

**Asia and Nonproliferation
After the Cold War:
Issues, Challenges and Strategies**

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Abstract

This working paper highlights some of the most worrisome proliferation issues in Asia, in particular in light of the Indian and Pakistani nuclear tests in May 1998 and discusses their implications for regional security and stability. It suggests that the current nonproliferation regimes face three sets of serious challenges in the post-Cold War security environment and are therefore hampered in their effectively carrying out their mandates: the growing number of suppliers and the difficulties in norm building; globalization and technological diffusion; and, the inadequacy of institutional responses and reforms. It argues that for the existing nonproliferation regimes to be more effective strong and skilled political leadership and the necessary institutional reforms and institution building are required. More importantly, efforts must also be made to develop fair, effective, and verifiable mechanisms under strong political leadership and through multilateral channels to both deal with the immediate proliferation concerns and address the underlining security, commercial, and political causes of weapons proliferation. A successful strategy should therefore be one that is both holistic in approach (i.e., addressing symptoms and causes) and synergetic in execution (i.e., better coordination of efforts and policies in global, multilateral, and domestic contexts).

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I. Introduction¹

One of the most salient security issues after the Cold War is the proliferation of weapons of mass destruction (WMDs) and their delivery systems, and the destabilizing accumulation of conventional weapons in regions of ongoing and/or potential conflicts. Ever since the end of the Gulf War of 1990-91, the international community has made strenuous efforts to either stem or reverse weapons proliferation. Significant progress has been made in recent years, most noticeable in this regard have been the indefinite extension of the Treaty on the Nonproliferation of Nuclear Weapons (NPT), the conclusion and entry into force of the Convention on Chemical Weapons (CWC), the adoption by the United Nations General Assembly of the Comprehensive Test Ban Treaty (CTBT), and the Ottawa Convention Banning Anti-Personnel Landmines. Work continues against all odds in addressing areas of immediate proliferation concerns: the dismantling of Iraq's WMD programs and the enforcement of various UN resolutions through ongoing inspections by the United Nations Special Commission on Iraq (UNSCOM); and the implementation of the Framework Agreement in October 1994 between the United States and the Democratic People's Republic of Korea (DPRK).

Notwithstanding these achievements, nonproliferation remains one of the most challenging tasks facing the international community, more so perhaps in the aftermath of the Indian and Pakistani nuclear tests in May 1998 that have both shocked the world and raised serious questions about the effectiveness of the nonproliferation regimes in their abilities to detect, dissuade, and deter proliferation activities. Nor is complacency warranted in Northeast Asia. North Korea's nuclear weapons program is far from being dissolved; witness the recent media coverage and the controversy over whether Pyongyang is renegeing on its nuclear pledge. Missile proliferation in the region continues to pose serious threats to security and uncontrolled conventional weapons acquisitions could result in an escalating and highly destabilizing arms race. Meanwhile, the planned development and deployment of theatre missile defence (TMD) systems, ostensibly justified as counter-proliferation defensive measures against the threat of ballistic missiles, can have serious negative impacts on arms control negotiations, including the negotiation and conclusion of a Fissile Materials Cut-Off Treaty (FMCT). Last but not least, Japan's plutonium policy remains a long-term proliferation concern that must not be overlooked.

These issues, grave as they are, represent only the symptoms rather than the causes of the problems of weapons proliferation. And the existing nonproliferation regimes at both the global and multilateral levels have yet to overcome a series of obstacles to achieve more effectively their objectives. Unless and until fair, effective, and verifiable mechanisms can be worked out with strong political leadership and through multilateral channels to both deal with the immediate proliferation concerns and address the underlining security, commercial, and political causes of weapons proliferation, the consensus and momentum created in the wake of the Gulf War for fighting proliferation could be lost.

This working paper seeks to address these issues. The next section highlights some of the most worrisome proliferation issues in both South and Northeast Asia and discusses their implications for regional security and stability. This is followed by a brief synopsis of the causes of weapons proliferation, from both the demand and supply perspectives. The paper then examines the current nonproliferation regimes in terms of their main goals, the mechanisms to achieve these goals, and their efficacy and limitation in the face of three sets of daunting challenges: the growing number of suppliers and the difficulties in norm building; globalization and technological changes; and the inadequacy of institutional responses. Some suggestions for strengthening nonproliferation are offered and the paper concludes with a discussion on how the Track-II process can make a useful contribution in these endeavors. The general conclusion is that for the existing nonproliferation regimes to be more effective, strong and skilled political leadership and the necessary institutional reform and institution building are required. A successful strategy should be one that is both holistic in approach (i.e., addressing symptoms

¹ This working paper is a revised version of a paper presented at the fourth meeting of the CSCAP North Pacific Working Group, 8-10 November 1998, Jing Lun Hotel, Beijing, China.

and causes) and synergetic in execution (i.e., better coordination of efforts and policies in global, multilateral, and domestic contexts).

