



AN ECONOMIC LIMITATION TO THE ZONE OF DEMOCRATIC PEACE AND COOPERATION

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The zone of democratic peace and cooperation is the premier nontrivial fact of international relations. Recent research, however, has shown that the democratic peace is substantially limited to the economically developed democracies (Mousseau, 2000). Is the zone of democratic cooperation also limited to the economically developed democracies? With the observation of most nations from 1919 to 1992, robust support is found for this hypothesis. It appears that economically developed democracies are more than eight times more likely than other states to engage each other in an intense form of interstate cooperation: collaboration in militarized conflict. Democracies with per capita incomes of less than \$8,050, in contrast—77 percent of all joint democratic dyads—appear *less* likely than other types of states to collaborate with each other in militarized conflict. This result is consistent with the view that liberal political culture arises from economic development, and it is liberal political culture that explains the global zone of democracy, peace, prosperity, and interstate cooperation.

KEY WORDS: democracy, peace, conflict, cooperation, economic development, cultural materialism

Few would disagree that the zone of democratic peace and cooperation is the pre-eminent nontrivial fact of international relations. While democracies may fight other nations, they appear much less likely than other types of states to engage each other in both militarized disputes and wars (Babst 1964; Bremer, 1992, 1993a; Maoz and Russett, 1992, 1993; Rummel, 1983). At the same time, democratic nations appear more likely than other types of states to engage each other in various forms of interstate cooperation, including the formation of alliances (Bennett, 1997; Gaubatz, 1996; Siverson and Emmons, 1991; Thompson and Tucker, 1997), collaboration in milita-

Received for publication 26 March 2001.

An earlier version of this paper was presented at the 1999 Annual Meeting of the Peace Science Society (International), Ann Arbor, MI. For helpful comments I thank William J. Dixon, Erik Gartzke, Patrick James, John Oneal, Jim Ray, Bruce Russett, and the three anonymous reviewers.

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rized conflict (Mousseau, 1997), the engagement in trade (Bliss and Russett, 1998; Morrow, Siverson, and Tabares, 1998), and the formation of international organizations (Russett, Oneal, and Davis, 1998).

These patterns of democratic behavior seem to carry profound significance for grasping global politics. For one thing, the zone of democratic peace and cooperation presents itself as *prima facie* evidence against traditional, top-down Realist models of international relations. For another, the possibility of a world of peace and cooperation indicates that, after all the destruction of the twentieth century, there is hope for humanity after all. For these reasons, the apparent zone of peace and cooperation among democracies has and continues to receive a great deal of attention. Studies have shown, for instance, that the democratic peace is not a likely consequence of a myriad of confounding variables (Bremer, 1992, 1993a; Gleditsch and Hegre, 1997; Maoz and Russett, 1992 1993), statistical autocorrelation (Beck, Katz, and Tucker, 1998; Raknerud and Hegre, 1997), or reverse causality (Mousseau and Shi, 1999; Oneal and Russett, 2000; see James et al., 1999 for counterevidence).

More recent research, however, reports that there is a substantial economic limitation to the zone of peace. I have shown (Mousseau, 2000) that the pacifying impact of democracy is approximately twice as robust in joint economically developed dyads compared to other dyads—and the democratic peace is not even significant among poor democratic neighbors. This research puts a damper on notions that democracy alone pacifies relations among nations and suggests that the master variable may not be democracy but economic development—a variable long associated with democracy.

If the democratic zone of peace faces substantial economic limitations, does also the democratic zone of cooperation? This article seeks to answer this question. After reviewing the theory and evidence surrounding the question of democratic foreign policy behavior, I present a model of liberal political culture arising from economic development. I then show how democratic peace and cooperation may result from the interaction of democratic institutions with economic development. After constructing the test conditions, I present the empirical examination of a large number of interstate dyads from 1919 to 1992. The analyses show that, like the democratic peace, the zone of democratic cooperation is also limited to those democracies with developed economies. The article concludes by highlighting the significance of this research for studies of democratic peace and cooperation.

A ZONE OF DEMOCRATIC OF PEACE AND COOPERATION?

While numerous empirical studies have confirmed the pattern known as the “democratic peace,” most explanations for it have drawn on two institutional approaches, the “structural” and “normative.” In general, models in the former category presume that voters prefer to avoid paying the costs of war, and thus democratic institutions constrain leaders from going to war (Kant, 1982[1795]). In contradistinction, a “strategic interactions” variant of the structural approach assumes that voters press their leaders to avoid losing in war (Bueno de Mesquita, et al., 1999), which is thought to cause democracies to refrain from attacking other democracies.

Institutional–normative theories of democratic peace, in contrast, outline a path of causation from democratic institutions to democratic norms and values, and then peace. According to this view, democratic leaders who rise to power through the democratic political process are thought to be accustomed to the democratic norms of negotiation, compromise, and law, and then apply these norms, with each other, in their foreign relations (Dixon, 1993, 1994; Maoz and Russett, 1992, 1993).

These theoretical approaches aimed at explicating the democratic peace are not mutually exclusive, and empirical support has accrued for both. Consistent with the structural view, it seems democratic leaders are averse to paying the costs of war in battle-deaths (Bennett and Stam, 1996; Rummel, 1995; Siverson, 1995). In accordance with the strategic variant of the structural approach, it appears that democracies are more likely to win their wars (Lake, 1992; Stam, 1996) and prevail in militarized interstate disputes (Partell and Palmer, 1999). On the other hand, consistent with the normative view, it seems that when democracies do engage each other in militarized conflict they tend to resolve their disputes with negotiation (Dixon, 1994), compromise (Mousseau, 1998a), and law (Raymond, 1994). Also consistent with the normative view, the pacifying impact of democracy appears to strengthen over time after a transition to democracy (Hensel, Goertz, and Diehl, 2000).

Beyond the theoretical debate, research has firmly established that the democratic zone of peace is also a zone of cooperation. A number of studies have found that democracies tend to form alliances, at least in the post-1945 era (Bennett, 1997; Gaubatz, 1996; Siverson and Emmons, 1991; Thompson and Tucker, 1997). My own study of collaboration in militarized conflict—an intense form of interstate cooperation (see below)—found democracies to be significantly more likely than others to collaborate with each other but not with other states (Mousseau, 1997). More recent studies have confirmed similar patterns in regards to trade (Bliss and Russett, 1998; Morrow, et al., 1998), the joining of international organizations (Russett, et al., 1998), and cooperation as indicated with COPDAB data (Leeds and Davis, 1999).

In these ways, the democratic peace research program has yielded support for both structural and normative explanations, and it appears that the zone of peace is also a zone of cooperation. Nevertheless, more recent research calls into question the validity of virtually all these studies. This is because only a small number of these studies included control for economic development (Bremer, 1992, 1993a; Maoz and Russett, 1992, 1993), and virtually no one tested for a possible interaction effect of economic development and democracy. This is significant, because recent research indicates that the strength of the democratic peace is conditional to levels of economic development (Mousseau, 2000). Using conventional measures, data, and methods of analysis (from Oneal and Russett, 1999), I found that the poorest democracies are excluded from the zone of peace and that the substantive pacifying power of democracy is present only among the economically developed states. The implications of this finding are vast, for it suggests that virtually all of the empirical research in the democratic peace research program has been under-specified.

If the democratic zone of peace is conditional to economic development, is also the democratic zone of cooperation? This study seeks to answer this question. Before turning to the empirical analyses, the next two sections present the basis for expecting this economic limitation to the democratic zone of peace and cooperation.

