_1$: $m_1^{*\mathrm{D}}=r^{\mathrm{D}}(\tilde{m}_1)$. Analogously, the "reaction" function for the foreign dictator is given by $\tilde{m}_1^{*\mathrm{D}}=r^{\mathrm{D}}(m_1)$.[19]

[18]Note that with this general specification the assumption that $z_{mm}(\cdot,\cdot)\le 0$ might not be satisfied if $h''(\cdot)>0$: $z_{mm}=z_m[h''(m)/h'(m)-2h'(m)/(h(m)+h(\tilde{m}))]$. See Hirshleifer (1989), who provides an interesting analysis of two types of this defense technology. First, a "difference-logistic success function" where $h(m)=e^{\eta m}$ and $\eta>0$ would apply to those sorts of conflicts where the "winner" of the conflict cannot possibly take the entire prize—in this case Z. Under this specification, disarmament in the symmetric Cournot-Nash equilibrium is possible. By contrast, with the second specification, a "ratio success function" where $h(m)=m^{\eta}$ and $\eta>0$, disarmament cannot emerge in the symmetric Cournot-Nash equilibrium. Nonetheless, both types can be generalized to allow for asymmetries.

[19]Strictly speaking, these reaction functions would also depend on the nation's initial endowment and the dictator's preferences. However, because the analysis assumes that the nations are identical, this notation is conveniently suppressed. More importantly, note that the results to follow do not hinge on the assumption that the dictators' preferences are identical. Under an auxiliary assumption that $g(\cdot)$ is homothetic, their military-spending policies would be independent of their respective μ's.

Applying the implicit-function theorem to (9) with $P = 1$ shows that the sign of the slope of each dictator's reaction function is generally ambiguous. An increase in the enemy's arms influences the dictator's willingness to arm as it reduces the amount of resources available for investment in the second period. By virtue of the concavity of the production technology, this income effect on the nation's incentive to arm is unambiguously positive. However, an increase in the enemy's arms can also produce a substitution effect as it affects the marginal product of military spending. From (11c), the sign of this effect depends on the relative arms of the two nations. Specifically, if $m_1 < \tilde{m}_1$, an increase in military spending by the foreign nation reduces the marginal product of military spending by the domestic nation (i.e., $z_{m\tilde{m}} < 0$), implying that the substitution effect is negative. Conversely, if $m_1 > \tilde{m}_1$, then $z_{m\tilde{m}} > 0$, and the substitution effect is positive, reinforcing the income effect. In the symmetric equilibrium, however, where each nation takes the other nation's strategy as given, $m_1^{*D} = \tilde{m}_1^{*D}$, and the substitution effect is equal to zero. Thus, as shown in Figure 1, the two nations' reaction functions are increasing in the neighborhood of the Cournot-Nash equilibrium, indicated by NE(D, D).[20] At this point, each nation would increase its military spending in response to an increase in spending by its enemy.

However, given that $m_1^{*D} = \tilde{m}_1^{*D} > 0$ at NE(D, D), each nation's dictator has a incentive to commit to a lower level of military spending, since doing so induces the enemy nation to lower its spending as well. To illustrate this incentive, the analysis follows Avinash Dixit (1987) in examining the Stackelberg equilibrium. Suppose that the

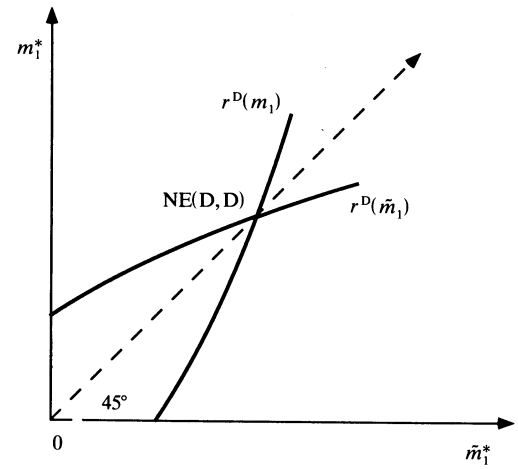

FIGURE 1. CONFLICT BETWEEN DICTATORSHIPS

domestic nation's dictator can precommit its military-spending policy. In this case, she solves the optimization problem in (8) subject to $r^D(m_1)$. The first-order condition to this problem relative to m_1, when evaluated at the symmetric Cournot-Nash equilibrium ($m_1^{*D} = \tilde{m}_1^{*D} > 0$), simplifies to