II. Proliferation in Asia: Immediate Concerns and Latent Threats

By any account, the Indian and Pakistani nuclear tests in May 1998 represent a serious setback for the international nonproliferation regimes. Within three weeks, India and then Pakistan, in defiance of global opinions, pleas, and threatened sanctions, detonated 11 nuclear devices.² The testing took place merely three years after the successful indefinite extension of the NPT, the conclusion of CTBT, and what had appeared to be the first steps toward confidence building between New Delhi and Islamabad.³ While the long-term effect on the nuclear nonproliferation regime remains to be assessed,⁴ there are at least four immediate consequences. The first is the danger, now that both India and Pakistan have gone nuclear, of proceeding with weaponization. This could touch off a nuclear arms race in the region.⁵ This scenario is particularly worrisome, given that both countries are also in the midst of a missile development race. India and Pakistan have both recently tested their intermediate-range ballistic missiles, making it possible for each to hold hostage major cities in the other country.⁶ Indeed, should the missile be armed with nuclear warheads (India's *Agni* has a tested range of 1,600 km and a payload of 1,000 kg, while Pakistan's *Ghauri*, test flighted in April 1998, has a range of 1,500 km with a payload of 700 kg), both countries would be in a position to inflict massive destruction on the other's population centers. Secondly, given the continuing conflicts over the Kashmir problems, the nuclear tests on the sub-continent present the specter of ongoing disputes and conflicts getting out of hand and escalating to a nuclear exchange.⁷ Indeed, this fear has been reinforced as both sides seem to have hardened their positions recently. Right after the Indian testing, the BJP Home Minister suggested that with the atomic weapons, the Kashmir issue had become a new ball game.⁸ Moreover, as the debates on the consequences of nuclear proliferation have suggested, one would have serious concerns over crisis stability, nuclear accidents, and the temptation for preemptive attacks in South Asia. These and other scenarios simply cannot be ruled out.⁹

Thirdly, the South Asian balance of power has obviously undergone a drastic change after the nuclear tests, in particular with regard to the Indo-Chinese equation, as one can hardly disregard the China factor in any discussion of arms control and weapons proliferation in the region.¹⁰ If China enjoyed a nuclear superiority in the past and therefore was able to reduce its conventional deployments on the Tibetan plateau and along the lines of actual control (LAC) in the Sino-Indian border regions, now

² Manoj Joshi, "Nuclear Shocking Waves," *India Today*, 25 May 1998, pp.12-20; Evan Thomas, John Barry, and Melinda Liu, "Ground Zero," *Newsweek*, 5 May 1998, pp.28-32A; Michael Elliott, "Out of Pandora's Box," *Newsweek*, 8 June 1998, pp.20-27.

³ Khurshid Khoja, "Confidence-Building between India and Pakistan: Lessons, Opportunities, and Imperatives," in Michael Krepon *et al.*, *A Handbook of Confidence-Building Measures for Regional Security*. 3rd Edition (Washington, DC: The Stimson Center, March 1998), pp.129-50.

⁴ George Perkovich, "Think Again: Nuclear Proliferation," *Foreign Policy* 112 (Fall 1998), pp.12-23.

⁵ Umer Farooq, "Pakistan ready to arm Ghauri with warheads," *JDW*, 3 June 1998, p.4. See also, John F. Burns, "Arms Race Feared," *New York Times*, 9 May 1998, pp.A1, A6; Barbara Crossette, "South Asian Arms Race: Reviving Dormant Fears of Nuclear War," *ibid.*, 29 May 1998, p.A7.

⁶ Harinder Baweja with Zahid Hussain, "Ghauri: Fire in the Sky," *India Today*, 20 April 1998, pp.34-35; Manoj Joshi, "Deadly Option," *India Today*, 4 May 1998, pp.38-40.

⁷ John Stackhouse, "Kashmir teeters on brink of bloodier times," *The Globe and Mail*, 26 June 1998, p.A9.

⁸ Rahul Bedi, "Eyes on Asia," *JDW*, 3 June 1998, pp.43-44.

⁹ David J. Karl, "Proliferation Pessimism and Emerging Nuclear Powers," *International Security* 21:3 (Winter 1996/97), pp.87-119.

¹⁰ Brahma Chellaney, "The Challenge of Nuclear Arms Control in South Asia," *Survival* 35:3 (Autumn 1993), pp.121-36.