THE ONTOLOGY

The late popularity of constructivism in the field of International Relations rests in part because the more positive version of the approach (Wendt, 1999) gives importance to explaining and predicting the formation of political preferences. Since what most political actors do—how constituents vote and how leaders behave—probably depends foremost on what they covet, constructivists argue that it is preferences we should seek to explain. Most models of international relations, however, treat the formation of preferences as exogenously given. Morgenthau, (1985[1948]) and Waltz (1979), for instance, presume actors to value, respectively, power or security. In general, liberals make these same assumptions—or assume a first preference ordering for material wealth—and predict cooperation to occur when uncertainty is reduced (Axelrod, 1984), or when the proper institutions are in place (Oneal and Russett, 1999). Models in international relations often predict strategic choices or make varying assumptions about preference orderings, but very few seek to *predict* varying preferences.

The constructivist emphasis on preferences notwithstanding, constructivism is not a theory but an ontology, and as such cannot, alone, explain anything (Wendt, 1999). Like realist and rationalist ontologies, the core untestable assumptions need additional postulates to build actual empirical theory. But it is one thing to assert the benefits of predicting preferences; it is quite another to construct an empirical theory that predicts varying preferences. As Moravcsik (1997, p. 535) describes the prevailing view: “research into domestic preferences is overly demanding, if not impossible.” This is why Wendt advises a turn to anthropology (1999, p. 372), a discipline generally aimed at explaining the emergence of values and thus preferences. Whereas traditional theory in international relations admonishes a turn to anthropology (Waltz, 1959, pp. 42–79), I am aware of no scientific grounds for ignoring this field of research. Indeed, it was with cultural materialist ontology in Anthropology that I predicted the economic limitation to the democratic peace (Mousseau, 2000).

In brief, cultural materialist ontology highlights three key aspects of human existence: the infrastructure (material economy), the structure (institutions), and superstructure (culture) (Harris, 1979; Murphy and Margolis, 1995, p. 2). Cultural materialists assert that there are predictable and causal relationships among these three elements, but the material base has the strongest influence over the other two (*ibid.*, p. 3).¹ This is because the ontology assumes that, in the long run, human beings are economically rational and thus, with a time lag, institutions and culture tend to bend according to economic expediency (with allowance for feedback effects). For example, if the values of a socioeconomy preclude the consumption of any protein source other than fish, but a long-term ecological change forces a depletion in fish stockpiles, over time the regularized but socially unacceptable consumption of the alternative source of protein—say dogs—will become socially acceptable.

Based in science, cultural materialist explanations have the potential to yield predictions that can be subject to empirical testing. Since it is the infrastructure that is considered the primary source of causation, it is economic (infrastructural) variables that are exogenous, with social and political institutions (structure) and cultural preferences (superstructure) explained. In this way, cultural materialist ontology has been

successfully applied across disciplines, including studies of Asiatic civilizations (Harris, 1968, p. 672), archaeological discoveries in the American southwest (*ibid.* pp. 674–675), the sacred cattle in India, the potlatch of the Kwakiutl, warfare among the Yamanomi (Fergusson, 1995), and numerous other applications (Murphy and Margolis, 1995). Indeed, indicative of the power of cultural materialist ontology is the fact that it arose independently in two separate and disconnected disciplines, anthropology and literary studies (Jackson 1996, pp. 15–17). Nevertheless, the ontology is not a dominant paradigm in any field. Only in anthropology does the ontology define a scientific research program, and even there it remains defended by only a small but resolute minority. In the following section I present a theory using cultural materialist ontology and therein demonstrate those political institutions (structure) and preferences (superstructure) that may arise from market-oriented economic development (infrastructure).

THE MODEL

If the economy can predict culture and institutions, then what political culture and institutions might emerge from economic development? To answer this question we must first grasp that economic development means a complex division of labor. Nations with more developed economies thus include greater proportions of society in the economy. Second, there are, historically, two ways in which nations with complex divisions of labor have been predominantly organized—by the state and by the market. In the former case, individuals are dependent on bureaucratic authorities for their welfare—authorities decide where individuals live, the clothes they wear, and the food they eat. In contrast, in developed economies predominantly organized by the market, individuals are relatively free to make their own choices, as the complex divisions of labor are linked not by central authorities (as in fascist Germany and Communist USSR), but with a complex array of overlapping and ever-changing contracts (as in the United States and Sweden²).

If the economy can predict political preferences, then with market-oriented development comes at least five political values and preferences that are relatively absent in other types of socioeconomies (Mousseau, 2000, pp. 476–478; 2002). First, for complex divisions of labor to be linked with exchange, the explicit pursuit of self-interest must be socially acceptable; otherwise the market could not function. Studies have shown that in less-developed, and thus nonmarket, societies, economic cooperation is more likely to be explicitly rationalized not with self but group interest (Polanyi, 1957[1944], pp. 43–55). Second, the social acceptance of self-interest facilitates the routine outcome of cooperation through the processes of negotiation and compromise. These processes depend on the expression of self-interest and are thus eschewed in other socioeconomies (*ibid.*, p. 49).

Third, developed economies integrated with exchange must be organized symmetrically, or based on equitable or common law, as each party in a contract of exchange must be equally susceptible to the obligations in the contract. Otherwise individuals would be weary of contracts and the market economy could not function. Fourth, it follows that individuals in developed market economies tend to perceive an interest in the equitable enforcement of common laws and, related to this point,

social prestige is accrued through the sanctity of contract and respect for such common laws.

Fifth, in contrast to societies not integrated with exchange, in developed market economies the explicit motivation behind most economic transactions is the receipt of the gains from the transaction. In other socioeconomies the explicit motive is generally not the immediate gain from the transaction itself but the maintenance of the long-term reciprocating or gift-giving relationship among the cooperating parties (Tandy and Neale, 1994, pp. 19–20). This point carries far-reaching social and political implications: if the transaction is more important than the relationship, then two strangers sharing the culture of exchange can easily engage in economic cooperation. This makes the culture in developed market economies one where social ties are relatively weak but renders the size of the market community potentially universal.

In this way, if economic structures influence cultural values and mores (Harris, 1968, 1979; Murphy and Margolis, 1995), then nations with developed market economies are predicted to have political cultures that, compared to other cultures, are more likely to be characterized with respect for individual choice and freedom, normalized processes of negotiation and compromise, legal and social equality, widespread respect for common law, and weak but universal extensions of trust, empathy, and social identity. The classical sociologists long ago observed the higher levels of individualism, freedom, and respect for the rule of law in societies with advanced material infrastructures (Durkheim, 1984[1893]), as did Braudel, who observed that, “everything” rests “on the broad back of material life” (1979, p. 63).

Aside from vague notions of diffusing “Western” values (Fukuyama, 1995), political evolution (Parsons, 1964), or the observation of democratic institutions themselves (Diamond, 1997, p. xix; Kowert and Legro, 1996), studies in the democratization and democratic consolidation literature have been unable to identify the origins of liberal values. Moreover, while many studies vaguely identify the values of individual choice, tolerance, and so on, as liberal, they universally do so in an inductive and even circular manner—by first picking some representative democratic cultures, and then observing their values (Peceny, 1999, pp. 99–100). In contrast, the model herein deduces the specific content and character of liberal values and identifies their origins in the developed market infrastructure. It is obvious that market culture is liberal culture, and numerous scholars have argued that liberal culture is essential for democratic stability and longevity (e.g., Almond and Verba, 1963; Dahl, 1971, 1989; Huntington, 1984; Inglehart, 1997; Lipset, 1959). In this way, nations with developed market-oriented economies invariably have stable democratic institutions—and democratic government without a developed market economy is illiberal, artificial, and unstable (Mousseau, 2000, pp. 478–480; 2002).

How does the market norms model relate with traditional cultural, Marxist, or liberal assumptions in political science? The answer depends on how one interprets these broad points of view. While the model is a cultural one, it departs radically from most cultural theories of global politics, which generally assume culture as exogenous (Huntington, 1996). Not only have such models not performed very well in international relations (Henderson, 1998; Russett, et al., 2000), but they have difficulty accounting for cultural change (Rogowski, 1974). The market norms model,

in contrast, unambiguously identifies the source and direction of change from a rise of a market economy and thus, unlike most cultural theories, offers a ready explanation for the known emergence of liberal culture in postwar Germany, Japan, and, more recently, Singapore and South Korea. While Inglehart (1990) draws on economic factors to explain cultural change, his model is predominantly in the Weberian tradition of culture affecting economic performance (1988).

