LIBERAL DEMOCRACY AND STATE PARTICIPATION IN THE
INTERNATIONAL NONPROLIFERATION REGIME IN THE POST-COLD WAR
ERA: A CROSS-COUNTRY ANALYSIS, 1992 – 2000

by

RICHARD GLEN YOUNG

(Under the direction of Gary K. Bertsch)

ABSTRACT

United States policymakers argue that some countries are more likely to contribute to the proliferation of weapons of mass destruction than are others. However, there is little scholarly research that examines the generalizable factors that explain states’ participation in the international nonproliferation regime. This paper examines the influence of liberal democracy on states’ participation in the nonproliferation regime. Using ordinary least squares (OLS) multivariate regression, I test the impact of democracy on nonproliferation regime participation, while controlling for the effects of economic development, economic openness, and nuclear weapons state status. The study examines the international community for which data are available in three years since the end of the Cold War: 1992, 1996, and 2000. I find that in all three years, controlling for the effects of the other independent variables, a state’s level of liberal democracy strongly correlates with its level of participation in the international nonproliferation regime.

INDEX WORDS: Liberal democracy, Nonproliferation, Regime, Nonproliferation regime, Economic development, Economic openness, Post-Cold War, Weapons of mass destruction
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INTRODUCTION

In November 1989, the Berlin Wall, for decades the physical manifestation of the “Iron Curtain” between Western and Eastern Europe, crumbled. Its destruction signified the beginning of the end of the forty-year period of international strife and tension known as the Cold War.

The divisiveness of the Cold War had left the United Nations Security Council powerless for much of its existence. However, in August 1990, the Iraqi invasion of neighboring Kuwait offered a new test for post-Cold War international cooperation. As Joseph S. Nye said in 1991, “If the UN had failed to respond to such a clear-cut case of aggression and annexation, that would have suggested that UN collective security would not work in any case” (Nye 1991, pp. 56-64).

Authorized by the UN, the United States led an aerial assault on Iraqi forces in Kuwait in January 1991, in what became the initial military actions of the Persian Gulf War. In February, the Coalition launched a quickly resolved ground war against Iraq. The Iraqi military was expelled from Kuwait, and it indeed appeared that the perpetual ideological conflict of the Cold War was over and a new era of cooperation and multilateralism had begun.

In the decades following World War II, the term “nonproliferation” typically referred to the prevention of the dissemination of fissionable (nuclear) materials and related by-products and technologies on the part of existing nuclear states, and the
acquisition of such materials and associated by-products and technologies by non-nuclear states.¹

Other so-called weapons of mass destruction seemed to pale in comparison to nuclear weapons.² Though international nonproliferation agreements addressed the threat of biological weapons during the Cold War (in the form of the Biological and Toxin Weapons Convention [BWC] of 1972), the threat of chemical weapons had received little attention in the decades since World War II. Startling discoveries made in Iraq by the United Nations following the Gulf War quickly made both biological and chemical weapons important items on the nonproliferation agenda.

Even before the Iraqi invasion of Kuwait, it was known that Iraq had employed chemical weapons on several occasions, in its war against Iran in the 1980s and in a series of offensives against its own Kurdish population after the Iran-Iraq War. As part of the UN Security Council Resolution 687, which outlined the terms of the cease-fire agreement that formally ended the Gulf War, Iraq was forced to agree to “destroy or render harmless” all of its weapons of mass destruction (WMD) (Time, 5/13/02, 34).

In June 1991, under authority granted by Section C of Resolution 687, UN weapons inspectors, including representatives from the United Nations Special Commission (UNSCOM) and the UN-affiliated International Atomic Energy Agency (IAEA), entered Iraq to begin inspection of Iraq’s nuclear, biological, and chemical weapons capabilities (http://www.un.org/Depts/unscom/unscom.htm#ESTABLISH).

¹ This reference was derived, in part, from the text of the 1968 Nuclear Non-proliferation Treaty.
² According to Davis (1999, 98): “Throughout the Cold War, strategic arms control focused primarily on the US-Soviet nuclear [italics added] relationship, and only secondarily on nonproliferation and disarmament.”
In the course of their investigations, inspectors determined that Iraq had produced roughly 8,000 liters of anthrax spores during the 1980s, as well as 20,000 liters of botulinum toxin, 2,000 liters each of aflatoxin and clostridium, and close to 100,000 chemical weapons of various kinds (Newsweek, 11/24/1997, 36; Time, 5/13/02, 34). By 1994, the UN had destroyed all of Iraq’s known chemical weapons facilities. The IAEA also destroyed forty nuclear research facilities, none of which had been reported to the IAEA before the Gulf War.

The facilities’ unreported existence was a direct violation of the international standards contained in the Nuclear Non-proliferation Treaty (NPT), of which Iraq was a signatory. Inspectors disposed of 38,500 chemical munitions, 690 tons of chemical weapon agents, 3,000 tons of precursor chemicals, and 426 pieces of chemical production equipment (Time, 5/13/02, 34). Iraq never accounted for all of the chemical weapons it produced during the war with Iran.

The discovery of what one author has called Iraq’s “virtual Manhattan Project” (Dunn 1998, 68) underscored the necessity of controlling the spread of, and ultimately eliminating, weapons of mass destruction. Following the Gulf War, the Clinton administration determined that the spread of weapons of mass destruction “posed the most direct threat to US post-Cold War security interests” (Karl 1996, 87).

The UN findings provided the impetus for the reinvigoration of the international nonproliferation regime. In 1993, 130 countries ratified the Chemical Weapons Convention (CWC), banning the development, manufacturing, stockpiling, and use of chemical weapons. The Nuclear Suppliers Group (NSG), created to control the transfer of nuclear or nuclear-related goods from existing nuclear states, also began meeting
again, spurred by concerns over potentially dangerous exports of dual-use materials
(materials with both civilian and military applications) from member states (Simpson and
Howlett 1994, 48).

The importance of nonproliferation efforts became especially clear on September
11, 2001, when members of the al-Qaeda international terrorist network hijacked four
American passenger planes, crashing two of them into the World Trade Center in New
York City and one into the Pentagon in Washington, DC. The attack revealed that the
heartland of the US was indeed vulnerable. The potential for a nuclear, chemical or
biological weapon to fall into the hands of terrorists suddenly seemed very real to the
people of the United States.

In his State of the Union Address in January 2002, President George W. Bush
articulated the United States’ approach to international terrorism and, in particular,
weapons of mass destruction:

[North Korea, Iran and Iraq] constitute an axis of evil, aiming to threaten the
peace of the world. By seeking weapons of mass destruction, these regimes pose
a grave and growing danger. They could provide these arms to terrorists, giving
them the means to match their hatred. They could attack our allies or attempt to
blackmail the United States. In any of these cases, the price of indifference would
be catastrophic. We will work closely with our coalition to deny terrorists and
their state sponsors the materials, technology, and expertise to make and deliver
weapons of mass destruction... The United States of America will not permit the
world’s most dangerous regimes to threaten us with the world’s most destructive
weapons.3

Bush’s foreign policy doctrine appears to be built upon two core foundations,
both of which require cooperation within the international community in order to be
achieved: the cessation of international terrorism and the nonproliferation of weapons of
mass destruction. Because of this, the study of the international nonproliferation regime,
and the various treaties and organizations that comprise it, is not only timely, but also necessary.

Thus far, little research has been published that examines the generalizable factors that influence state participation in international multilateral nonproliferation efforts. In this paper, I seek to explore the impact of democracy on governmental participation in the international nonproliferation regime.

I include three other potentially influential independent variables as controls in my study: economic development, economic openness, and whether or not a state is a known nuclear power. I examine the impact of these variables across the entire international community for which data are available, staggered in four-year increments since the end of the Cold War: 1992, 1996 and 2000.4

Since the end of World War II, the United States has sought to promote liberal democratic values around the world. More recently, the US and its allies within the UN have pressed for the global adoption of nonproliferation norms. It is possible that the two objectives are interrelated. If so, the continued encouragement of democratization is perhaps appropriate in order to protect the world from the danger of the proliferation of weapons of mass destruction.