Beijing must reconsider its position.¹¹ This development must be viewed in the broader context of a souring bilateral relationship in the wake of Indian defence minister's provocative remarks that China remains the number one security threat.¹² Notwithstanding the slow process of confidence building over the past decade and the two agreements on military confidence building measures (CBMs) signed in 1993 and 1996, respectively, the sources of bilateral mistrust and hostility have never been truly removed.¹³ India's testing and Prime Minister Vajapayee's letter to President Clinton justifying the testing on China's threat further complicate both the bilateral relations, including the implementation of CBM agreements and negotiations toward a final resolution of long-lasting border issues, and the delicate regional balance of power. Ironically, if the changed geostrategic situation is to the disadvantage of China, Beijing itself may have been partially responsible for its making.

Finally, the Indian/Pakistani nuclear testing has cast a shadow over the ongoing and already difficult negotiations on key disarmament and nonproliferation issues.¹⁴ The credibility of the NPT and CTBT regimes aside, the future for a fissile materials cut-off treaty must suffer from the May shock wave. One could see deadlock ahead considering that both countries, India in particular, will strive to strike a bargain, with a price tag (acknowledgement of their newly achieved status as nuclear weapons states; partial observation of the NPT and CTBT terms and obligation; and continued linkage of disarmament and nonproliferation issues as conditions for Indian accession to the two treaties) that is probably so high as to be unacceptable to the international nonproliferation community, especially regarding the precedent this may set for other recognized or covert nuclear threshold states.

While the event in South Asia seems to have caught everybody off guard and also magnetized most attention, developments elsewhere in Asia can hardly afford to be overlooked. Indeed, a number of issues, of both short- and medium- to long-term nature, deserve careful attention; potential for proliferation abounds.¹⁵ One should recognize that in Northeast Asia, besides the three declared nuclear powers, the US, Russia, and China, almost all the rest can be regarded as "virtual" nuclear states. In other words, Japan, South Korea, and Taiwan are understood to have the technological capabilities to produce nuclear weapons in a relatively short period of time.¹⁶ North Korea's suspected recent activities on the nuclear front (underground construction site 25 miles northeast of Yongbyon) and its threat to renege on the 1994 Agreed Framework highlight the need to not only continue to exercise caution but also implement the terms of the accord. Indeed, one of the DPRK's complaints has been that the US, and the other partners of the Korean Peninsular Energy Development Organization (KEDO) have not been able to fulfil their part of the bargain (i.e., the supply of heavy fuel oil, the construction of light-water reactors on schedule), therefore providing Pyongyang with the pretext to re-visit the nuclear issue.

Missile proliferation in the region has continued unabated.¹⁷ Over the last few months, India, Pakistan, and North Korea have all tested ballistic missiles of various ranges and payloads.¹⁸ These include Pakistan's *Ghauri* and North Korea's *Taepo Dong*. There are at least three concerns over the

¹¹ Author's discussion with Chinese arms control specialists, 25 August 1998, Beijing.

¹² Raj Chengappa and Manoj Joshi, "Hawkish India," *India Today*, 1 June 1998, pp.10-15; Manoj Joshi, "George in the China Shop," *ibid.*, 18 May 1998, pp.10-11; Joshi, "Beware the Dragon," *ibid.*, 27 April 1998, pp.22-24.

¹³ Rosemary Foot, "Chinese-Indian relations and the process of building confidence: implications for the Asia-Pacific," *The Pacific Review* 9:1 (1996), pp.58-76; Damon Bristow, "Mutual mistrust still hampering Sino-Indian rapprochement," *Jane's Intelligence Review* (August 1997), pp.368-71; J. Mohan Malik, "China-India Relations in the Post-Soviet Era: The Continuing Rivalry," *The China Quarterly* 142 (June 1995), pp.317-53. Fareed Zakaria, "Facing Up to Nuclear Reality," *Newsweek*, 8 June 1998, p.28.

¹⁴ Richard T. Cupitt, "Nonproliferation in the Asia-Pacific: No Time for Complacency," *The Monitor: Nonproliferation, Demilitarization and Arms Control* 3:1 (Winter 1997), pp.15-16.

¹⁵ Andrew Mack, *Proliferation in Northeast Asia*. Occasional Paper No.28 (Washington, DC: The Stimson Center, July 1996), p.2.

¹⁶ David G. Wiencek, *Dangerous Arsenals: Missile Threats In and From Asia*. Bailrigg Memorandum 22 (Lancaster: The Centre for Defence and International Security Studies, 1997).