While cultural materialist ontology uses Marxist terminology and shares the Marxist identification of the economy as exogenous, the model is not deterministic, dialectic, or class-centric, and the model does not impose a monotonic, evolutionary, or inevitable view of history. To the extent that one views Marxism as an instrumental rational point of view, Marxism and the market norms model are unambiguously incompatible.

While the model shares some versions of the classical liberal view that human nature is subject to modification, the model departs from classical liberalism in that it identifies the source and nature of “enlightenment” in economic norms rather than rational self-interest, education, or governing structures. Commercial liberalism assumes market culture as a constant in human nature and predicts the consequences of market institutions from this assumption. In contrast, the market model predicts market culture (“enlightenment”) to arise with a market economy and predicts market institutions (a freer market and republican democracy) and market ideology (classical liberalism) as a consequence. While classical liberals identify democratic institutions, trade (dependency), and international organization membership as exogenous predictors of peace among nations (Russett, Oneal, and Davis 1998), the market norms model predicts democracy, trade (per capita), international organization membership, and peace and cooperation as outcomes of market development. Since probabilistic relations are predicted among the structure, infrastructure, and superstructure, the market model is not at odds with the classical liberal view that trade (intra and international) and liberal (republican) institutions may promote market development—but it departs from classical liberalism in that it identifies the primary source of causation in the economic infrastructure. Thus, on the surface the market model shares some similarities with traditional cultural determinism, Marxism, and liberalism; but beneath the surface—at the level of ontological assumptions and deduced paths of causation—the market norms model clearly departs from these traditional paradigms in political science.

Hypotheses

The model moves easily from the national to the international level with the adoption of the same assumption used in most models of democratic peace (Kant, 1982[1795]; Bueno de Mesquita, et al., 1999): that democratic leaders value their party’s tenure in office and therefore pay close attention to the preferences of the median voter. If the median voter in developed market-oriented democracies shares market constructions as predicted, then the leaders of such states are likely to share such values and, if not, at least have an incentive to pursue them in public policy. In this way, the model not only predicts democratic consolidation from market development but also an interactive effect of democracy and development on foreign policy.

Democratic institutions translate popular domestic preferences into public policy, and thus the leaders of states that have both developed market-oriented economies (and thus liberal culture) and democratic institutions will generally behave as if they think alike and share common interests in international affairs. Common notions of legal and social equality foster mutual respect among such states; shared respect for individualism and equity—and universal extensions of empathy—foster common notions of, and preferences for, human rights; shared recognition of common law yields a mutual perceived interest in international organization, law, and regimes.

Sharing in common the nonparochial notion that the pursuit of self-interest is not incompatible with extended trust, when joint conflict does arise among the leaders of developed market democracies they easily resolve their differences with negotiation and compromise facilitated with the principles of equity and law. Studies have shown that democracies are more likely than other kinds of states to settle their joint differences with negotiation (Dixon, 1994), compromise (Mousseau, 1998a), equity (Dixon, 1993), and law (Raymond, 1994). While none of these studies separated the market-oriented from the other democracies, the market model predicts that these studies—including my own—are under-specified: that explanatory power would be enhanced if the developed market democracies were not grouped with the other democracies.

In this way, the market model significantly departs from all previous explanations for the democratic peace in that it yields several unambiguous and novel predictions, the primary one being that the democratic peace is driven predominantly by the democracies with market infrastructures: the advanced market democracies. These states continue to engage in coercive diplomacy with other states, however, because the developed democratic peace rests on *shared* constructions of negotiation and compromise, legal and social equality, respect for common law, and extensions of trust. The median voters in democracies without developed market economies, in contrast—and the leaders of all other states—are predicted to have not market but other more parochial political values and social constructions.

Just as democratic peace is predicted to be conditional on both states having developed market economies, so is the zone of democratic cooperation. Representing constituents that hold in common norms of cooperation managed with explicit self-interest, equity, and a universal form of extended trust, the leaders of market democracies are predicted to manage joint cooperation as easily as merchants within market cultures manage to buy and sell their wares. Institutional-based theories of democratic cooperation, whether structural (Leeds and Davis, 1999) or my own normative (Mousseau, 1997), do not predict an economic limitation to the democratic zone of cooperation. Nor do classical-liberal prescriptions (Oneal and Russett, 1999) make such predictions. In this way, the market norms model yields the expectation that the known pattern of democratic cooperation may be limited to the market-oriented democratic nations—a novel claim asserted before the present research (Mousseau, 2000, p. 482).

Nevertheless, confirmation of this empirical claim will not overrule other possible explanations for the result. As with all correlational studies, any test for predicted effects can only indirectly test the theory, and thus causation must be assessed on the strength of a theory's explanatory and predictive power compared to competing theories, and simplicity. In this light, the market norms model offers a novel and

plausible explanation for two leading puzzles in political science: the linkage between development and democracy (Burkhart and Lewis-Beck, 1994; Przeworski, et al., 1997), and the zone of democratic peace and cooperation. Moreover, this explanatory power is accomplished from just two simple and plausible assumptions: that democratic leaders value their party's tenure in office (Bueno de Mesquita, et al. 1999), and that economic conditions affect a nation's culture and institutions (Harris, 1979). As I have argued elsewhere (Mousseau, 2002), the model also offers cogent explanations for, among other things, the emergence of civil society, the convergence of public policy in developed democracies, and even the rise and fall of democracy in classical Greece—noted by economic historians as the only civilization in the premodern era to have a vibrant market economy.

In addition, a better theory also produces novel facts, and “further credibility to the overall explanation is added if these novel hypotheses are borne out by the evidence” (Bueno de Mesquita, et al., 1999, p. 792; see also Vasquez 1993, pp. 304–308). As discussed, just in the field of International Relations these novel facts include the predictions that advanced market democracies are more likely than other states (including other democracies) to ally, agree on issues, and join international organizations (Mousseau, 2000, p. 482). The prediction that the democratic peace is a pattern much more robust among the advanced market democracies has already been “borne out by the evidence” (*ibid.*). Is the zone of democratic interstate cooperation also more robust among the advanced market democracies? Confirmation of this hypothesis would not mean the model is true—but it would mean that further exploration on these grounds is in order. The following sections are aimed at testing this hypothesis.

RESEARCH DESIGN

As discussed above, a number of interstate interactions indicate cooperation among nations, including the formation of alliances (Bennett, 1997; Gaubatz, 1996; Siverson and Emmons, 1991; Thompson and Tucker, 1997), international organizations (Russett, Oneal, and Davis, 1998), and interstate trade (Bliss and Russett, 1998; Morrow, et al., 1998). In this study, I gauge a very intense form of interstate cooperation: collaboration in militarized interstate conflict. Collaboration in militarized conflict is an intense form of interstate cooperation because not only does collaboration commit the national security of one nation to another, but to act in tandem collaborating states must often cooperate across multiple layers of intergovernmental interactions—and in the process share closely guarded secrets at the highest levels of national security. For instance, to collaborate in the recent attack on Serbia, the NATO democracies not only committed themselves to stay the course through the conflict—despite the risks and costs involved for each state—but these states also linked multiple layers of their bureaucracies, military and civilian, to coordinate their activities.