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3 The complete text of President Bush’s 2002 State of the Union Address can be found at the following Web site: http://www.whitehouse.gov/news/releases/2002/01/20020129-11.html.
4 I choose to begin my analysis in 1992 because it is the first complete year after the collapse of the Soviet Union, which is often considered the final event of the Cold War.
RESEARCH PUZZLE

In his January 2002 State of the Union Address, Bush specified three countries that constitute a so-called “axis of evil”: North Korea, Iran and Iraq. On May 6th, John Bolton, the US State Department’s chief proliferation officer, referred to three more states that also pose serious concerns to the Bush administration: Libya, Syria and Cuba (*The Economist*, 5/11/02, 30).

In December 2001, in a speech to the UN General Assembly, Bush stated that those six countries, to which he referred as “rogue states”, were “the most likely sources of chemical and biological and nuclear weapons for terrorists” (*The Economist*, 2/2/02, 24). This implies that so-called rogue states are less likely to participate in the international nonproliferation regime than countries that are not considered rogues. While this may be accurate, there is, as of yet, no evidence in the scholarly literature that supports this conclusion.5

While scholars have examined the reasons why states adopt national controls on some exports (Bertsch and Grillot 1998; Cupitt, Grillot, and Murayama 2001) and why countries join individual multilateral export control organizations (Chafetz 1995), it is puzzling that little research has addressed states’ participation in the broader international nonproliferation regime. This is especially surprising, considering that policy makers have argued, and in fact have based policy upon the supposition, that there

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5 Barry Rubin (1999, 3) has defined a rogue state as one “that puts a high priority on subverting other states and sponsoring non-conventional types of violence against them. It does not react predictably to deterrence or other tools of diplomacy and statecraft. In short, such a state requires special treatment and high levels of international pressure in order to prevent it from wrecking public order, setting off wars, and
are generalizable factors that influence states’ involvement in the proliferation of weapons of mass destruction (as was made evident in Bush’s December 2001 speech.)

The US State Department’s countries of concern share several conspicuous similarities. All possess relatively low per capita gross domestic product.\textsuperscript{6} All demonstrate little economic openness.\textsuperscript{7} None are known nuclear weapons states. All six also possess some form of authoritarian government, with little evidence of significant liberalization or democratization.\textsuperscript{8} Extensive research has indicated that the presence of democracy greatly influences state behavior. It is possible that the same is true in the case of states’ participation in multilateral nonproliferation efforts.

\textsuperscript{6} According to the 1999 \textit{CIA World Factbook}, the above mentioned countries were calculated as having the following GDP per capita (in US dollars): Cuba - $1560, Iran - $5000, Iraq - $2400, Libya - $6700, North Korea - $1000, Syria - $2500. The average GDP for 1999 was roughly $6890.

\textsuperscript{7} According to the 1999 \textit{CIA World Factbook}, the previously mentioned countries were calculated as possessing the following levels of trade (calculated as imports plus exports as a percentage of total annual GDP): Cuba – 25.43%, Iran – 7.65%, Iraq – 15.30%, Libya – 36.05%, North Korea – 11.80%, Syria – 23.74%. The average level of trade in 1999 was 42.15%.

\textsuperscript{8} The non-profit, non-partisan international organization Freedom House compiles an annual study of freedom in the world. Based on the analyses of independent news sources, NGO publications, think tank reports, and scholarly determinations, Freedom House rates political rights and civil liberties that the populations of countries enjoy. In 1999, Freedom House gave the six states in question the following composite scores for the level of citizen freedom (1 being the lowest level of freedom available, 7 being the highest): Cuba – 1, Iran – 2, Iraq – 1, Libya – 1, North Korea – 1, Syria – 1. In 1999, the average level of freedom in countries for which data were available was 4.5.
RESEARCH QUESTION

To what extent does the level of liberal democracy in a state influence that state’s participation in the international nonproliferation regime?
LITERATURE REVIEW

Regime Theory

Regime theorists have attempted to answer several important questions. First, what is a regime? How might one define the term, so as to operationalize it in a satisfactory manner when performing social science research? Second, why do states choose to form international regimes? Choosing to cooperate with other governments, and to achieve goals within the confines of a regime, almost certainly limits the policy options available to leaders. What is it that states hope to accomplish in the fora that regimes offer?9

Stephen D. Krasner (1983) offered the first widely accepted definition of regimes. He stated that:

Regimes are implicit or explicit principles, norms, rules, and decision-making procedures around which actors’ expectations converge in a given area of international relations. Principles are beliefs of fact, causation, and rectitude. Norms are standards of behavior defined in terms of rights and obligations. Rules are specific prescriptions or proscriptions for action. Decision-making procedures are prevailing practices for making and implementing collective choice (Krasner 1983, 1985).

Krasner believed that regimes are necessary so as to “avoid uncoordinated action and establish stability” (Krasner 1991, in Hasenclever, et al 1996, 201).

Robert Keohane (1993) disagreed with Krasner’s definition and instead offered one that was both simpler and shorter. He stated that “[r]egimes are explicit rules that are agreed upon by actors and embodied in treaties or other documents” (1993, 28). He

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9 As is common in the study of international relations, much of this review makes reference to states as rational unitary actors.
further argued that the rules in question do not have to be effective in order to qualify as a regime. There must only be an understanding that the rules continue to exist, even when formal meetings of organizations or discussions of treaties are not in session. Keohane said that “regimes can be identified by the existence of explicit rules that are referred to in an affirmative manner by governments, even if they are not scrupulously observed” (Ibid.).

Despite their differences, it should be noted that both the Krasner and Keohane definitions broadly conceive of regimes as consisting of principles, norms, rules, treaties, organizations, and other decision-making procedures that concern a particular area of international relations. Thus, the international nonproliferation regime refers to the assortment of treaties, organizations, et cetera that address the proliferation of weapons of mass destruction. While the Nuclear Suppliers’ Group (NSG), for example, is a component of the nonproliferation regime, it is not necessarily a regime in itself.10

Keohane has stipulated several reasons why states choose to participate in regimes. First, they allow states to interact in iterated “games” with one another, thus making trust (and cooperation) a potentially beneficial option. Second, they foster transparency concerning state motives, allowing the distribution of more perfect information and encouraging future interstate cooperation. Finally, they lower transaction costs, allowing states to achieve specified goals multilaterally more easily than they could unilaterally11 (Keohane 1982; Keohane 1984). Arthur Stein has stated that:

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10 See Müller 1993 for a fuller discussion.
11 Keohane does not, however, argue that regimes reduce all transaction costs. Rather, they facilitate “legitimate” bargains (as determined by the regime), while making illegitimate ones more difficult (Keohane 1984, 90).
The same forces of autonomously calculated self-interest that lie at the root of the anarchic international system also lay the foundation for international regimes as a form of international order. The same forces that lead individuals to bind themselves together to escape the state of nature also lead states to coordinate their actions, even to collaborate with one another (Stein 1982, reprinted in Baldwin 1993, 45).

Stein and other Neoliberal scholars have argued that states are rational egoists. They make decisions based on cost-benefit analyses, which they calculate on the basis of individual interests (Jervis 1978; Rapoport 1960). However, some researchers suggest that rational egotism is inadequate in explaining all state behaviors. Goldstein and Keohane (1993) have argued that states’ perceptions (and thus the way in which they calculate their expected utility in a given situation) can change as the states’ beliefs change.

Nye (1987) has made reference to what he calls “complex learning”, in which “new understandings can redefine the very content of the national interest, requiring the selection of new goals and a search for more appropriate strategies to achieve them” (Nye 1987, in Hasenclever, et al, 1996, 208). As an example of this phenomenon, Nye examined the beginnings of the nonproliferation regime during the Cold War. He argued that as the US and the Soviet Union learned more about nuclear weaponry, they realized that the use of such weapons was detrimental to both sides, and that cooperation was preferable. As the rudimentary nonproliferation regime was born, it served to re-enforce the learning that had initially led to its creation (Nye 1987, 385). Krasner referred to this as “institutional feedback” (Krasner 1983, 361). These theories imply that beliefs, ideas
and state relationships (which are essential to the continued existence of a regime) are as important, if not more so, than power capabilities.\textsuperscript{12}

\textit{The International Nonproliferation Regime}

Authors within the field of nonproliferation (NP) have attempted to determine why the international NP regime exists and what constitutes it. Most studies have concentrated on the nuclear NP regime and, for the most part, analyses have examined the nuclear, and overall nonproliferation, regimes holistically.