¹⁷ Harinder Baweja with Zahid Hussain, "Ghauri: Fire in the Sky," *India Today*, 20 April 1998, pp.34-35.

region's missile developments. One is the destabilizing nature of a missile race that can complicate regional rivalries. India's decision to go nuclear reportedly was partially influenced by Pakistan's testing of the 1,500-km *Ghauri* missile, which in effect has put most major Indian cities with its striking reach. Other examples include both the 1995-96 Chinese missile tests around the Taiwan Strait and the recent North Korean missile launch that flew over the northern tip of the Japanese territories.¹⁹ The second issue is the potential for missile proliferation to other regions, in particular the highly contentious Gulf region and the Middle East. China and North Korea have been charged with willingly supplying missiles, missile components, and relevant technologies to Third World customers. While China has pledged to abide by the Missile Technology Control Regime (MTCR) since 1992, and indeed Beijing's records in this regard have improved noticeably in recent years, there remain allegations that Chinese missile components and technology continue to be transferred to countries such as Pakistan and Iran. One report alleges that the recently tested Pakistani missile, the *Ghauri*, is actually the Chinese M-9 prototype.²⁰ At the same time, North Korea also serves as a source of missile proliferation and is reported to have played a prominent role in Pakistan's missile development.²¹ And finally, as most missile proliferant states are also suspected, and proven, active seekers of nuclear weapons and other weapons of mass destruction, this not only can lead to greater uncertainty and pose serious threats to regional security, but also has implications that go beyond the region. The newly developed long-range missiles armed with nuclear warheads and capable of reaching other regions can serve as instruments of political and strategic blackmail.

Table 1. Ballistic Missiles in Selected Asian Countries/Areas

Countries/ Areas	Type	Range (km)/ Payload (kg)	Status
AFGHANISTAN			
SS-1 Scud B	SRBM	300/985	In Service
CHINA			
DF-11 (M-11)(CSS-7)	SRBM	300/800	In Service
DF-15 (M-9)(CSS-6)	SRBM	600/950	In Service
DF-25	MRBM	1,700/2,000	Terminated?
DF-21/21A (CSS-5)	MRBM	1,800/600	In Service
DF-3/DF-3A (CSS-2)	IRBM	2,800/2,150	In Service
DF-4 (CSS-3)	IRBM	4,750/2,200	In Service
CSS-N-3 (JL-1)	SLBM	1,700/600	In Service
JL-2	SLBM	8,000/700	Development
DF-31	ICBM	8,000/700	Tested
DF-41	ICBM	12,000/800	Development
DF-5/5A (CSS-4)	ICBM	13,000/3,200	In Service
INDIA			
Prithvi 1 (SS-150)	SRBM	150/1,000	In Service

¹⁹ David A. Fulghum and Michael Mecham, "Chinese Tests Stun Neighbors," *Aviation Week & Space Technology*, 31 July 1995, p.23; Nayan Chanda, "Collateral Damage," *Far Eastern Economic Review*, 28 March 1996, pp.16-17; Todd Crowell, "Target Taiwan," *Asiaweek*, 22 March 1998, pp.24-27; "US-North Korea Framework Agreement Complicated by Suspected Missile Test," *Disarmament Diplomacy* 29 (September 1998) (<http://www.gn.apc.org/acronym/29korea.html>).

²⁰ Manoj Joshi, "Deadly Option," *India Today*, 4 May 1998, pp.38-40.

²¹ Joseph Bermudez, "A silent partner," *JDW*, 20 May 1998, pp.16-17.

Prithvi 2 (SS-250)	SRBM	250/500	In Service
Prithvi 3 (SS-350)	SRBM	350/500	Development
Agni	IRBM	2,500/1,000	Prototype
Sagarika	SLBM	300+/nk	Development
Surya	ICBM	12,000/nk	Development

NORTH KOREA

Scud Mod B	SRBM	300/985	In Service
Scud Mod C	SRBM	550/500	In Service
No-Dong 1	MRBM	1,000/1,000	Tested
No-Dong 2	MRBM	1,500+/1,000	Development
Taepo Dong 1	MRBM	2,000/1,000	Tested?
Taepo Dong 2	ICBM	6,000/1,000	Development

PAKISTAN

Hatf 1	BSRBM	100/500	In Service
Hatf 2	SRBM	300/500	Development
Hatf 3	SRBM	600/500	Development?
Hatf 4 (Ghauri)	IRBM	1,500/700	Tested
M-11	SRBM	300/800	In Service

SOUTH KOREA

NHK 1/2	SRBM	180/300	In Service
NHK-A (Hyonmu)	SRBM	260/nk	Development

TAIWAN

Green Bee (Ching Feng)	BSRBM	130/400	In Service
Sky Halberd (Tien Chi)	SRBM	300/nk	Development
Sky Horse (Tien Ma)	MRBM	950/500	Development

VIETNAM

SS-1 Scud B	SRBM	300/985	In Service
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Source: Modified from David G. Wiencek, *Dangerous Arsenals: Missile Threats In and From Asia*. Bailrigg Memorandum 22 (Lancaster: The Centre for Defence and International Security Studies, 1997), p.14.