In this way, just as the engagement in militarized conflict indicates a very intense level of hostility between nations, collaboration in militarized conflict indicates a very intense level of cooperation between nations (Mousseau, 1997). In corollary, however, it follows that just as the absence of militarized conflict between nations does not indicate an absence of hostility, the absence of militarized collaboration

between nations does not indicate an absence of cooperation. But this is a dilemma that applies to all event count indicators of international conflict and cooperation, including alliance formation and international organization (IO) membership. Compared to alliance formation and joint IO membership, however, collaboration in conflict probably occurs only among states that share common aims in the most salient realm of national security. States frequently ally with enemies, and enemies often share common memberships in IOs. By observing a very intense measure of interstate cooperation—and by controlling for opportunities to engage in such cooperation (see below)—militarized collaboration can be viewed as a reliable indicator of intense cooperation between nations.³

Since the research question concerns the presence or absence of cooperation between states, the appropriate unit of observation is the interstate pairing, or dyad of nations. Are pairs of states where both have advanced market economies and both are democratic more likely than other kinds of dyads to collaborate in militarized conflict? In addition to observing democracy, development, and collaboration in history, it is necessary to account for the opportunity to collaborate. In a previous study I found several factors to favor militarized collaboration between nations: major power status, the presence of an alliance, geographical proximity, and regime maturity (Mousseau, 1997). Since all of these factors may also correlate with market democracy, they all may confound the test hypothesis. The exception is control for alliances, as the market norms model predicts alliances to form between market democracies, rendering this a predicted and intervening rather than confounding variable. Control for predicted intervening variables are not appropriate in tests of theoretically-driven hypotheses (King, Keohane, and Verba, 1994, p. 173). Nevertheless, to examine the possibility that collaboration among market democracies may be a consequence of Cold War alliance structures, I report separate analyses of only the interwar (1919–1939) period. In addition, I also add control for the independent impact of economic development, relative capability, hegemonic status, collaboration history, and trade interdependence—rendering the empirical analysis a highly rigorous test of the hypothesis. Below I address the data sources and operationalizations of the dependent and primary independent variables, followed by a discussion of the theory, operationalizations, and data sources of the control and intervening variables.

Dependent Variable: Militarized Interstate Collaboration

Most conflicts between nations are probably settled amiably, or wither away unresolved and unnoticed. Infrequently, an ongoing interstate dispute is salient enough, and a solution so untenable, that one party or another is compelled to threaten, display, or use military force to achieve its aims. When a state militarizes a conflict by directing its threat, display, or use of force against multiple parties, or when two or more nations make a common threat, display, or use of force against one or more states, we have the occurrence of a multilateral militarized interstate conflict. Two or more states are in militarized collaboration when they are on the same side at the start of a militarized interstate conflict (Mousseau, 1997, p. 74).

For data on dispute collaboration I rely on the Correlates of War Militarized Inter-

state Dispute (MID) data set (Jones, Bremer, and Singer, 1996).⁴ The MID dataset identifies Side A as the side that first threatened, displayed, or used force militarizing a dispute, but I treat collaboration on both sides—Side A or B—as equivalent. This is because, in the rough world of international politics, at the point of militarization of a dispute the hostility level between nations is probably intense enough that the first side to threaten, display, or use force may be simply reacting to a clear and impending threat from the other side. At the crossing of a previous (or following) hostility threshold, the target collaborators may very well have been (or be) the initiating collaborators.

For instance, the MID dataset identifies Poland as the first state to actually threaten, display, or use force in the dispute that led to World War II, even though Germany is identified as the revisionist originator of the dispute. For domestic propaganda purposes, Hitler often managed to stage events in such a way that Germany's victims appeared to be the first to threaten or start militarized action (Shirer, 1960). As a result, the MID coding rules assign Poland on side A in this dispute—in accordance with the historical record—but it is far from clear that we can give substantive importance this label.⁵ Therefore, it seems appropriate to follow my previous coding (Mousseau, 1997) and treat collaboration on both sides of a dispute—side A (initiator) or side B (target)—as equivalent evidence of a most intense form of cooperation between nations.⁶

Another issue involved in coding militarized collaborations is whether to give greater weight to collaborations that reached higher levels of dispute intensity. After all, collaboration in war is probably more intense than collaboration in militarized disputes short of war. However, I treat all militarized dispute collaborations equally, for several reasons. First, since all wars start as disputes, the MID data include all wars. Second, we cannot draw confident inferences from collaboration in wars, as there are too few cases of such collaborations and most of these are associated with World War II—a prominent but atypical event. Third, collaboration occurs at the start of militarization of a dispute, and in most cases it is not clear at this point whether a dispute will escalate to war. If it does, some of the original collaborators may have since withdrawn from participation in the dispute, while other newcomers may have arrived. Finally, once militarization begins a host of other factors come into play influencing escalation (Bremer, 1993b), and thus the set of explanatory variables for dispute collaboration may be quite different from the set for war collaboration.

Because most data for the independent variables are aggregated annually, the unit of observation is the interstate dyad-year. Preliminary tests indicate that very few collaborations occur twice in the same dyad-year, so the dependent variable is a dichotomous indicator of whether or not a dyad-year experienced a dispute collaboration. Following the emerging norm in conflict studies (Oneal and Russett, 2001, p. 472), collaborations that continued into subsequent years were not counted as collaborations in those subsequent years.

Independent Variables

Democracy Low

Because of the critical importance of the measure for democracy, I report the results with two separate indicators: the Polity III (version 98) summated index and Vanhanen's (2000) continuous index. The 21-point Polity III index is commonly used in studies of conflict (e.g., Oneal and Ray, 1997; Mousseau, 2001; Werner, 2000), and is based on coders' assessments of five regime characteristics: degree of constraints on executive authority; competitiveness of political participation; competitiveness of executive recruitment; openness of executive recruitment; and degree of regulation of political competition (Jagers and Gurr, 1995). Vanhanen's index is the product of two dimensions, electoral competition and participation. The former is based on the share of votes won by the largest party; the latter is based on the percentage of voters from the whole population (Vanhanen, 2000, p. 253). In the research sample the two measures correlate at 0.83 (Pearson's r).⁷

Necessarily omitted from the analyses are cases where democracy data are missing or where the state was undergoing a regime transition, interruption, or interregnum. In addition, because the democracy data are aggregated annually, if a state's democracy level changes from one year to the next we do not know if a collaboration (or a noncollaboration) occurred while the state had the current year's level of democracy or the previous year's. To help ensure the accuracy of this critical measure, I omitted all cases where the state in the previous year was undergoing a regime transition, interruption, or interregnum (or the data in the previous year were missing). Similarly, if a state changed more than 5 points from the previous year (on the 21-point Polity III measure) we do not know the status of the state through the current year, so these cases were also omitted.⁸

In my earlier study of collaboration I estimated several continuous measures of democracy, including an interactive and similarity model, and found the most explanatory power using the level of democracy of the less democratic state for each dyad (Mousseau, 1997, p. 81–82). The higher the democracy score of the less democratic state in a dyad the more congruent and democratic must be the two states' governing institutions. Thus, the success of this "weak link" (Dixon, 1993, p. 51) specification shows that the democratic peace is not monadic but a consequence of shared norms or structures.⁹ Consequently, I assess dyadic *democracy low* with the level of democracy of the less democratic state for each dyad-year.

Development Low

Beyond the market norms model, economic development may have an independent impact on collaboration. The greater demand for resources and markets with development creates an interest in the affairs of other states (Choucri and North, 1975), and neo-Marxists would predict developed states to collaborate as they aim to exploit other states (Wallerstein, 1974).

Given the critical importance of this variable, like democracy (above), I report results with two separate indicators for development: gross domestic product per capita (GDPpc) and energy consumption per capita (both logged). I obtained GDPpc data from the Penn World Table's variable RGDPCH, calculated in constant dollars

with the Chain index (Summers and Heston, 1991). Data from the Penn World Table are available for most countries from 1950 to 1992—setting the temporal limits of most of the analyses. Since GDPpc varies little from one year to the next, I filled missing values by extrapolating between data points using a natural cubic spline.