Referring specifically to the nuclear nonproliferation regime, Trevor McMorris Tate argues that the regime’s “guiding norm” (embodied in the 1968 Nuclear Non-proliferation Treaty) is that the proliferation of nuclear weapons poses a considerable threat to international security and thus should be prevented\textsuperscript{13}, while ways of transferring nuclear technology to non-nuclear states for peaceful purposes should be explored (Tate 1990; Smith 1987). Thus, while many of the individual members might find the NP regime’s terms to be objectionable, they continue to adhere to it for the sake of domestic, regional and international security.

Michael Brzoska (1992) argues that the nuclear NP regime is built upon a third norm as well: the eventual abolition of nuclear weapons, as stated in the preamble and Article VI of the NPT (Brzoska 1992, 217).

Tate and Brzoska disagree to some extent on the entities that comprise the nuclear NP regime. Tate contends that the regime consists of: 1.) The international nuclear safeguards system, managed by the International Atomic Energy Agency (IAEA), whose purpose is to ensure that “peaceful benefits ensue from the nuclear activities over which it

\textsuperscript{12} I used the well-written and very helpful literature review of Hasenclever, Mayer, and Rittberger 1996 for much of the information concerning regime theory.
has jurisdiction” and that the nuclear states share nuclear technology with the non-nuclear states; 2.) The NPT, the goal of which is to prevent nuclear weapons from spreading to other states and to ensure that members cooperate in developing peaceful uses of nuclear technology; 3.) The Nuclear Exporters’ Committee, also known as the Zangger Committee; 4.) The Nuclear Suppliers’ Group (NSG); and 5.) The International Fuel Cycle Evaluation (INFCE). The objective of the latter three organizations is to ensure stricter controls on nuclear commerce (Tate 1990, 403-406).

Brzoska accepts Tate’s list, but expands upon it. In his description of the nuclear NP regime, he also includes the regional nuclear-weapons free zones in Latin America (established in the Tlatelolco Treaty) and in the South Pacific (created in the Rarotonga Treaty). He also suggests the inclusion of the centralized nuclear export control system of the European Community (now the European Union), national export control systems, the Outer Space Treaty, the Antarctic Treaty, the Seabed Arms Control Treaty, and the Partial Test Ban Treaty (Brzoska 1992, 216-217). Though Brzoska states that “other authors” have included these treaties in their discussions of the nuclear NP regime (Ibid.), more recent research (Davis 1993; Cupitt and Long 1993; Bertsch, Cupitt, and Elliott-Gower 1994; Bertsch and Grillot 1998; Beck 2000) has tended to focus on the entities mentioned by Tate.

In regard to a larger, more inclusive NP regime that targets all weapons of mass destruction (WMD), recent research (Bertsch, Cupitt, and Elliott-Gower 1994)

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13 This is accurate in a broader sense in describing the underpinning norm of the entire NP regime.
14 It should be noted that Bertsch, Cupitt, and Elliot-Gower 1994 also include national export control systems in their discussion of a larger nonproliferation regime.
15 The exception to this is the INFCE, which though Tate contends is a vital component of the nuclear NP regime, is not mentioned in any of the other prevalent research. In keeping with the Krasner/Keohane definitions of regimes, all of the entities mentioned by Tate and Brzoska comprise the nuclear NP regime. Some are simply referred to more often than others are.
indicated the importance of four multilateral export control organizations. These include: 1.) The NSG, mentioned above; 2.) The Australia Group, which focuses on the transfer and manufacture of chemical and biological weapons; 3.) The Missile Technology Control Regime, which focuses on the missiles used potentially to propel nuclear warheads; and 4.) The Wassenaar Arrangement, which is designed to reduce the spread of conventional arms and more tightly control transfers of dual-use items.

Controls on exports represent the foundation of the international NP regime today. Some scholars have attempted to explain why states choose to adopt export controls when it would seem to be to their economic detriment to do so. Gunnar Adler-Karlsson (1968) and Michael Mastanduno (1992) argue that countries participate in multilateral export control organizations because the United States coerces them into doing so. Beck (1998), Jones (1998), Grillot (1998), Wolfe (1998), Behan (1998), Anderson (1998), and Craft (1998) all found that the states of the former Soviet Union were more likely to adopt stricter export control systems when the United States provided material incentives.

Of particular relevance to this research, Cupitt and Grillot (1997) suggest that states cooperate on export controls because of their liberal democratic identification with one another. In a study of the Coordinating Committee for Multilateral Export Controls (COCOM), the predecessor organization to the Wassenaar Arrangement, Cupitt and Grillot (1997) found that cooperation within COCOM seemed to increase in the period after the Cold War. The member states perceived success from previous cooperation, found increased respect for the decisions of their fellow members, decreased restrictions on fellow liberal democracies (including one-time adversaries Hungary, the Czech
Republic and Poland), and increased restrictions on illiberal states, such as Iran, Iraq, North Korea and Libya.

Additional research by Glenn Chafetz (1995) and Cupitt, Grillot, and Murayama (2001) also supports the contention that liberal democracy has an impact on the adoption of nonproliferation export controls. In a study of the nuclear NP regime that included the NSG and the MTCR, Chafetz found that the regime’s membership consisted almost entirely of states with relatively high levels of liberal democracy and that were existing members of a “liberal security community.” He found that in cases of violations of the regime’s rules or norms, illiberal states were more likely to be sanctioned than were liberal democratic states.

Cupitt, Grillot, and Murayama (2001) found evidence that liberal countries tend to have national export control systems that are more compatible with multilateral standards, whereas illiberal countries tend to lag behind their fellow states. The authors also found that economic development tends to have an important impact on national export control compatibility, and in fact this causal variable is more statistically significant than political freedom.

Based on these results, the authors contend that countries develop national export control systems in order to gain membership into the economic and political liberal community of states. As stated by the authors: “A membership-fee framework suggests that countries must absorb costs for being members of the liberal international

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16 According to Chafetz, the states “self-consciously identify their security interests collectively on the basis of shared core values and an established history of cooperation. This collective security identification makes these states a liberal security community” (Chafetz 1995, 745).
17 Significance of GDP per capita: .023; Political freedom: .077.
community, and that adopting export controls serves as one of many required dues”
(Ibid., 73).

_Democracy Matters_

Democracy\textsuperscript{18} is a government in which the people make decisions, either directly or through elected representatives (Lijphart 1984, 1). Robert Dahl (1998) argues that a democratic form of government is characterized by five important criteria. First, there is effective participation. Members of the state have the opportunity to make their views known to other members. Second, there is equality of voting. All votes are equal and all members have the equal opportunity to vote. Third, there is what he calls “enlightened understanding.” Each member has the opportunity to learn each of the policy options. Fourth, there is some opportunity for the political agenda to be changed. Finally, all, or at least a majority, of the adult permanent resident population has citizenship or the opportunity to become citizens (Dahl 1998, 37-38).\textsuperscript{19}

Dahl further argues that a democratic form of government (polity) produces ten “desirable consequences”: avoiding tyranny, essential rights, general freedom, self-determination, moral autonomy, human development, protecting essential personal interests, political equality, and, in many cases (though not all), peace and prosperity (Ibid., 45).

Much scholarship has been published concerning the impact of a liberal democratic polity on state behavior. In short, liberal democracies tend to behave in ways

\textsuperscript{18} Throughout this paper, the terms “democracy” and the more specific “liberal democracy” are used interchangeably. A liberal democratic polity is one in which both political rights and civil liberties are recognized by the government. This is in contrast with more “illiberal” or authoritarian-style democracies such as existed in Latin America, Southeast Asia, and the former Soviet Union at various times in the 1980s and 90s. See Zakaria 1997 and Davenport 2000 for more information concerning the distinctions between the two concepts. In this paper, for the sake of parsimony, all democracies are considered to be liberal.

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that are different to other forms of government. For example, some scholars have argued that democracy encourages economic prosperity (Lewis 1990), though others (such as Lipset 1959 and Dahl 1990) have argued that the causality is reversed: economic freedom may be a necessary prerequisite for democratic development.