Conventional arms transfers to the region are also of serious concern. Indeed, ever since the end of the Cold War, the Asia-Pacific region has become one of the two most dynamic areas (the other being the Middle East) that are actually increasing arms acquisitions even as major military powers such as the United States and Russia are cutting back on military procurement as their defence budgets fall.²² Table 2 provides data on selected recent weapons acquisitions in the region. While experts can debate whether the accumulation of advanced conventional weapons represents a harbinger to an arms race,²³ the rush for

²² Barbara Opall, "Asia Pacific May Top World's Weapon Bazaars," *Defence News*, 11-17 September 1995, pp.22, 24; Michael T. Klare, "The Next Great Arms Race," *Foreign Affairs* 72:3 (Summer 1993), pp.136-152; see also the January/February 1997 issue of *The Bulletin of the Atomic Sciences* for recent developments.

²³ See, for example, Jason Glashow and Robert Holzer, "Experts Downplay Talk of Arms Race in Asia," *Defence News*, 11-17 September 1995, pp.10, 24; Michael D. Wallace and Charles A. Meconis, *New Powers*,

arms should concern us here. China has in recent years acquired advanced Russian weapons such as Su-27s, Kilo submarines, Sovremenny-class destroyers, and S-300 surface-to-air missiles;²⁴ Taiwan has purchased 60 Mirage-2000s from France and 150 F-16s from the United States, and has taken delivery of leased French and US frigates;²⁵ and ASEAN countries have also made major purchases in fighter aircraft and naval systems, including F-18s and MiG-29s, to enhance their abilities for aerial and maritime controls and this upward trend has only been tempered by the recent economic crisis.²⁶ The region's arms buildups are as much a result of supply-push as they are of demand-pull. Indeed, major weapons producers in developed countries and Russia are fiercely competing for the Asian market, with serious security implications.²⁷ When one takes into consideration the facts that there remain unresolved territorial disputes, prominently but not exclusively over the Spratly Islands in the South China Sea, and other flash points, and that the acquisitions of weaponry fall mainly in the area of force multiplier and force projection capabilities in major air fleet and sea platforms, these developments, if not properly managed, can have long-term destabilizing effects on regional security.

Table 2. Selected Recent Arms Acquisitions in East and Southeast Asia

CHINA

72 Su-27 Flanker strike fighters, with license to produce
 10 Ilyushin Il-76 transport planes
 4 Kilo submarines, with two already delivered
 2 Sovremenny-class destroyers (ordered)
 4 batteries of SA-10 Grumble (S-300) surface-to-air missiles
 440 T-72M tanks

Old Patterns: Dangers of the Naval Buildup in the Asia Pacific Region. Working Paper No.9 (Vancouver, BC: Institute of International Relations, The University of British Columbia, March 1995).

²⁴ Stephen J. Blank, "Russo-Chinese Military Relations and Asian Security," *Issues & Studies* 33:11 (November 1997), pp.58-94.

²⁵ Richard A. Bitzinger and Bates Gill, *Gearing Up for High-Tech Warfare? Chinese and Taiwanese Defence Modernization and Implications for Military Confrontation Across the Taiwan Strait.* CAPS Papers No.11 (Taipei: Chinese Council of Advanced Policy Studies, September 1996), pp.27-47; "Taiwan takes delivery of first Mirage 2000-5s," *Jane's Defence Weekly*, 14 May 1997, p.15; "Taiwan's navy receives final La Fayette frigate," *JDW*, 4 February 1998, p.16.

²⁶ Shannon Selin, *Asia Pacific Arms Buildups Part One: Scope, Causes and Problems* and *Part Two: Prospects for Control*, Working Paper No.6 & No.7 (Vancouver, BC: Institute of International Relations, The University of British Columbia, November 1994); Andrew Mack, "Asia-Pacific," in Andrew J. Pierre, ed., *Cascade of Arms: Managing Conventional Weapons Proliferation* (Washington, DC: The Brookings Institution Press, 1997), pp.285-304; Julian Schofield, "War and Punishment: The Implication of Arms Purchases in Maritime Southeast Asia," *The Journal of Strategic Studies* 21:2 (June 1998), pp.75-106; Steven Lee Myers, "Asian Turmoil Putting Brakes on Arms Race," *New York Times*, 13 January 1998, pp.A1, C5; Nate Thayer and Charles Bickers, "Market Misfire: Arms sellers hurt as Asia abandons pricey weapons," *Far Eastern Economic Review*, 5 February 1998, pp.22-23.