For the second measure of development, I obtained energy consumption data from the Correlates of War project (see Bremer, 1992). These data are often used to assess development (Burkhart and Lewis-Beck, 1994; Dixon, 1994), and are available for most countries farther back in time—allowing for a separate test of the interwar period (1919–1939). The two measures, GDPpc (logged) and energy consumption per capita (logged), correlate at 0.82 (Pearson's r). For both indicators I followed the “weak link” principle and converted to a dyadic measure by considering the level of development (logged GDPpc/energy consumption) of the less-developed state for each dyad-year, a variable I call *development low*.

Market Democracy Low

To assess the test hypothesis that the democratic cooperation may be limited to—or more robust among—the advanced market democracies, the interactive term *market democracy low* is calculated as the product of development low and democracy low. Such a measure reaches high values only when both states in a dyad are highly democratic and both have advanced economies. Of course, an important caveat of the market norms model is that “development” means market-based development—where an economy's complex division of labor is integrated with exchange. While most developed economies have been market oriented (Bremer, 1993a, p. 317), there are a few that were not. The tiny oil-rich kingdoms of the Persian Gulf and the East European communist regimes before 1989 are both cases where relatively high levels of “development” (GDPpc/energy consumption) coexisted with either simple divisions of labor (the former) or an absence of a market (the latter).

Nevertheless, those few states with high levels of development but weak or non-existent norms of exchange will not violate the epistemic assumptions of the interactive term. This is because historically virtually all democracies that have had high levels of development have had them because their complex divisions of labor were integrated with exchange.¹⁰ In contrast, virtually all nondemocratic states with relatively high levels of “development” (GDPpc/energy consumption) have had either relatively simple divisions of labor (e.g., the oil-rich kingdoms), or their complex divisions of labor were integrated not with a market but by the state (e.g., the fascist and communist dictatorships). As the model would predict, all of these cases have been associated not with democracy but with extreme autocracy. Given that low values of either democracy low or development low will yield low values of the interactive term *market democracy low*, the interactive term serves its epistemic function: it assesses the degree to which both countries in a dyad are democratic and both have developed market economies.

Control and Intervening Variables

Major Power Status

Major powers are those states that have or seek to have global influence. Natu-

rally, it appears that major powers are more likely than minor powers to collaborate in militarized conflict (Mousseau, 1997). From 1919 to 1992 the Correlates of War identifies the major powers as France, Great Britain, the United States, China (after 1949), Italy (before 1944), Russia (after 1921), and Germany and Japan (before 1945 and after 1990). Five of these eight states were democracies with advanced market economies while they were major powers. This means that an empirical pattern of market-oriented democratic collaboration may be simply a consequence of major powers being market democracies. To control for this possibility, I add the variable *major power*, which equals 1 if at least one state in a dyad is a major power, and equals 0 otherwise.

Geographic Contiguity

It appears that direct geographic contiguity (i.e., state to state), but not indirect contiguity (i.e., state to dependency to state), is associated with collaboration between nations (Mousseau, 1997, p. 80). Direct geographic contiguity probably affects the opportunity for nations to collaborate, and it is plausible that processes of economic and political diffusion may tend to render market democracies geographically close. Therefore, the analyses will include control for direct geographic *contiguity*, which equals 1 if the two states share common borders or are within 400 nautical miles of open water and 0 otherwise.

Regime Maturity Low

It does appear that older regimes are more likely to collaborate with each other in militarized conflict (Mousseau, 1997). This may be a consequence of time and reciprocity (ibid., p. 78; Axelrod, 1984, p. 12). If economic development stabilizes democratic institutions for any reason, then developed democracies will tend to have more mature institutions. This means that a pattern of market democratic collaboration may be simply a consequence of their institutional maturity. To control for this possibility, I obtained the DURATION variable from the Polity III (version 98) data set, which gives a count for the number of years since a nation's last abrupt change of institutions, or the year 1900. In accordance with the "weak link" principle, the variable *regime maturity low* is the DURATION value (logged+1) of the less mature state for each dyad-year.¹¹

Relative Capability

Realist theories of international conflict give importance to the relative power, or capability, of nations. Stronger states may have the capability to force collaboration upon weaker states, and there may be some comparative advantage in collaboration among states of different sizes (Boyer, 1993). On the other hand, weaker states cannot significantly contribute to the stronger state's power, so stronger states may not have the incentive to collaborate with weaker ones. Either way, nations with developed economies will tend to have more capability than others, and hence a pattern of collaboration among market democracies—or between market democracies and small states—may be a function of relative power. To control for this potentially confounding effect, I obtained data from COW Composite Index of National Capabilities (CINC) data set (Singer and Small, 1995). The CINC gauges national

capabilities from a summated index of national shares of global population (total and urban), economic production (energy consumption and iron/steel production), and military capability (number of military personnel and expenditures). I assess *relative capability* as the level of the stronger state's CINC score divided by the weaker state's score, for each dyad-year. I log-transformed this measure to smooth out extreme values, yielding a range from 0 to 9.57.

Hegemonic Status

Hegemonic stability theory expects the hegemon to enforce the rules of the international system (Gilpin, 1981). In conjunction with power transition theory (Organski, 1968), we might expect the hegemon to frequently collaborate with other satisfied states as they enforce their preferred global status quo. During and after the Cold War few would object that the hegemon was the United States—an advanced market democracy. It follows that hegemonic status may confound the hypothesis test, as a pattern of collaboration among market democracies may be a consequence of the hegemonic U.S. collaborating with allies as it enforces the status quo. Consequently, I include control for *hegemonic status*, which equals 1 after World War II and if the dyad contains the hegemon—the U.S.—and 0 otherwise.

Trade Interdependence

The universalist and individualist nature of liberal-market culture means that the people in market cultures should be expected to roam the world looking for opportunities for profit. This renders foreign trade per capita a predicted and intervening variable that should not be on the righthand side in the analyses herein (King, Keohane, and Verba, 1994, p. 173). However, trade per capita is not the same as trade interdependence (trade/gross domestic product), and it is reasonable to expect trade (Oneal and Russett, 1999) and financial interdependence to (Gartzke, 2001) foster a common interest and thus collaboration between nations. Democratic nations trade a lot (Bliss and Russett, 1998) and thus may tend to be more interdependent than others. Moreover, if trade does promote prosperity, then any impact of market democracy on collaboration may be a consequence of trade and financial interdependency.

Thus, to the extent that trade per capita predicts trade interdependence, we should be weary of including trade interdependence as a control variable in the foregoing analyses. For this reason I include control for it separately. To gauge trade interdependence I obtained interstate trade data from Oneal and Russett (1999). Drawing on IMF statistics, Oneal and Russett assess country *i*'s dependence on trade with *j* as the sum of trade *ij* divided by the GDP of *i*. Consequently, the dyadic variable *trade interdependence* is gauged with the level of dependence of the less dependent state for each dyad-year.

ANALYSES AND RESULTS

The analyses start with an estimate of the impact of democracy on interstate collaboration with the control variables: major power status, contiguity, regime maturity low, relative capability, and hegemonic status. From this base, control is then added for development low, followed by the interaction term for market democracy

low (democracy low*development low). Given the binary nature of the dependent variable—and the time-series cross-sectional nature of the data—all the analyses include control for temporal dependence managed with Beck et al.'s (1998) cubic spline variables.

The first model in Table 1 reports the logit regression estimate of the impact of democracy on the probability of militarized interstate collaboration. To be consistent with the following models in the table—which are constrained to the years 1950 to 1992 because of limitations on the development indicator—the sample includes most dyads from 1950 to 1992. As can be seen in model 1, the democracy coefficient (0.03) appears positive and significant. This accords with my previous study of interstate collaboration (Mousseau, 1997) and shows that the impact of democracy holds even with the added controls for relative capability, hegemonic status, and temporal dependence. All of the control variables are significant and in their expected directions—major power status (1.79), contiguity (2.41), regime maturity (0.21), and hegemonic status (2.26)—all increase the probability of collaboration. In accordance with the parity-favors-collaboration hypothesis, it appears that the greater the difference in capability of two states the lower the likelihood of collaboration (−0.36).