One of the few near-truisms of International Relations scholarship is that democracies rarely threaten or go to war against each other (Maoz and Abdalali 1989; Lake 1992; Starr 1994, 1997). Ullman (1990) has argued that this is the result of “self-correcting mechanisms in the form of multiple bilateral channels of access that help defuse tensions before they rise too high” (Ullman 1990, 117-118). Starr (1997) suggests that it is because democracy is generally a transparent form of government, meaning that the decision-making process is clearly visible for other countries to view and thus the likelihood of secret negotiations or military maneuvers leading to war are greatly reduced.

At least one author has argued that famine is less likely in democracies than in other forms of government (D’Souza 1994). Looking specifically at the case of India, D’Souza contends that India has managed successfully to confront the chronic threat of famine because: 1.) Its government is held accountable through periodic elections, and 2.) It has a free press and a tradition of debate, both of which are important characteristics of liberal democracies (D’Souza 1994, 372).

Finally, Eric Neumayer (2002) has determined that democracies are more likely to demonstrate commitment to the international environmental regime. Neumayer included three control variables in his research: economic development (measured in terms of GDP per capita), population size, and population density. He contends that democracy is

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19 Also see Vanhanen 1990 for a further discussion of the characteristics of democracy.
so influential in explaining environmental regime commitment because, in democracies, the citizens are better informed about the issues and can better express their concerns to policymakers. The existence of largely unrestrained interest groups also means that lawmakers face constant pressure to create favorable environmental policies.

Democracies behave in some ways that are markedly different from other forms of government. Research indicates that democracies tend to be more economically developed, less likely to go to war, more resilient in defending against famine, and more committed to international environmental efforts than other polities. In terms of nonproliferation, democracies almost exclusively comprise the membership of the major nuclear NP organizations and are more likely to possess national export control systems that are compatible with multilateral standards. Based on these characteristics, it is plausible that democracies demonstrate a higher level of participation in the international nonproliferation regime as well.
A THEORY OF INTERNATIONAL NONPROLIFERATION REGIME

PARTICIPATION

It is likely that the level of liberal democracy in a state influences that country’s level of participation in the international nonproliferation regime. This is arguably due, in part, to the rational self-interest of those states’ populaces and their ability to act upon their interests through institutions that are inherent to the liberal democracy polity.

The liberal democratic form of government is based upon three essential foundational pillars: liberty, equality, and popular sovereignty. All liberal democracies possess these characteristics. Their presence differentiates liberal democracies from other forms of government.

A polity that is based upon these core values must, by implication, recognize certain inherent rights of the citizenry. Some of these rights are political in nature, such as the right to vote in free, fair elections, and for that vote to be equal in value to every other citizen’s vote. Others are commonly referred to as civil liberties, rights that the government cannot take away or excessively restrict under ordinary circumstances.20 These include the rights that, as argued by Robert Dahl, are so necessary for the functioning of a democratic government, such as freedom of speech, freedom of the press, freedom of assembly, and freedom of conscience.

It is the recognition of, and the general reluctance to restrict, civil liberties that distinguishes liberal democracies from other forms of democracy (such as the previously mentioned “illiberal democracy”) in which elections may be held, but fundamental freedoms are not guaranteed.
Adam Smith, considered a father of modern liberal democracy, argued that one of the virtues of classical liberal economics is that the participants in the economy are allowed to act in ways that benefit their own self-interest. Quoting Smith:

> It is not from the benevolence of the butcher, the brewer, or the baker, that we expect our dinner, but from their regard to their own interest. We address ourselves, not to their humanity, but to their self-love... Every individual... [who]... employs capital... and... labors... neither intends to promote the public interest, nor knows how much he is promoting it... he is... led by an invisible hand to promote an end which was no part of his intention... By pursuing his own interest he frequently promotes that of the society (Smith 1965, 14, 423).

This defines the concept of enlightened self-interest. The economy functions optimally because individuals produce goods and perform services so as to earn an income, but those goods and services in turn provide for the needs of others. Though individuals are arguably behaving selfishly, they are still behaving in ways that benefit the society at large.

In a democratic polity, the recognition of basic civil liberties means that citizens are relatively free to participate in institutions that allow them to further their own interests. Linkage channels exist so that people may attempt to influence the policies enacted by the government. In most democracies, linkage channels typically include elections, interest groups, the mass media and public opinion. Because by definition, non-democratic systems do not evince respect for liberty or popular sovereignty, linkage channels are generally not present and, when they are, they are closely supervised or monitored by the state.21

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21 In some statist, authoritarian polities, the government will create interest groups for the purpose of serving the state. This was the case in the former Soviet Union, in which the state created trade unions in order to implement policies and, to some extent, legitimate its own authority. Wiarda 1997 talks at great length about the differences between interest groups in statist (centralized) systems and in liberal systems.
However, for years, some scholars argued that policymakers, particularly in the realm of foreign policy, were largely unresponsive to such institutions as public opinion and the mass media. In recent years this has changed. Russett (1990) and Graham (1989) both argued that public opinion (commonly defined as the collective views expressed by ordinary citizens) influences foreign policy, particularly in matters related to arms control.

Looking at the US, Monroe (1979) determined that foreign policies corresponded with the preferences of a majority of Americans in roughly 90% of the cases he examined. Also examining the US, Page and Shapiro (1983) argued that changes in public opinion are typically followed by changes in policy two-thirds of the time. This is not solely an American phenomenon. Eichenberg (1989) and Risse-Kappen (1991) found public opinion to be highly influential in case studies that included democracies France, Germany, and Japan.

There is also substantial evidence that the mass media influence foreign policy in democracies. Powlick (1995) found that the media, in their ability to express public opinion, have tremendous impact on American foreign policymakers. According to Wood and Peake (1998), “as the media and mass public become more concerned with an issue, the [US] president also becomes more concerned” (Wood and Peake 1998, 177).

In democracies, linkage channels serve to hold elected leaders accountable to the people they represent. If a policymaker chooses to disregard the wishes of his or her constituents, then he or she may be voted out of office in the next election. Similarly, if a policymaker takes an unpopular stance on an issue, then interest groups may decline to
support him or her and may instead publicly shift their support to his or her opponent in the future. This too can prove detrimental to one’s election chances.

Fearon (1994) has attempted to explain this in his concept of audience costs. These are the costs that policymakers incur from the domestic population in the execution of policy. Fearon suggested that democracies generate audience costs more easily than do non-democracies because of the inherent freedom and the linkage channels present in society, and the fact that leaders are more easily removed from office (see Bueno de Mesquita and Siverson 1995). He stated that leaders are constrained by their domestic populations and by the structural characteristics of their forms of government. Leaders find it to their advantage to heed the wishes of their constituents.

Fearon’s notion of audience costs and Smith’s concept of enlightened self-interest are useful in explaining why liberal democracies would be more likely to participate in international nonproliferation efforts than non-democracies.

It is rational for individuals to oppose the spread of weapons of mass destruction. Since World War I, a near-universal international moral stigma has been attached to the use of chemical weapons (Price 1997), so much so that most countries have foresworn their use (the authoritarian Iraq being a notable exception). Similar stigmata have been associated with the use of nuclear weapons since their use at the end of World War II and with the greatly feared biological weapons. These stigmata have discouraged countries, and even terrorist organizations, from using WMD, despite the relative ease with which some could be manufactured and used (see Sprintzak 1999).

The proliferation of weapons of mass destruction represents a danger to individuals because it increases the probability that a WMD will fall into the hands of a
potentially reckless or nefarious end-user. Because the spread or use of WMD can result in massive loss of life and environmental damage, it is rational for citizens to favor international nonproliferation regime participation as a policy option. Working through linkage channels that are inherent to democratic polities, citizens can make their preferences known to policymakers. Leaders then find their range of policy options constrained. If they do not act upon the wishes of their constituents, they can face severe audience costs, including loss of office.

Results of various public opinion polls support the contention that citizens in democratic polities favor nonproliferation efforts. In a 1995 poll conducted in the US by the Chicago Council on Foreign Relations, roughly 82% of the US population reported that they believed that preventing the spread of nuclear weapons should be a “very important goal” of the US. This ranked only slightly behind the war on drugs (85%) and protecting American jobs (83%).