²⁷ Andrew Pierre and Sahr Conway-Lanz, "Desperate Measures: Arms Producers in a Buyers' Market," *Harvard International Review* XVII:1 (Winter 1994/95), pp.12-15, 70-72; Andrew J. Pierre and Dmitri V. Trenin, eds., *Russia in the World of Arms Trade* (Washington, DC: Carnegie Endowment for International Peace, 1997); Stephen Blank, "Playing with fire: Russian sales in Asia," *Jane's Intelligence Review* (April 1997), pp.174-77; William D. Hartung, "U.S. Conventional Arms Transfers: Promoting Stability or Fueling Conflict?" *Arms Control Today* (November 1995), pp.9-13.

TAIWAN

150 F-16s
60 Mirage-2000s
6 *La Fayette* frigates
6 Raytheon Patriot PAC-2 surface-to-air missile launchers

MALAYSIA

18 MiG-29 aircraft
8 F/A-18C/D aircraft
28 Hawk fighters

INDONESIA

40 Hawk aircraft
12 Su-30k aircraft

SINGAPORE

30 F-16s
6 CH-47 helicopters
4 *Sjobjornen* submarines

PHILIPPINES

3 F-4A aircraft
8 C-130B transports

THAILAND

12 F-16A/B aircraft
2 *Knox* frigates
8 F/A-19C/D aircraft with Harpoon

VIETNAM

12 Su-27 aircraft
6 MiG-21B aircraft

Sources: International Institute for Strategic Studies, *The Military Balance 1997/98* (London: Oxford University Press, 1997), pp.170-172; Richard A. Bitzinger and Bates Gill, *Gearing Up for High-Tech Warfare? Chinese and Taiwanese Defence Modernization and Implications for Military Confrontation Across the Taiwan Strait*. CAPS Papers No.11 (Taipei: Chinese Council of Advanced Policy Studies, September 1996).

Although not an immediate issue, Japan's plutonium policy remains a long-term proliferation concern.²⁸ Not only is it puzzling that Tokyo should continue a nuclear energy policy in the direction averted by most nuclear-energy using powers for economic, environmental, and safety reasons, but the Japanese policy acts as a potential deterrent to other regional powers from fully undertaking nuclear disarmament/nonproliferation measures simply because they would like to have a hedge against any action that Japan may take in the future regarding its nuclear options.²⁹ This concern is not unfounded, given that Japan has both the technological capability and more than enough fissile materials to develop nuclear weapons at very short notice.³⁰ Up to now Japan's self-restraint in its nuclear policy has been attributed to US nuclear protection. However, extended deterrence has always been on shaky ground and

²⁸ Motoya Kitamura, "Japan's Plutonium Program: A Proliferation Threat," *The Nonproliferation Review* 3:2 (Winter 1996).

²⁹ Eiichi Katahara, "Japan's Plutonium Policy: Consequences for Nonproliferation," *The Nonproliferation Review* 5:1 (Fall 1997), pp.53-61.

³⁰ Mack, *Proliferation in Northeast Asia*, pp.11-19.

for that reason, no one can rule out Japan's nuclear options confidently. Greater transparency, as has been suggested, may enhance confidence but cannot predict Japan's future nuclear policy.³¹

III. Causes of Proliferation: The Continuing Conundrum

Analysts have debated over the years on the causes of proliferation.³² While most discussions focus on (or try to find out) the reasons why countries seek to acquire both WMDs and conventional weapons, to fully appreciate all relevant aspects of weapons proliferation one must also consider supply-side factors such as commercial interests, foreign policy considerations, and politico-strategic imperatives. As will be made clear in succeeding sections, the difficulties in achieving nonproliferation results lie largely in the facts that while the nonproliferation regimes have normally set up to deal with various issues from either a control or deterrence perspective, the motivations for proliferation tend to be much more diversified, therefore making effective policies and policy coordination most elusive and difficult to achieve.

Realism probably offers the most straightforward and parsimonious explanations on why states seek to acquire nuclear and other weapons of mass destruction.³³ In an anarchical international system, states must ultimately rely on themselves for their defence. Alliances are possible and indeed sometimes indispensable in providing safety and security through pooling and sharing resources, but in the nuclear era, no commitments are guaranteed. The only guarantees are the defence capabilities that states acquire, maintain, and improve upon. Especially precarious is extended nuclear deterrence, and this has provided the impetus for Britain, France and China to develop and deploy nuclear weapons of their own.³⁴

If security is the ultimate driving force for weapons acquisitions, including WMDs, then perceived and real developments negatively affecting one's security situation would obviously prompt specific responses. Given that conventional weapons are expensive, the acquisitions of WMDs then become a short-cut to restoring and maintaining a proper balance. India's nuclear testing has been attributed to New Delhi's increasing unease of not only losing the competition with China but also having to live between one declared nuclear power and a covert one, namely Pakistan: both of these powers have fought wars with India and have long-standing, unresolved issues of territories and borders. Meanwhile, New Delhi increasingly finds itself in an impossible position with the conclusion of various international nonproliferation treaties that further deprive it of options.³⁵ The only way that India can achieve both a psychological and military balance in the sub-continent is through the acquisition of nuclear weapons and the development and deployment of missiles. The same rationale would also apply in Pakistan's case.³⁶

³¹ Charles W. Nakhleh, "Addressing the Implications of the Japanese Fuel Cycle Through Transparency," *The Nonproliferation Review* 4:3 (Spring-Summer 1997), pp.83-91.