Table 1
Logistic Regressions of Dyadic Measures of Democracy, Development, and Developed Democracy on the Probability of Militarized Interstate Collaboration, with Control Variables, Most Dyads 1950-1992.[†]

| <i>Variable</i> | <i>Model 1</i> | | <i>Model 2</i> | | <i>Model 3</i> | |
|------------------------------------|----------------|-----------|----------------------|-----------|---------------------|---------------------|
| Democracy low | 0.03 | (0.01)*** | -0.01 | (0.01) | -0.34 | (0.16) [‡] |
| Development low | — | — | 0.79 | (0.14)*** | 0.55 | (0.18) [‡] |
| Democracy low* development low | — | — | — | — | 0.04 | (0.02)** |
| Major power | 1.79 | (0.28)*** | 1.54 | (0.28)*** | 1.51 | (0.28)*** |
| Contiguity | 2.41 | (0.22)*** | 2.22 | (0.22)*** | 2.20 | (0.23)*** |
| Regime maturity low | 0.21 | (0.10)** | 0.01 | (0.10) | -0.05 | (0.11) |
| Relative capability | -0.36 | (0.07)*** | -0.32 | (0.07)*** | -0.31 | (0.07)*** |
| Hegemonic status | 2.26 | (0.29)*** | 2.18 | (0.29)*** | 2.20 | (0.29)*** |
| Intercept | -7.97 | (0.35)*** | -13.14 | (0.99)*** | -11.07 | (1.38)*** |
| Log-likelihood | -736.9 | | -720.2 | | -718 | |
| Chi-square (degrees of freedom) | 412.2(10) | | 33.4(1) ^a | | 4.5(1) ^b | |
| Prob. chi-square | <0.0001 | | <0.0001 | | 0.0334 | |

Observations = 199,926; events = 111

[†] Coefficients for the 4 cubic spline variables not shown; standard errors in parentheses.

[‡] Standard error is conditional with the interactive term and cannot be interpreted directly.

^a Calculated as $2(|LL_{\text{model 1}}| - |LL_{\text{model 2}}|)$.

^b Calculated as $2(|LL_{\text{model 2}}| - |LL_{\text{model 3}}|)$.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$, one-tailed tests.

Model 2 introduces control for economic development. As can be seen, now the coefficient for democracy low (-0.01) is insignificant. This is a major finding, for it suggests that the democratic cooperation is a function not of institutional but economic structures, and thus goes flatly against my own previous report of democratic collaboration (Mousseau, 1997), as well as other studies of democratic cooperation (Bennett, 1997; Bliss and Russett, 1998; Gaubatz, 1996; Leeds and Davis, 1999; Morrow, et al., 1998; Russett, et al., 1998; Siverson and Emmons, 1991; Thompson and Tucker, 1997). Indeed, it appears that all of these studies that failed to account for economic development are probably under-specified. It is noteworthy that economic development has a strong positive impact on collaboration (0.79), consistent with lateral pressure (Choucri and North, 1975) and neo-Marxist (Wallerstein, 1974) theories of imperialism, and that the coefficient for regime maturity (0.01) also became insignificant with control added for economic development.

What about the interaction of institutional and economic structures as predicted according to the market norms model? The third model in Table 1 adds control for the multiplicative term for market democracy: democracy low*development low. As can be seen, the interactive coefficient is significant and positive (0.04). This indicates that there is an interaction affect of democracy and development on interstate collaboration, and thus the estimates without the multiplicative term are under-specified (Friedrich, 1982). This conclusion is also reached by the significance of the chi-square statistic for model 3 (4.5). The difference in the log-likelihood values of models 2 and 3, $e^{2.26}$, shows that the multiplicative model is about 10 times more likely to be true than the additive one. We cannot directly interpret the constituent coefficients in the multiplicative model, democracy low and development low, however, because the significance of the interaction term means that these coefficients and their standard errors must be interpreted conditionally (*ibid.*). This is because the reported direction, size, and significance of each constituent term is conditional on the other having a value of 0 (*ibid.*)—a value that represents an extrapolation beyond the possible range of each term.

Accordingly, to interpret the direction and strength of the coefficients for democracy, development, and the interactive term, I computed the conditional effects and present the results in Figure 1 for a dyad that contains at least one major power, is contiguous, does not contain the hegemon, and has mean values on regime maturity, relative capability, and collaboration history (the unreported cubic spline variables). The vertical dimension in Figure 1 shows the probability of militarized collaboration between states. The left horizontal axis represents the level of democracy of the less-democratic state in a dyad. The right horizontal axis represents the level of GDPpc of the less-developed state in a dyad. To reflect the real world in Figure 1, I illustrate a dyad where the less-developed state ranges from a high equal to that among those states generally considered advanced market democracies in 1992¹² (a GDPpc of \$13,261, about the level of the Netherlands that year), to a low equal to the average for all the other states in 1992 (GDPpc of \$2,691, about the level of Ecuador that year).

As can be seen in Figure 1, the impact of democracy on interstate collaboration clearly depends on a dyad's level of economic development. Among dyads where at least one state is less developed (left-front horizontal axis), it appears that increasing

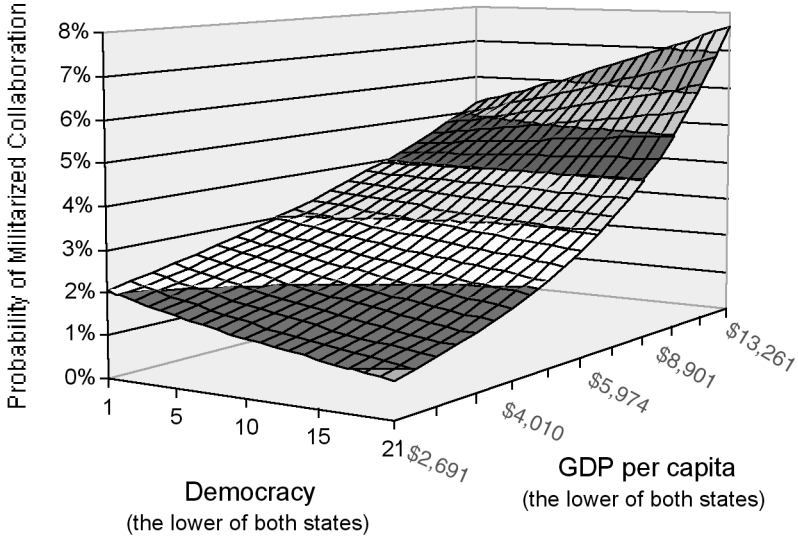


Figure 1. The combined and separate impacts of dyadic democracy and economic development on militarized interstate collaboration among nations.

joint democracy lowers the likelihood of collaboration—from about 2% among dyads where at least one state is highly autocratic (left corner), to less than 1% where both states are highly democratic (front corner). However, among dyads where both states have advanced economies (back-right horizontal axis), increasing joint democracy appears to have a strong positive impact on collaboration. The likelihood of collaboration per year increases from 5.3% among dyads where at least one state is highly autocratic (back corner), to 7.7% where both states are highly democratic (right corner). A closer examination reveals that democracy has a positive impact on collaboration between nations only when the poorest state in a pairing has a GDPpc of at least \$8,055—about the level of Venezuela in 1992.¹³ If we set the base dyad (described above) to have average values of democracy and development, the estimated probability of collaboration is 0.9%—and hence joint-developed democratic dyads are estimated to be about eight times (7.7%/0.9%) more likely than other dyads to collaborate in militarized interstate conflict.