A 1998 poll in Germany reported that roughly 93% of the population believed that nuclear weapons are “basically contrary to international law and should neither be produced or stockpiled.” A poll in Canada conducted in 1998 indicated that 71% of the population thought it was “unacceptable for the five original nuclear powers to have nuclear weapons” and 91% believed it was unacceptable for India and Pakistan to possess them. A Norwegian poll, also conducted in 1998, confirmed that 92% of the Norwegian population believed that “Norwegian authorities should work actively for a

22 The following polls are concerned solely with nuclear weapons, due to the difficulty of locating polls relating to chemical or biological weapons.
23 See www.ccr.org/publications/opinions/chap2.html
24 See www.abolition2000.org/polls.html
25 Ibid.
ban on nuclear weapons. 26 Polls conducted in Australia, the United Kingdom and Japan reported similar findings. 27 Even a majority of the population in the nascent Russian democracy supported eliminating nuclear weapons.

Though non-democracies may still be constrained by international norms or the fear of repercussions from other countries if they contribute to WMD proliferation, they still do not face the high domestic costs with which democratic policymakers must contend. Thus, the potential economic or security gains accrued from exporting or importing WMD or related technology is not offset by possible electoral costs. Because non-democratic leaders do not have to behave as the citizens of their countries want, it is plausible that there is less probability that they will incur the costs and subject themselves to the constraints on policy options caused by participating in the nonproliferation regime.

It is likely that citizens in many of the world’s democracies oppose the spread of weapons of mass destruction because they fear the potentially lethal effects. They choose to influence policymakers, either through interest groups, public opinion, or some other linkage channel, because they hope to make known their own preferences. However, in acting to preserve their own lives or the lives of their loved ones, they are actually acting to make the world safer, as they influence their governments to commit to the international nonproliferation regime. Democracies participate in the regime because of the enlightened self-interest of their citizens and the institutions that are inherent to the liberal democratic polity.

26 Ibid.
27 In Australia, 89% believed all nuclear weapons should be destroyed. In the UK, 68% of the population believed that Prime Minister Tony Blair should take an active role in advocating the removal of
CONCEPTS

A liberal democratic form of government is founded upon a belief in liberty, equality and popular sovereignty. Liberal democracies are typically characterized by free, relatively frequent, and fair elections, in which most of the adult citizen population has the opportunity to elect their leaders. Under most circumstances, liberal democracies demonstrate recognition of the political rights and civil liberties of the populace. Political rights include the right to vote, to join political parties or social movements, and equality of voting. Civil liberties include freedom of speech, freedom of the press, freedom of religion, freedom of assembly, and freedom of conscience.

Level of economic development here refers to the standard of living of a country’s population. According to Deardorff’s Glossary of International Economics, raising levels of physical and human capital, as well as improving technology, typically results in increases in a state’s standard of living. Physical capital includes the plants and equipment used in production. Human capital refers to a population’s knowledge and skills resulting from education and training. Technology is defined as “the complete set of knowledge about how to produce in an economy at a point, including techniques of production that are available but not economically viable.”

A country’s gross domestic product (GDP) per capita, the total value of goods and services produced within a
country’s borders in a given year, is a commonly used indicator for economic development.

*Economic openness* refers to the extent to which a country is open to economic transactions with the outside world. This is generally measured as imports plus exports (total trade), divided by GDP.

For the purposes of this paper, the *nuclear weapons states* are the five states that have officially declared that they possess nuclear weapons under the terms of the Nuclear Non-proliferation Treaty (NPT). These include China, France, Russia, the United Kingdom, and the United States. Also included are India, Pakistan and Israel. Though neither India nor Pakistan has officially declared itself to be a nuclear weapons state under the NPT, both countries detonated nuclear devices in 1998, thus removing any suspicion that they might possess nuclear arms. While Israel also has not declared itself a nuclear weapons state, Western intelligence has revealed that it too has a nuclear arsenal.

As defined by the United States government in 1994, the term “*weapons of mass destruction*” (WMD) refers collectively to nuclear, biological and chemical weapons. In the 1996 Defense against Weapons of Mass Destruction Act, the term was further defined as “any weapon or device that is intended, or has the capability, to cause death or serious bodily injury to a significant number of people through the release, dissemination, or impact of a.) toxic or poisonous chemicals or their precursors; b.) a disease organism; or c.) radiation or radioactivity.”

*Nonproliferation* refers to the effort to stem the spread of WMD, the means of delivering such devices, and related technology and knowledge from one country to

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29 See Executive Order #12938 (“Proliferation of Weapons of Mass Destruction”) for more information.
another. At present, national controls on exports, and internationally agreed upon standards, are commonly used in coordination to combat the spread.

In keeping with the Krasner and Keohane definitions of regimes, the international nonproliferation regime is defined as the collection of internationally agreed upon principles, norms, rules, treaties, and organizations within the issue-area of nonproliferation. Though initially consisting of those entities related to nuclear nonproliferation efforts, the NP regime today also addresses chemical and biological weapons, as well as some conventional arms and dual-use goods and technologies (items with both civilian and military applications.) States that possess stricter national export control systems and are more willing to join NP-related organizations or ratify relevant treaties are considered to be more committed to international nonproliferation. At present, the international NP regime includes the following treaties and agencies:

- **The 1968 Nuclear Non-proliferation Treaty (NPT):** The NPT is a binding treaty that entered into force in 1970. It is designed to prevent the development of nuclear weapons in states that did not possess such weapons before 1967, while at the same time promoting the sharing of nuclear technology for peaceful purposes between the five recognized nuclear powers and the non-nuclear weapons states. Compliance with the NPT is determined through periodic inspections conducted by the IAEA.

- **The International Atomic Energy Agency (IAEA):** The IAEA was created as an autonomous organization under the UN in 1957. It serves to promote scientific and technological cooperation in the realm of peaceful uses of nuclear technology, as well as conducting periodic inspections in order to ensure compliance with the NPT.

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30 See debate.uvm.edu/wmd2002/019.htm.
• The 1972 Biological and Toxin Weapons Convention (BWC): The BWC prohibits the research, development, and proliferation of offensive biological weapons.

• The 1993 Chemical Weapons Convention (CWC): The CWC bans the development, production, stockpiling, and use of toxic chemicals as a weapon. It requires that destruction of chemical weapons begin within one year after the treaty goes into effect, and it creates an entity, the Organization for the Prohibition of Chemical Weapons, to implement the treaty and ensure compliance.31

• Regional Nuclear Weapons-Free Zone Agreements (NWFZs): NWFZs are areas in which testing, use, manufacturing, production, storage, and deployment of nuclear weapons is prohibited. Existing NWFZs currently include: 1.) the Tlatelolco Treaty area, encompassing much of Latin America and the Caribbean; 2.) the Rarotonga Treaty area, establishing a zone in the South Pacific; 3.) the Treaty of Bangkok area, creating a zone in Southeast Asia; and 4.) Single-state zones in Austria and Mongolia.

• The European Union (EU) Harmonized Export Controls System: The EU system establishes criteria that members can take into account in regard to their domestic export control systems.

The regime also includes the following multilateral export control organizations:

• The Nuclear Suppliers Group (NSG or London Club): The NSG was created following an Indian nuclear explosion in 1974. It stopped meeting during the 1980s, but resumed operation following the Gulf War in 1991. At present, it consists of thirty nuclear supplier states. It attempts to control exports of nuclear-related materials, equipment and technology.

31 See www.clw.org/control/cwcpoint.html for more information.
• **The Nuclear Exporters Committee (Zangger Committee):** Formed in the early 1970s, the Zangger Committee is a multilateral forum in which members can exchange information about nuclear exports and licenses of exports to non-nuclear states.

• **The Missile Technology Control Regime (MTCR):** The MTCR was formed in 1987. Its purpose is to “restrict the export of delivery systems and related technology for those systems capable of carrying a 500 kilogram payload at least 300 kilometers, as well as systems intended for the delivery of weapons of mass destruction.”

• **The Australia Group (AG):** The AG was formed following the discovery that Iraq had used chemical weapons against Iran in the Iran-Iraq War (1980-1988). Members meet annually in order to discuss ways in which export-licensing measures can be heightened so as to prevent the spread of chemical, biological, and related dual-use agents.

• **The Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies (WA):** The WA is the newest multilateral export control organization and the only one, thus far, to be created since the end of the Cold War. It is the successor to the Cold War-era Coordinating Committee for Multilateral Export Controls (COCOM). The WA was created in 1996 as a forum in which members could discuss ways to strengthen export controls on various kinds of conventional weapons and dual-use technologies and goods.