³² Zachary S. Davis and Benjamin Frankel, eds., *The Proliferation Puzzle: Why Nuclear Weapons Spread and What Results* (London: Frank Cass, 1993); Tanya Ogilvie-White, "Is There a Theory of Nuclear Proliferation? An Analysis of the Contemporary Debate," *The Nonproliferation Review* 4:1 (Fall 1996), pp.43-60.

³³ Bradley A. Thayer, "The Causes of Nuclear Proliferation and the Utility of the Nuclear Nonproliferation Regime," *Security Studies* 4:3 (Spring 1995), pp.463-519.

³⁴ Avery Goldstein, "Robust Affordable Security: Some Lessons from the Second-Ranking Powers During the Cold War," *Journal of Strategic Studies* 15:4 (December 1992), pp.476-519; Goldstein, "Understanding Nuclear Proliferation: Theoretical Explanation and China's National Experience," *Security Studies* 2:3/4 (Spring/Summer 1993), pp.213-255.

³⁵ William Walker, "India's Nuclear Labyrinth," *The Nonproliferation Review* 4:1 (Fall 1996), pp.61-77.

³⁶ J. Mohan Malik, "India Goes Nuclear: Rationale, Benefits, Costs and Implications," *Contemporary Southeast Asia* 20:2 (August 1998), pp.191-215.

Proliferation is also attributable to bureaucratic push where certain government agencies and the military-industrial complexes acquire institutional interests in promoting the development of weapons.³⁷ Presumably, these would also be the same people and sectors most resistant to disarmament and nonproliferation proposals. However, one can also credit bureaucratic interests with playing a key role in forsaking nuclear weapons programs as government officials and industry representatives recognize and seek the rewards of embarking on the nonproliferation and de-nuclearization paths. But this is possible, as suggested by analyses, only if and when economic liberalization and democratization go hand-in-hand in creating and sustaining domestic coalitions opposed to nuclearization.³⁸ Prominent among the examples are Brazil, Argentina, South Africa, Belarus, Kazakhstan, and Ukraine. However, one must recognize that improved security environments, as much as economic incentives, act as a crucial factor in their decisions to forsake nuclear weapons. One cannot assume that the same situation has obtained in South Asia's case. If anything, the reverse may be true.³⁹ Another factor involves prestige and pride, which can also contribute to nuclear weapons proliferation as the ability to develop and detonate nuclear devices is regarded the *sine qua non* of modern, advanced statehood.⁴⁰

On the supply side, there are a number of factors that account for weapons proliferation.⁴¹ These include commercial interests, foreign policy considerations, and strategic imperatives. The drive for commercial gain, or at least avoiding sustaining loss and maintaining viable defence industrial bases, may be a crucial factor. This has increasingly become the case in the post-Cold War era when defence industries face reduced domestic orders and a shrinking international market. The difficulty in stemming conventional arms sales to the Middle East and the Asia-Pacific is a clear demonstration of how the concern over the survival of domestic defence industrial bases has dictated arms sale policy over the objections of arms control and nonproliferation advocates. Weapons transfers have long served foreign policy objectives in that supplier states seek to exert influence over recipient states and/or promote favorable developments. And of course, supporting and enhancing the defence capabilities of one's ally/allies has also been a long-held practice.

This brief discussion of the various factors/explanations serves to underline the fact that the existing nonproliferation regimes cannot be expected to be effective if they fail to address these underlying factors, be they security, domestic political, or commercial. By the same token, a country's national export control policy must of necessity contend with its various other foreign policy objectives, interests, and options. Indeed, one can argue that any effective nonproliferation policy must be based on a delicate balancing of the diverse and sometimes competing interests and objectives and on the ability to coordinate such a policy at both the domestic and international levels, an exceedingly difficult task that continues to frustrate governments and business alike. At the same time, given the divergent sources of proliferation, making existing nonproliferation regimes work may require a better understanding of the motivations for acquisition and/or sale, and the coordination between global, multilateral, and national policies, mechanisms, and resources.

³⁷ Scott Sagan, "Who Do States Build Nuclear Weapons? Three Models in Search of a Bomb," *International Security* 21:3 (Winter 1996/97), pp.54-86.