Joint democratic dyads (democracy low ≥ 18) where at least one state has an income above \$8,055 account for 23% of the joint democratic dyads in the sample—so 77% of joint democratic dyads are predicted to be less likely than other states to collaborate. Why might joint democracy have a negative impact on collaboration in non joint-developed dyads? As argued above, in the absence of a market culture the public impact on foreign policy is likely to constrain leaders towards parochial in-group identities and other collective dogmas. For instance, in the absence of market-based development, the leaders of a joint democratic dyad—with one state, say,

Muslim, and the other, say, Hindu—will be hard-pressed by voters toward identity-based conflict and away from cooperation. The same logic holds when the public in a less-developed democracy confronts a market democracy: the tendency is to lash on to parochial identities when confronted with a market culture as with or any other kind of “foreign” culture. Assuming democratic leaders are more constrained by the electorate than dictators (Buena de Mesquita, et al., 1999), it follows that democracies with less-developed economies are *less* likely than other kinds of states to collaborate in militarized conflict—with each other and with market democracies.

The analyses thus confirm test expectations: democracies with advanced market economies are more likely than other kinds of states to collaborate with each other in militarized interstate conflict. In contrast, democracies without advanced market infrastructures are not more likely than other kinds of states to collaborate in militarized conflict. However, a number of factors may threaten the validity of the results, such as multicollinearity in the data, measurement error, period effects, or trade interdependence—possibilities I now address.

Further Tests

Empirical research has well established that democracy and economic development go hand in hand (Burkhart and Lewis-Beck, 1994; Przeworski, et al., 1997). Consequently, any attempt to observe the separate behavior of less-developed and more-developed democracies will find the interactive term (developed democracy) and the constituent term (democracy low) to be highly correlated. In the analyses above, these terms correlate at 0.989 (Pearson’s r). This correlation is not a threat to the validity of the above interpretations, however, because multicollinearity does not effect conditional interpretations of the coefficients or their standard errors (Friedrich, 1982). Rather, multicollinearity from an interactive model simply asks more from the data than an additive one, inflating standard errors (*ibid.*, p. 817). Given the significance of the interactive term, there appear to be enough differentiating cases to confirm the significance of the interactive term, and thus any estimate of collaboration without it would be under-specified (*ibid.*, pp. 810–811).

Nevertheless, there remains a persistent misconception that multicollinearity renders interpretations unreliable. Therefore, to render the analyses more convincing I report an estimate with the constituent terms, democracy low and development low, normalized around their means. In this way, the interaction term (the product of the two Z-scores) correlates with democracy low at only 0.58 and development low at only 0.29 (Pearson’s r). The first model in Table 2 shows the estimate with these centered terms. As can be seen, the interactive term remains significant (0.18). Clearly, there appears to be a positive interaction effect of development and democracy on collaboration between nations.¹⁴

To achieve the highest possible level of measurement validity (Bailey, 1994, pp. 69–71), the second model in Table 2 reports the estimate with Vanhanen’s (2000) measure of democracy, in the construction of the multiplicative term as well as the constituent term. As can be seen, the interactive term remains positive and significant (0.02). Therefore, the results do not appear to be a function of epistemic error in the democracy term.

Table 2
Logistic Regression Tests for Multicollinearity, Construct Validity, Period Effects, and Confounding Factors on the Impact of Democracy, Development, and Developed Democracy on the Probability of Militarized Interstate Collaboration[†]

| <i>Variable</i> | <i>Terms Centered</i> | <i>Democracy:</i> | <i>Development:</i> | <i>Trade Inter-</i> |
|------------------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| | <i>1950-1992</i> | <i>Vanhanen</i> | <i>Energy Cons.</i> | <i>dependence</i> |
| | <i>1950-1992</i> | <i>1950-1992</i> | <i>1920-1939</i> | <i>1950-1992</i> |
| Democracy low | -0.40 (0.20) [‡] | -0.16 (0.12) [‡] | -0.02 (0.07) [‡] | -0.33 (0.20) [‡] |
| Development low | 0.65 (0.11) [‡] | 0.49 (0.15) [‡] | -5.36 (2.66) [‡] | 0.58 (0.22) [‡] |
| Development low* democracy low | 0.18 (0.09)** | 0.02 (0.01)* | 0.25 (0.14)** | 0.03 (0.02)* |
| Major power | 1.52 (0.28)*** | 1.38 (0.28)*** | 4.70 (0.78)*** | 1.31 (0.33)*** |
| Contiguity | 2.19 (0.22)*** | 2.19 (0.23)*** | 1.84 (0.54)*** | 2.02 (0.28)*** |
| Relative capability | -0.31 (0.07)*** | -0.32 (0.07)*** | -1.60 (0.32)*** | -0.25 (0.09)*** |
| Hegemonic status | 2.17 (0.28)*** | 2.43 (0.31)*** | — | 1.98 (0.34)*** |
| Trade interdependence | — | — | — | 10.37 (8.36) |
| Intercept | -7.64 (0.30)*** | -11.03 (1.16)*** | -5.81 (1.02)*** | -11.41 (1.76)*** |
| Log-likelihood | -718.2 | -711.9 | -105.7 | -493.3 |
| Chi-square (degrees of freedom) | 450.0(11) | 441.9(11) | 132.6(10) | 267.0(12) |
| Prob. Chi-square | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| Observations | 200,110 | 195,085 | 27,820 | 106,098 |
| Events | 111 | 111 | 21 | 76 |

[†]Coefficients for 4 cubic spline variables not shown; standard errors in parentheses.

[‡]Standard error is conditional with the interactive term and cannot be interpreted directly.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$, one-tailed tests.

The third model in Table 2 also assesses the potential for measurement error, whilst also testing for a possible period effect (and also tests for multicollinearity because it reports a different sample). As discussed above, it is plausible that the collaboration among market democracies may be a consequence of Cold War alliance structures. Yet, because the market norms model predicts alliances to form between market democracies, control for alliances is not appropriate (King, et al., 1994, p. 173). By using an alternative measure of economic development—energy consumption per capita—we can test for measurement validity whilst also examining the period before the Cold War (1919–1939). As can be seen, the interactive term remains positive and significant (0.25). Thus, the results continue to hold with two separate indicators of the two key variables in the study, democracy and development, and across two key periods, before and during the Cold War.¹⁵

Finally, the last model in Table 2 adds statistical control for trade interdependence. As can be seen, the coefficient for trade interdependence is positive (10.37) but insignificant. The term is close to 0.10 significance, however, and should not be discounted in future studies of interstate cooperation. Nevertheless, the interactive

term remains significant and positive (0.03). The evidence thus indicates that the militarized collaboration among market democracies is a function not of multicollinearity, measurement error, the Cold War, or trade interdependence—but of something related to the presence of both economic development and democracy.

IMPLICATIONS AND CONCLUSION

Numerous empirical studies have confirmed that democratic nations share a global zone of peace and cooperation. More recent research, however, shows that the democratic zone of peace is conditional on both states having developed economies (Mousseau, 2000). Is the democratic zone of cooperation also conditional on both states having developed economies? With the observation of a large number of interstate dyads from 1919 to 1992, robust support was found for this hypothesis. It appears that economically developed democracies are more than eight times more likely than other states—including other democracies—to engage each other in a most intense level of interstate cooperation: collaboration in militarized conflict. If at least one state in a joint democratic dyad has a per capita income of less than \$8,050—which includes 77% of joint democratic dyads—then the dyad is less likely than other dyads to collaborate. This economic limitation to interstate collaboration holds after controlling for the potent effects of major power status, geographic contiguity, regime maturity, relative capability, hegemonic status, and collaboration history. This finding also seems highly reliable, as it is not a likely artifact of multicollinearity, measurement error, the Cold War, or trade interdependence.