$$(1-\mu^D)\beta g'(i_2^{*D}) z_{\tilde{m}} r^{D\prime}(m_1^{*D})$$

which captures the indirect effect of an increase in the domestic dictator's military spending on its next-period utility through its effect on the foreign dictator's arming policy. By the second-order condition, whether the domestic nation's dictator would like to commit to a higher or lower level of military spending depends on whether this term is positive or negative. Since $r^{D\prime}(m_1^{*D}) > 0$ and an increase in arms by the foreign nation reduces the amount of resources available to the domestic nation (i.e., $z_{\tilde{m}} < 0$), this indirect effect is negative. That is, the domestic nation's dictator has a (local) strategic incentive to precommit to a lower level of military spending.[21] Indeed,

[20] One can verify that, in this symmetric equilibrium, a sufficient condition for the second-order conditions to be satisfied is that $h''(m) = h''(\tilde{m}) < 0$. Note that local stability of this interior solution requires that $0 < r'(m)r'(\tilde{m}) < 1$. Thus, the magnitude of the slope of each of the reaction curves drawn in the figure is less than 1. Finally, note that this figure implicitly assumes that $z(0, \cdot) > 0$ such that disarmament is a feasible outcome in the Cournot-Nash equilibrium. (See footnote 18.)

[21] There would be no local strategic incentive to precommit to another level of military spending in the symmetric equilibrium if $g''(\cdot) = 0$, as in Dixit (1987). More importantly, note that if the domestic nation were smaller than the foreign nation in terms of its initial endowment, $Z_1 < Z/2$, its dictator would nonetheless have an incentive to precommit to a lower level of military spending. Since $-z_{\tilde{m}m} \geq 0$ when

both nations would be better off if they could cooperate and set $m_1^D = \tilde{m}_1^D = 0$. If it were possible to enforce such cooperation, each nation would still secure half of the (given) available resources Z, while the amount of resources available for peaceful production in period $t = 1$ would be greater.

B. *"Cooperative" Behavior in a Noncooperative Equilibrium*

Whether such cooperation could be supported in equilibrium is questionable without some effective enforcement mechanism. In this two-period model, given that the other nation is cooperating, the best response by each nation is to build arms (i.e., not cooperate). More generally, in a finite-period setting, the absence of a commitment technology to enforce cooperative behavior casts doubt on the feasibility of such an outcome, even if the nations are governed by "benevolent" dictators. In particular, trigger strategies cannot support any degree of cooperation. But, to the extent that the electoral uncertainty associated with political competition lowers a nation's incentive to arm, it can support some degree of cooperation. In this context, political competition can serve as a "precommitment" mechanism.

Suppose, for example, that the domestic nation switches to a regime such that its governor now faces electoral uncertainty. Under the assumption stated in Proposition 1 (or if $\mu^N = 1$), this switch in regimes would be reflected in a downward shift of that nation's reaction function from $r^D(\tilde{m}_1)$ to $r^I(\tilde{m}_1)$ as shown in Figure 2. At the new "equilibrium" point, NE(I,D), fewer resources are spent on arms in period $t = 1$ by the foreign nation as well as by the domestic one. In both nations, more resources are available for current private and public investment activities. Of course, the amount