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32 See www.fas.org/nuke/control/mtcr.
HYPOTHESES

Main Hypothesis

The greater the level of liberal democracy in a state, the greater the state’s level of participation in the international nonproliferation regime.

Alternative Hypotheses

H_A1: The greater the level of economic development in a state, the greater the state’s level of participation in the international nonproliferation regime.

H_A2: The greater the level of economic openness in a state, the greater the state’s level of participation in the international nonproliferation regime.

H_A3: Nuclear weapons states are more likely to demonstrate higher levels of participation in the international nonproliferation regime than non-nuclear weapons states.
I am attempting to determine the extent to which liberal democracy influences state participation in the international nonproliferation regime. Because it is necessary to hold the effects of economic development, economic openness, and nuclear weapons state (NWS) status constant, and because I believe the relationship in question to be linear, I have elected to use multivariate ordinary least squares (OLS) regression.

I have chosen to examine the period following the Cold War. In the years since the collapse of the Soviet Union, nonproliferation has quickly risen to become one of the premier problems facing the international community. During the Cold War, the spread of chemical and biological weapons was arguably not viewed with the same urgency as it has been in the post-Cold War period. Furthermore, the NP regime was relatively small, focusing primarily on nuclear weapons. The political environment of the Cold War and post-Cold War eras is also decidedly different, and it is possible that the conflict between the West and the Soviet Empire in some way influenced the willingness of countries to commit to the NP regime. Therefore, I have chosen to analyze only the post-Cold War era.

This study focuses on state participation in the international nonproliferation regime in three different years, beginning with 1992. I then look at the remaining post-Cold War period in four-year intervals, so that my study encompasses 1992, 1996, and 2000.
I chose those particular years for several reasons. 1992 was the first full year following the collapse of the Soviet Union, which was arguably the last major event of the Cold War. An examination of 1992 allows one to gain insight into the state of the international NP regime at the beginning of the post-Cold War era. 2000 was the last year for which complete data were available for the international community at the time of this study. That year is also of particular significance because it is the last complete year before the events of September 11, 2001. Because so little time has elapsed since those events, it is difficult to know how the Bush administration’s linkage of the international “war on terror” and the multilateral nonproliferation effort will affect the NP regime and countries’ decisions concerning their participation in it. Finally, 1996 was included because, as much can change in international politics in a relatively brief period, it was necessary to shorten the interval between the years I had already chosen. 1996 was selected in particular because it is equidistant from the other two years of the study.

Though time-series analysis covering each year between 1992 and 2000 would perhaps offer a fuller picture, an examination of three different staggered years should offer significant evidence in a project that represents an initial foray into a relatively unexplored area, such as this. I perform separate regression analyses for each year.

My cases are the independent countries in existence in the international community in each year of the analysis. There were 189 states in existence in the first year and 192 in the second and third years. I used various editions of the *CIA World Factbook* in order to determine which independent states existed in each year.

I have lagged the independent and dependent variables appropriately. The independent variables in the 1992 analysis represent 1991 values, the independent

The dependent variable is participation in the international nonproliferation regime. It is operationalized as an index that signifies the number of NP-related treaties and organizations to which a state is party. Using the appropriate editions of the CIA World Factbook, I determined each state’s affiliation in the relevant treaties and organizations. Initially, each treaty and organization represented a separate variable. If a state was a party to an agreement, it was coded 1. If it was not, it was coded 0. I then standardized the values of each treaty/organization variable, and calculated an average of each state’s total score. I was thus able to create an index that represents a state’s participation in the international NP regime, based on the numbers of treaties and organizations to which it belongs. The higher a state’s score on the index, the more participation they have demonstrated in the NP regime through membership in its associated entities.

The main independent variable (MIV) is liberal democracy. This represents the level of liberal democracy present in a country in a given year. In an attempt to ensure

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33 The exception to this was the “regional agreement” variable. If a state belonged to a regional agreement of some sort, either a NWFZ such as Tlatelolco or Bangkok or the EU harmonized export control system, then it was coded as 1 for the regional agreement variable. If a state did not belong to any such regional agreement, then it was coded as 0.

34 In the 1992 analysis, the index included the following component treaties/organizations: The IAEA, the NPT, the BWC, the NSG, the AG, the MTCR, COCOM, the Zangger Committee, and regional agreements (consisting of Tlatelolco and Rarotonga). In 1996, the index included the IAEA, the NPT, the BWC, the CWC, the NSG, the AG, the MTCR, the Zangger Committee, the WA, and regional agreements (again Tlatelolco and Rarotonga). In 2000, the same components were included, the only difference being the addition of the Bangkok Treaty and the EU export control system as regional agreements. It should be noted that this index is subsequently referred to as the “participation in international nonproliferation regime index,” or simply “nonproliferation index.”
validity of findings, I employed three different commonly used measures of liberal democracy.

The first measure is based on data from the non-profit, non-partisan Freedom House organization. Each year, Freedom House compiles an annual country by country survey of the state of freedom in the world. Based on the evaluations of government officials, scholars, journalists, think tanks and other experts, they assign a score from 1 to 7 on a country’s political rights and a separate score from 1 to 7 on a country’s civil liberties. One represents the freest possible, 7 represents the least free. Scores reflect the analysts’ perception of reality, not unimplemented legislation or government rhetoric. In constructing my Freedom House liberal democracy variable, I reconfigured the two scores so that 1 represented the least freedom available and 7 represented freest. I then averaged the two scores, so that a country could score anywhere from 1 (decidedly authoritarian) to 7 (decidedly liberal democratic).35

The second measure is based on Ted Gurr’s much respected POLITY IV dataset. Based primarily on scholarly analyses, the POLITY researchers score a country on the basis of several authority characteristics: regulation of executive recruitment, competitiveness of executive recruitment, openness of executive recruitment, executive constraints, regulation of participation, and competitiveness of participation. Eleven point (scored 0 to 10) democracy and autocracy scales are constructed for each country. A state’s final “polity” score is then derived by subtracting the state’s level of autocracy from its level of democracy. I used the final polity score as a measure of liberal democracy.36

35 The Freedom House data are available at www.freedomhouse.org.
36 The POLITY IV data are available at www.cidem.umd.edu/inscr/polity.
The final measure of democracy is based on Tatu Vanhanen’s Polyarchy dataset. The Polyarchy scores take into account the percentage of the population that voted in the most recent election and the share in percentage of votes won by any parties other than the winning party or coalition. These two scores are then multiplied to produce a democracy score. This measure obviously favors fragmented party systems, and is based upon the idea that the more electorally competitive a polity is, the more democratic it is. It should be noted that data for 1999 (corresponding with my analysis of 2000) are not available. As a result, I was forced to use 1998 data when creating my Polyarchy democracy measure.37

In the regression results, b-scores for each of the democracy variables should be positive, indicating that the higher a country’s democracy score, the greater its participation in the international NP regime.

I include control variables for economic development, economic openness, and nuclear weapons state (NWS) status. It is likely that economic development positively influences a state’s participation in the NP regime, as wealthier countries would be more capable of meeting the expenses associated with reducing or renouncing relevant imports and exports, as mandated by some of the NP treaties and organizations. Existing research has indicated this to be the case in regard to national export controls, so it is plausible that the same is true of NP regime participation. Economic development is operationalized in each year as GDP per capita in US dollars. The data were reported in the appropriate CIA World Factbooks. In the regression results, b-scores should be positive, indicating that the more economically developed a country, the greater its participation in the international NP regime.

37 The Polyarchy data are available at www.sv.ntnu.no/iss/data/vanhanen.
It is also possible that economic openness positively influences regime participation. It is arguable that countries engaged in higher levels of trade with the outside world are more susceptible to outside normative influence and are more economically dependent upon states that already adhere to the NP regime. In order to secure more economic benefits from trading partners, they might feel compelled to participate in the NP regime. Economic openness is operationalized as a country’s trade (imports plus exports in US$) divided by total GDP. The data were found in the appropriate CIA World Factbooks. In the regression results, I would expect b-scores to be positive, indicating that the more economically open a country, the higher its level of participation in the NP regime.