Just as the engagement in militarized conflict indicates a most intense level of hostility between nations, collaboration in militarized conflict indicates a most intense level of cooperation. In this way, the research herein yields the tentative conclusion that the democratic zone of cooperation is conditional to both states having developed economies—an empirical result that carries several significant implications. First, the results suggest that previous studies that link democratic institutions with various forms of interstate cooperation (Bennett, 1997; Bliss and Russett, 1998; Gaubatz, 1996; Leeds and Davis, 1999; Morrow, et al., 1998; Russett, et al., 1998; Siverson and Emmons, 1991; Thompson and Tucker, 1997), including my own study of collaboration (Mousseau 1997), are all under-specified—as none of these studies controlled for both economic development and the interaction of this factor with democracy. Clearly, new research is needed to see if the economic limitation holds with these other measures of interstate cooperation.

Second, in conjunction with previous research (Mousseau, 2000), it now appears that the democratic zone of peace and cooperation is driven by the developed democracies. Institutional-based theories of democratic peace and cooperation, whether cultural (Dixon, 1994; Mousseau, 1997) or structural (Bueno de Mesquita, et al., 1999; Leeds and Davis, 1999), do not predict an economic limitation to this zone. Nor do classical-liberal prescriptions (Oneal and Russett, 1999) make such predictions. In contrast, the analyses herein contain the second empirical confirmation of several novel facts derived from the market norms notion that liberal political culture arises from market-oriented economic development. If elected leaders have an incentive to abide by the preferences of median voters—and if the preferences arising

in liberal political culture can explain interstate peace and cooperation—then an interaction of market-oriented development and democracy can account for the zone of democratic peace and cooperation.

Until now, leading theoretical approaches that have attempted to explain the origins of “modern” or “liberal” culture have rested on ethnocentric notions of diffusing “Western” values (Fukuyama, 1995), historically faulty views of evolutionary development (Parsons, 1964), or tautological notions of democratic institutions fostering liberal values (Diamond, 1997). As discussed, constructivists give importance to varying values and identities, but constructivism alone does not predict the formation of values and identities. Against all of these views, I have shown not only how liberal preferences may rise—and fall—with economic conditions, but I have deduced the specific content and character of liberal values—and demonstrated how the predicted effects of this culture can be modeled across time and space with the observation of economic conditions.

Of course, correlation does not mean causation, and any number of alternative explanations for the economic limitation to the democratic zone of peace and cooperation are plausible. Perhaps the collaboration among developed democracies rests not with market norms but with the higher levels of education, or communications infrastructure, present in developed economies (Lipset, 1959). These alternative explanations can be readily investigated in future research. For now, it is useful to emphasize that with correlational studies the identification of causation rests not on coefficients but with the strength of theory. Theories, in turn, are assessed according to explanatory power, simplicity, and the generation of novel and testable facts (Vasquez, 1993, pp. 304–308). In this light, the market norms model offers a novel and plausible explanation for two foremost puzzles in Political Science: the linkage between development and democracy (Burkhart and Lewis-Beck, 1994; Przeworski, et al., 1997), and the zone of democratic peace and cooperation—and does so from just two simple and plausible assumptions: that democratic leaders value their party’s tenure in office, and that economic conditions affect a nation’s culture and institutions. Novel facts include the predictions that advanced market democracies are more likely than other states (including other democracies) to ally, agree on issues, and join international organizations (Mousseau, 2000, p. 482). For these reasons, the market norms model is one that must be considered by serious scholars of global politics, and the results herein justify the next step in this research program: testing the relationship between market development and market culture using survey data.

There remains a widespread misconception among quantitative international relations researchers that any model with roots in anthropology must be faulty. I suspect that this view rests on Waltz’s classic harangue on anthropology (Waltz, 1959, pp. 42–80), and with the widespread notion that “research into domestic preferences is overly demanding, if not impossible” (Moravcsik, 1997, p. 535). But while Waltz argued quite convincingly that human nature (a constant) cannot explain war (a variable), aside from his top-down model in the third-image, Waltz’s argument against culture (which varies) rests entirely on its impracticality in yielding solutions to war (e.g., Waltz, 1959, p. 56). Notwithstanding that the issue at hand is not resolving war but explaining it, the market norms model does offer a tenable solution: market de-

velopment. Notwithstanding the model's ontological origins in Anthropology, I have demonstrated here and elsewhere (Mousseau, 2000, 2002) that modeling the observable implications of predicted preferences is neither too demanding nor impossible.

It does not follow, however, that the market norms model and traditional models of international relations are mutually exclusive. In the superstructural anarchy within and between states that characterizes much of the globe, a Hobbesian pursuit of power and security is perhaps the only common preference, and thus models that make such assumptions will probably fill part of the picture (Morgenthau, 1985[1948]; Waltz, 1979). Indeed, the evidence herein reinforces the view that coercion and brutality remain powerful forces in international politics, as power parity appears as a significant influence determining collaboration between nations. Between market-oriented democracies, however, common values of equity, freedom, and law may well place severe constraints on the scope of their interactions, and in this way the zone of democratic peace and cooperation may be also a zone of affinity and prosperity.

NOTES

1. Thus, cultural materialism is not a deterministic but a probabilistic ontology.
2. Sweden, often acknowledged as the foremost "social democracy," is in fact a market democracy, as the government share of the economy never exceeded 25% from 1950 to 1992 (Summers and Heston 1991). Note that government share of the economy can include capital that is exchanged on the market, and thus the market appears to constitute 75% or more of all economic activity in the developed democracies from 1950 to 1992.
3. One reviewer suggested measuring interstate cooperation with agreement on roll call votes at the United Nations. But this measure indicates not cooperation but agreement. The market norms model does predict an interaction of development and democracy on such voting agreement; however (see above), a hypothesis investigated and confirmed in a separate paper (Mousseau, 1998b).
4. The Militarized Interstate Dispute data, and the COW listing of the members of the interstate system, can be obtained via the web page of the Peace Science Society (International) at <http://pss.la.psu.edu>
5. Indeed, it is probably a safe inference that this is why the coders of the MID data did not label sides A and B as "initiating" and "target," and those intimately involved in the creation of the COW Militarized Interstate Dispute data caution against doing so.
6. I did, however, perform all the analyses with the observation of collaborations on side A only, and found substantively the same results.
7. The Polity III data (version 98) can be obtained at the web site of the Polity Project at the Center for International Development and Conflict Management at the University of Maryland, College Park, <http://www.bsos.umd.edu/cidcm/polity>. Vanhanen's democracy data can be obtained at <http://www.svt.ntnu.no/iss/data/vanhanen>.
8. An alternative solution is to lag the democracy variable. However, with lagging we still do not know the regime status at the time of regime collaboration (or noncollaboration) in years with regime changes. Thus, the safest solution is to avoid drawing inferences from such cases.
9. Henderson (1999, p. 220) argues that the weak-link measure assesses not the normative but the structural democratic peace hypothesis. I do not share this view: like institutions, norms can also constrain behavior.
10. See footnote 2.
11. The durability data are missing in the Polity III dataset in all the years before 1955. Since the GDPpc data start in 1950, I filled in the years 1950 to 1954 with linear extrapolation backwards in time with consideration for abrupt changes of regime.
12. That is, Australia, New Zealand, Japan, the United States, Canada, and all the nations in Western Europe and Scandinavia.
13. It is notable that this level of GDPpc is not far from the amount (\$6,000) identified by Przeworski et al.

- (1997, p. 305) at which democratic institutions are “certain to survive”—thus empirically linking two of the leading puzzles in Political Science.
14. Because the coefficient for regime maturity in the multiplicative model in Table 1 was insignificant—and because data for this variable are not available before 1950—the estimates in Table 2 do not include control for regime maturity. This explains the small increase in observations from Table 1 to Table 2 (model 1).
 15. Of course, the variable hegemonic status is not included in the 1919–1939 model, for it is a constant during this period.

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