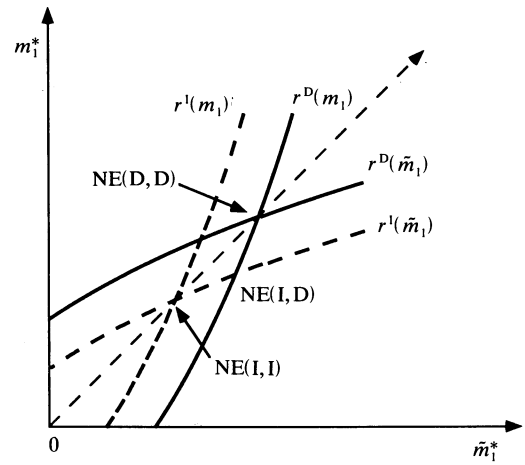

FIGURE 2. COOPERATIVE BEHAVIOR IN A NONCOOPERATIVE EQUILIBRIUM

of resources available to the domestic nation for private and public investment activities in period $t = 2$ is lower under this regime, while that available to the foreign nation is higher. Nonetheless, the domestic nation might favor this arrangement, as suggested by the previous analysis of the dictator's incentive to precommit.

Moreover, if $r^{I\prime}(\tilde{m}_1) > 0$ at the equilibrium point NE(I,D) as assumed in Figure 2, the foreign nation's dictator also has a local incentive to precommit at an even lower level of military spending. Provided that this incentive is sufficiently large, the foreign nation would find it optimal to switch to a democratic system as well. The Cournot-Nash equilibrium in this fully democratic regime is illustrated in Figure 2 at the point of intersection of the reaction curves $r^I(m_1)$ and $r^I(\tilde{m}_1)$, NE(I,I).[22] A comparison of the three equilibria reveals the following:

PROPOSITION 3: *Political competition reduces the severity of the conflict between nations, as reflected in the amount of resources allocated to military spending by both nations.*

$m \leq \tilde{m}$, such a precommitment would induce the larger nation to devote fewer resources to spending on arms. However, if the domestic nation were larger, it might have an incentive to precommit to a larger level of military spending, that is, if $-z_{\tilde{m}m}$ is sufficiently negative to imply that $r^{D\prime}(m_1) < 0$.

[22] Figure 2 assumes, for simplicity, that the incumbent policymakers in the two nations face the same degree of electoral uncertainty and that the degree of polarization between the two competing parties in the two nations is identical.

Proposition 2, in turn, suggests that the resource savings under the political-competition regime NE(I, I) relative to the dictator regime NE(D, D) is greater the smaller is the probability of reelection for the parties in office in the two nations in period $t = 1$ and the larger is the degree of polarization between the parties within the nations.

Surprisingly perhaps, the logic underlying Proposition 3 is similar to that underlying the main result of Tabellini (1990) which extends the two-period version of the model in Alesina and Tabellini (1990) to a two-nation model. In his analysis, where the inefficiencies associated with economic linkages between national economies tend to alleviate the inefficiencies associated with political competition (i.e., a positive bias in debt finance), international coordination of policies does more harm than good. By the same token, the "distortion" created by political competition in the present analysis alleviates the conflict between nations. Thus, cooperation between political parties within a nation could be deemed undesirable, even if it were feasible—that is, unless cooperation were also somehow feasible on the international level.[23]

Although the feasibility of cooperation between nations to support disarmament (i.e., set $m = \tilde{m} = 0$) is questionable when the time horizon is finite as noted above, some cooperation could be supported if the interaction between the nations were infinitely repeated and the future were not discounted too heavily—specifically, by threats and punishments via trigger strategies, as shown in Garfinkel (1990). The trigger strategy specifies a cooperative level of military spending lower than that which obtains in the one-shot game; cheating behavior would trigger a "punishment" involving a reversion to the Cournot-Nash equilibrium for the following s periods [$s \in (1, \infty)$]. Since the severity of the punishment relative to the temptation to cheat is increasing in the Cournot-Nash equilibrium level of military spending for any given s, the degree of "cooperation" supported in a trigger-strategy equilibrium (for a given s) is greater when nations are governed by dictators than when they are governed by elected officials.[24] Accordingly, an analysis of the infinite-horizon case, along the lines of Garfinkel (1990), would predict that the severity of conflict between nations is greater when nations are governed by elected officials than when they are governed by dictators. However, the notion that political competition can induce cooperation between nations would seem to be consistent with the casual observation supporting Kant's prediction that democratic nations seldom if ever fight each other.[25] Strictly

[23]This result is also consistent with the recent findings of Andrew A. John et al. (1993), who analyze a two-nation overlapping-generations model of arms accumulation and war initiation in which there exist externalities across generations within a nation and across nations within a generation. Specifically, cooperation among all generations within a nation (facilitated by an infinitely-lived nationalist social planner) increases the nation's stock of arms. The welfare implications, however, are not entirely clear as a higher stock of arms can either increase or decrease the likelihood of the outbreak of war. John et al. also find that cooperation between nations of a given generation need not be welfare-improving; by leaving future generations with a lower stock of arms, such cooperation could increase the likelihood of war for future generations.