Finally, it is possible that a state’s status as an NWS might positively influence its nonproliferation commitment. NWS might possess a greater understanding of the dangers of weapons of mass destruction and thereby hope to control them, or they might want to protect their existing status and deny nuclear weapons (and other WMD) to their fellow states, so as to ensure their continued dominance. NWS status is a dichotomous variable, coded 1 for NWS, 0 for non-NWS. NWS include the states officially recognized in the NPT, as well as known nuclear states India, Pakistan and Israel. In the regression results, I would expect b-scores to be positive, indicating that NWS are more likely to participate in the NP regime than non-NWS.
FINDINGS

Regression analysis offers strong evidence that the level of liberal democracy influences a state’s level of participation in the international nonproliferation regime. My main hypothesis is supported in each year of the study, as well as with each measurement of democracy.

1992: The Aftermath of the Cold War

In 1992, all three measures of democracy are statistically significant at less than the .001 level. The b-score of the Freedom House measure, roughly 6.25, is higher than the b-scores of the other two measures (see Table 1). This indicates that for every one unit increase in a state’s Freedom House democracy score, controlling for the effects of economic development, openness, and NWS status, a state scored 6.25 points higher on the nonproliferation regime participation index. Using the POLITY data, ceteris paribus, every one-point increase in liberal democracy results in a roughly 2.79 unit increase in NP regime participation. Finally, using the Polyarchy data, an increase of one unit in a state’s liberal democracy score means a corresponding 1.3 unit increase in NP regime participation, holding constant the effects of the other independent variables.

The differences in the various democracy scores, as shown in each model, perhaps reflect the different aspects of democracy that each measure attempts to capture. While Freedom House focuses more on the political rights and civil liberties available in a country, POLITY chooses to focus more on the competitiveness of executive elections.

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38 Initial diagnostic analyses revealed the presence of some multicollinearity in each model, though not at a level at which I was concerned.
and the constraints on the executive. Polyarchy focuses on the competitiveness of general elections, as well as overall citizen participation. Regardless of the measure of democracy used, the models indicate that the degree of liberal democracy present in a state was quite influential in explaining that state’s participation in international nonproliferation efforts in 1992.

In Model #1, using the Freedom House data, the beta weight of liberal democracy is .202. In Model #2, which uses the POLITY scores, though the b-score of democracy is substantially lower than that of the Freedom House measure, the beta weight is significantly higher at .3. In Model #3, the beta weight of the Polyarchy variable is roughly .27. Based on these results, one can say that in 1992, democracy was the second most influential variable associated with NP regime participation, behind economic development.

Economic development is an extremely robust independent variable. Its b-score is higher than that of liberal democracy in each model, as is its beta weight. In the first model, economic development was roughly three times more powerful than democracy was. In the second and third models, it was over twice as powerful. Obviously, as implied by other research, a state’s level of economic development seems to influence its NP regime participation.

Though its t-scores are lower than those of democracy or economic development, economic openness is still quite significant. Surprisingly, its sign is in the opposite direction than what I expected to see in my alternative hypothesis. The 1992 models indicate that for every one unit increase in a state’s level of openness (trade with the outside world), that state is likely to experience around a one to two unit decrease in its
participation in the NP regime. This study indicates that the more economically open a country is, the less participation it will demonstrate in international nonproliferation efforts.

Finally, the nuclear weapons state variable is not significant at a recognized level. While its b-scores vary, depending on the measurement of democracy used in a particular model, its beta weights are quite low. It appears, in 1992, that a state’s NWS status had little impact on its commitment to nonproliferation.

Table 1: Influences on Participation in the International Nonproliferation Regime, 1992

<table>
<thead>
<tr>
<th>Model #1</th>
<th>b-score</th>
<th>Standard error</th>
<th>Beta weight</th>
<th>t-score</th>
<th>Significance</th>
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<tr>
<td>Liberal Democracy (FH)</td>
<td>6.25</td>
<td>.017</td>
<td>.202</td>
<td>3.673</td>
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<td>.000</td>
<td>.689</td>
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<td>-3.346</td>
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<td>-.021</td>
<td>-4.11</td>
<td>.068</td>
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<td>Adj. R²: .625</td>
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<tr>
<td>F-score: 69.723</td>
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<td>N=161</td>
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<table>
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<th>Beta weight</th>
<th>t-score</th>
<th>Significance</th>
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<td>Liberal Democracy (POLITY)</td>
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<td>.005</td>
<td>.309</td>
<td>5.901</td>
<td>&lt;.001</td>
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<td>.669</td>
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<td>-.106</td>
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<td>.026</td>
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<td>-.035</td>
<td>-.715</td>
<td>.476</td>
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<td>Adj. R²: .704</td>
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<td>F-score: 83.699</td>
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<tr>
<td>N=135</td>
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</table>

<table>
<thead>
<tr>
<th>Model #3</th>
<th>b-score</th>
<th>Standard error</th>
<th>Beta weight</th>
<th>t-score</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liberal Democracy (Polyarchy)</td>
<td>1.305</td>
<td>.003</td>
<td>.273</td>
<td>4.506</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Economic Development</td>
<td>7.33</td>
<td>.000</td>
<td>.617</td>
<td>9.707</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Economic Openness</td>
<td>-1.358</td>
<td>.001</td>
<td>-.113</td>
<td>-2.349</td>
<td>.020</td>
</tr>
<tr>
<td>Nuclear Weapons State</td>
<td>-4.978</td>
<td>.167</td>
<td>-.015</td>
<td>-.298</td>
<td>.766</td>
</tr>
<tr>
<td>Adj. R²: .645</td>
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<tr>
<td>F-score: 73.522</td>
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<tr>
<td>N=156</td>
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</table>
The adjusted $R^2$ of the three models indicates that the independent variables included in the study explain between roughly 60 and 70% of the variation in NP regime participation. An examination of the scatterplots of the errors and predicted values showed that there was no heteroskedasticity in any of the three models, though there were two outliers that were unsatisfactorily explained: Israel and Iceland. Israel is a strong liberal democracy that has refused to participate in much of the NP regime due to its continued conflict with its neighbors. Iceland, while also a strong democracy, was party to the NPT and the IAEA in 1992, but was not a member of any of the export control organizations, unlike most of its fellow democracies. An $R^2$ test revealed no significant autocorrelation.

In 1992, in the aftermath of the Cold War, it appears that liberal democracy was strongly correlated with state participation in the nonproliferation regime. This finding offers support for my hypothesis.

**1996: The Increasing Importance of Democracy**

In 1996, all three measures of democracy are again statistically significant at less than the .001 level. The b-score of the Freedom House measure is also higher than the b-scores of the other two democracy variables (see Table 2), as was the case in 1992. Controlling for the other independent variables, the Freedom House b-score is around 9.36, indicating that for every one unit increase in a country’s democracy rating, its score on the NP regime participation index increased by over nine points. The b-score for the POLITY variable is roughly 3.5, indicating that, ceteris paribus, NP regime participation increased by over 3.5 units for every one unit increase in democracy. The Polyarchy data also demonstrate a relationship between democracy and NP regime participation. The
Polyarchy b-score is 2.28, meaning that for every one unit increase in democracy, there was a corresponding 2.28 unit increase in NP regime participation (holding the other controls constant).

The influence of democracy on NP regime participation increased between 1992 and 1996. One cannot compare beta weights across models, however one can compare b-scores. In 1992, the b-scores of the democracy measures were roughly 6.3, 2.79, and 1.3. In 1996, the b-scores rose to roughly 9.36, 3.5, and 2.28. As the communist regimes of the Cold War era and other authoritarian governments collapsed, they were replaced largely by democratic governments of varying degrees. At the same time, the impact of democracy on NP regime participation increased.

Economic development continues to be a powerful and robust variable in 1996. Though its b-score is less than that of democracy in Model #1, it is higher in the other two models, and its beta weight is significantly higher than that of democracy in Models #1 and #2. Interestingly, the b-scores of economic development declined from 1992 to 1996. As the impact of democracy increased, the influence of economic development seemed to decline.

Economic openness remains statistically significant in 1996, and it continues to demonstrate an inverse relationship with NP regime participation. NWS status again fails to achieve a recognized level of statistical significance, so it is difficult to know the extent to which the relationship portrayed reflects reality. It appears that, as in 1992, NWS status had little effect on NP regime participation.

The adjusted R² of the three models indicates that the independent variables explain between roughly 50 and 60% of the variation in nonproliferation regime
participation. This is roughly 10% less than the explication offered in the 1992 models.