[24]Similarly, in Susanne Lohmann's (1993) analysis, cooperation between political parties of one nation increases the benefits that the nation could expect to realize if they were able to make binding commitments to cooperate with the other nation, implying that cooperation between nations is more likely to be supported by trigger strategies in the social-planner regime than in the political-competition regime. Conversely, cooperation between political parties of one nation is more likely to be supported by a trigger strategy in a regime where nations are cooperating with each other. Thus, cooperation between nations and that between political parties of a single nation can emerge in a trigger-strategy equilibrium jointly, but not separately.

[25]There now exists a large body of formal statistical evidence that democracies are less likely to fight each other than are nondemocratic nations (see Bruce J. Bueno de Mesquita and David Lalman [1992] and references therein). Political scientists have offered a number of explanations as to why democratic nations

speaking, of course, the present analysis does not explain "wars." Nonetheless, assuming that the condition in Proposition 2 is satisfied, the data presented in Table 1 lend support to the analysis of the finite-period case.

IV. Concluding Remarks

The central insight of this paper is simply that political competition in one nation can induce cooperation between that nation and others. While the composition of peaceful investment (among public and private activities) that obtains in a democratic nation could be considered undesirable from the median voter's perspective, electoral uncertainty can reduce the severity of international conflict, thereby implying a greater amount of resources available for peaceful production on a global level. Analyses ignoring the effects of electoral uncertainty on the severity of conflict between nations are likely to understate the benefits of a democratic system.

An important extension of the theoretical analysis involves an investigation of the possible benefits (and costs) of political competition while relaxing the assumption that nations are identical. Although the paper's main result does not hinge crucially on this assumption, an examination of the importance of technological advantages in defense and production as well as asymmetries in initial resource bases for supporting cooperation between nations would be interesting. In this extension, one could characterize the conditions under which a dictatorship would choose to establish a democratic system given other nations' political institutions.

A related but perhaps more ambitious extension involves a study of the effects of political competition on a nation's economic growth. To be sure, a theoretical analysis of an extended version of the model above to capture the dynamic effects of private and public peaceful investment would identify a negative bias in these two types of spending and thereby suggest that political competition can dampen economic growth. However, the extended analysis would predict that this negative effect on growth be offset, at least partially, by political competition's effect to reduce the severity of international conflict. Consistent with this conjecture, the existing evidence on whether democracies grow faster than nondemocratic nations (see e.g., Alesina et al., 1992; John F. Helliwell, 1992) is mixed at best. Disentangling these two effects of electoral uncertainty on growth while accounting for heterogeneity among dictators is left for future research.

do not fight each other, building on a number of fundamental propositions about the ideologies of democratic states (e.g., that they share similar views toward the value of property rights and individual rights and freedoms and an abhorrence of violence) as well as on the nature of the political constraints inherent in a democracy. Bueno de Mesquita and Lalman (1992), however, provide evidence that questions the propositions concerning ideologies; and, they argue that an explanation based on political constraints cannot explain another empirical finding that democratic nations are neither more nor less likely to fight generally than are dictatorships unless asymmetric information is introduced. Of course, because this paper does not explain a nation's decision to go to war, it cannot possibly explain this second stylized fact. But, in light of the result of John et al. (1993), among others, that a smaller stock of arms can either increase or decrease the likelihood that one nation will initiate a war, the present analysis should not be seen as being inconsistent with this second empirical finding. In addition, note that the analysis of Gregory D. Hess and Athanasios Orphanides (1992) suggests that, because of differences in the features of political institutions across democracies, they need not be uniformly less prone to war.

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