It is likely that other factors influenced NP commitment in 1996 that were of less importance four years earlier.

Table 2: Influences on Participation in the International Nonproliferation Regime, 1996

<table>
<thead>
<tr>
<th>Model #1</th>
<th>b-score</th>
<th>Standard error</th>
<th>Beta weight</th>
<th>t-score</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liberal Democracy (FH)</td>
<td>9.357</td>
<td>.018</td>
<td>.308</td>
<td>5.188</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Economic Development</td>
<td>5.852</td>
<td>.000</td>
<td>.603</td>
<td>9.046</td>
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<tr>
<td>Economic Openness</td>
<td>-3.949</td>
<td>.001</td>
<td>-2.247</td>
<td>-4.058</td>
<td>&lt;.001</td>
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<tr>
<td>Nuclear Weapons State</td>
<td>4.722</td>
<td>.188</td>
<td>.014</td>
<td>.251</td>
<td>.802</td>
</tr>
<tr>
<td>Adj. R^2: .496</td>
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<tr>
<td>F-score: 44.987</td>
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<td>N= 175</td>
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<td></td>
<td></td>
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<tr>
<td>Model #2</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liberal Democracy (POLITY)</td>
<td>3.504</td>
<td>.005</td>
<td>.372</td>
<td>6.468</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Economic Development</td>
<td>5.984</td>
<td>.000</td>
<td>.611</td>
<td>8.702</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Economic Openness</td>
<td>-2.815</td>
<td>.001</td>
<td>-.167</td>
<td>-2.604</td>
<td>.010</td>
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<tr>
<td>Nuclear Weapons State</td>
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<td>.185</td>
<td>-.008</td>
<td>-.138</td>
<td>.890</td>
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<td>Adj. R^2: .566</td>
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<td>F-score: 50.641</td>
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<td>N= 148</td>
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<td></td>
</tr>
<tr>
<td>Model #3</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liberal Democracy (Polyarchy)</td>
<td>2.284</td>
<td>.003</td>
<td>.474</td>
<td>8.331</td>
<td>&lt;.001</td>
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<tr>
<td>Economic Development</td>
<td>4.713</td>
<td>.000</td>
<td>.487</td>
<td>7.531</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Economic Openness</td>
<td>-3.355</td>
<td>.001</td>
<td>-.203</td>
<td>-3.594</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Nuclear Weapons State</td>
<td>-2.062</td>
<td>.173</td>
<td>-.006</td>
<td>-.119</td>
<td>.905</td>
</tr>
<tr>
<td>Adj. R^2: .586</td>
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<tr>
<td>F-score: 62.124</td>
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</tr>
<tr>
<td>N= 169</td>
<td></td>
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</tbody>
</table>

An R^2 test reveals no serious autocorrelation. An examination of the scatterplots again showed that there was no heteroskedasticity, but the number of outliers increased from 1992. The models failed to explain satisfactorily Cyprus, Iceland, Israel, Taiwan,
Trinidad/ Tobago, the United Arab Emirates, and the United States. Cyprus\textsuperscript{39}, Israel and Taiwan have all been reluctant to join the NP regime, perhaps as a result of the constant conflict or threat of conflict that those countries face. The US, because of its absence from any regional NP agreements, possesses a lower level of NP regime participation than most of its fellow democracies. As was the case in 1992, Iceland, unlike many of its fellow democracies, was not a party to the export control organizations. Trinidad/ Tobago and UAE are not easily explained.

In 1996, the adjusted $R^2$ of the models dropped, indicating that there were more factors than those included that influenced regime participation. However, the correlation of democracy with NP regime participation increased.

2000: The Nonproliferation Regime on the Eve of the New Millennium

In 2000, the three measures of democracy again achieved statistical significance, with the Freedom House scores at the .001 level and the other two at less than .001 (see Table 3). The b-score of the Freedom House measure remained higher than that of the POLITY and Polyarchy variables, as in 1992 and 1996. Controlling for the effects of the other independent variables, the Freedom House b-score is roughly 6.67, indicating that for every one unit increase in a country’s level of democracy, there is a corresponding 6.67 unit increase in its level of participation in the NP regime. The b-score for the POLITY measure is roughly 3.1, meaning that NP regime participation increases 3.1 units for every one unit increase in democracy, \textit{ceteris paribus}. Finally, the Polyarchy b-score is around 1.94. For every one unit increase in democracy, \textit{ceteris paribus}, there is a 1.94 unit increase in regime participation, according to this measure.

\textsuperscript{39} In this study, Cyprus refers to the government of the Greek portion of the island, rather than the Turkish portion. Data sources consider the Greek state of Cyprus to be substantially more democratic,
In these three models, the beta weight of economic development is higher than that of the democracy measures, indicating that it is still, for the most part, the most powerful influence on NP regime participation. In Model #1, the beta weight of economic openness is also higher than that of democracy. Using the Freedom House data, the relative influence of democracy drops in comparison to the two economic variables. Democracy remains the second most powerful explanatory variable in Models #2 and 3.

Again comparing b-scores across models, the impact of democracy on NP regime participation drops somewhat from its 1996 levels, from 9.36, 3.5 and 2.28 to 6.67, 3.1, and 1.94. Economic development and economic openness both remain statistically significant, and openness continues to possess an inverse relationship with the dependent variable. NWS status again seems to have little impact on NP regime participation.

The adjusted $R^2$ of the models indicates that the independent variables explain between 49 and 59% of the variation in the regime participation scores. This is roughly equivalent to the explication ability of the 1996 model, and lower than the ability of the 1992 model. It appears that after 1992, the inclusion of other independent variables is necessary to improve the overall explication ability of the models.

An $R^2$ test again reveals no serious autocorrelation. An examination of the scatterplots showed no heteroskedasticity, but the number of outliers inadequately explained by the models remained the same as in the 1996 study. The increase in outliers from two in 1992 to seven in 1996 and 2000 is likely related to the decline in the $R^2$ of the models. Other independent variables are necessary to explain more fully NP regime commitment in 1996 and 2000.
In 2000, as the new millennium rapidly approached, liberal democracy continued to be strongly associated with nonproliferation regime participation. My hypothesis was supported in each year of the study, using three different measures of democracy.
CONCLUSION

Multivariate regression analyses of the years 1992, 1996 and 2000 support my contention that democracy influences a state’s participation in the international nonproliferation regime in the post-Cold War era. This paper represents an initial approach to the question of why some states participate more in the NP regime than others.

There is much more research necessary, before scholars have a satisfying understanding of the phenomenon. For example, a time-series analysis that incorporates each year since the end of the Cold War into one model would be appropriate in order to track changes in the influence of democracy and other variables from year to year.

The inclusion of other variables in future models is also necessary. Because democratic countries that tend to face conflict seemed to fall outside the explication ability of these models, a study that includes some sort of conflict or belligerency variable might offer a fuller explanation of why some countries are reluctant to participate more in the NP regime.

An important component of the international nonproliferation regime that is noticeably absent from the participation index is the existence of national export control systems. Many of the treaties and organizations that constitute the NP regime would be useless without domestic export controls to enforce international rules and norms. Unfortunately, data limitations prevented me from including this variable in my analysis.
As data become available, scholars should endeavor to include national export control system effectiveness in their studies of state commitment to nonproliferation.

A final necessary addition to future research would be to assess in some way the extent to which countries have actually honored their commitments to the NP regime. For example, Iraq was found to be in violation of the NPT in 1991 and North Korea was found in similar violation in 1994. This lack of compliance is not reflected in the countries’ regime participation scores. Future studies would better reflect reality if participation index scores somehow incorporated this element.

The conclusions in this paper have significant policy implications. It supports the US foreign policy in recent years of encouraging democratization. It also suggests that the US’s twin goals of democratization and nonproliferation are interrelated. Perhaps an important way to achieve the latter is to encourage the former.

This study is also valuable to the study of democracy and the nonproliferation regime. These findings once again support the notion that democracies behave differently to other forms of government. The creation of the NP regime participation index should prove useful in future studies of nonproliferation.

At the beginning of a new millennium, the threat of nuclear, biological and chemical weapons has replaced the democratic-communist struggle as one of the major issues facing the international community. As countries throughout the world continue to democratize, perhaps there is hope that the shadow cast by the proliferation of weapons of mass destruction will seem far less menacing in the future.
REFERENCES


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