³⁸ Etel Solingen, "The Political Economy of Nuclear Restraint," *International Security* 19:2 (Fall 1994), pp.126-69.

³⁹ Neil Joeck, "Nuclear Proliferation and Nuclear Reversal in South Asia," *Comparative Strategy* 16:3 (July-September 1994), pp.263-73.

⁴⁰ Sagan, "Why Do States Build Nuclear Weapons?"; Russell Watson, "Explosion of Self-Esteem," *Newsweek*, 25 May 1998, pp.32B-33; Fareed Zakaria, "How to Be a Great Power, Cheap," *ibid.*, 25 May 1998, p.34.

⁴¹ The classic work remains Andrew J. Pierre, *The Global Politics of Arms Sales* (Princeton, NJ: Princeton University Press, 1982).

IV. Nonproliferation Regimes and the New Challenges

The existing nonproliferation regimes refer to both international treaties and multilateral arrangements. They in turn are supplemented by ad hoc bilateral agreements and ultimately enforced through national export control systems. At the global level, the NPT, CTBT, CWC, and various other international treaties constitute the core of nonproliferation regimes.⁴² They operate on the principles of universal membership and non-discrimination.⁴³ Added to these are a number of nuclear weapons free zones (NWFZs) that serve to prevent or even reverse nuclear proliferation.⁴⁴ Implementing agencies such as the International Atomic Energy Agency (IAEA) and the Organization for the Prohibition of Chemical Weapons (OPCW) oversee and verify the implementation of international nonproliferation treaties. With few exceptions, most countries are signatory states to these treaties. Table 3 provides a summary of Asian membership in key international nonproliferation treaties.

Table 3. Asian Participation in Major International Nonproliferation Treaties

Country	NPT	CWC	CTBT	CCW	BTWC
Australia	♦	♦	♦	♦	♦
Brunei	♦	♦	♦		♦
Cambodia	♦	♦	♦		♦
China	♦	♦	♦	♦	♦
India		♦		♦	♦
Indonesia	♦	♦	♦		♦
Japan	♦	♦	♦	♦	♦
Korea (North)	♦				♦
Korea (South)	♦	♦	♦		♦
Laos	♦	♦		♦	♦
Malaysia	♦	♦			♦
New Zealand	♦	♦	♦	♦	♦
Pakistan				♦	♦
Philippines	♦	♦	♦	♦	♦
Russia	♦	♦	♦	♦	♦
Singapore	♦	♦			♦
Thailand	♦	♦	♦		♦
Vietnam	♦	♦	♦		♦

Sources: Center for Nonproliferation Studies, Monterey Institute of International Studies, *Inventory of International Nonproliferation Organizations and Regimes*, 1996-1997 Edition (Monterey, CA: CNS/MIIS, May 1997); *SIPRI Yearbook 1997: Armaments, Disarmament and International Security* (London: Oxford University Press, 1997).

⁴² A comprehensive and regularly updated useful reference can be found in *Inventory of International Nonproliferation Organizations and Regimes* (Monterey, CA.: Center for Nonproliferation, Monterey Institute of International Studies, 1997).

⁴³ Although some, like India, categorically reject such characterization, arguing that treaties such as the NPT and CTBT actually perpetuate discrimination between the five nuclear weapons states and the rest of the signatories. See Arundhati Ghose, "Negotiating the CTBT: India's Security Concerns and Nuclear Disarmament," *Journal of International Affairs* 51:1 (Summer 1997), pp.239-61; Jonathan Kap and Nigel Holloway, "Zero Yield," *Far Eastern Economic Review*, 29 August 1996, pp.14-15.

⁴⁴ Jozef Goldblat, "Nuclear-Weapon-Free Zones: A History and Assessment," *The Nonproliferation Review* 4:3 (Spring-Summer 1997), pp.18-32.

At the multilateral level, there are currently four supply-side nonproliferation export control regimes.⁴⁵ Based on limited (although increasing) membership, these regimes aim at controlling nuclear, chemical, and biological items, complete missile systems and related technologies lest they be used in the design and development of WMDs and their delivery systems. These are the Australian Group (AG), the Nuclear Suppliers Group (NSG), the Missile Technology Control Regime (MTCR), and the Wassenaar Arrangement (WA). Being relatively exclusive in their membership composition, and in particular the fact that most member states to these regimes are industrialized countries, there have been strong criticisms that they are discriminatory and obstacles to technology transfers to developing states. As can be seen from Table 4, Asian membership in these four multilateral supply-control regimes is quite limited. The data are not merely statistical; they reveal the suspicions with which these regimes are perceived in most non-industrialized Asian countries.

Table 4. Asian Participation in Multilateral Nonproliferation Regimes

	Zangger	AG	MTCR	NSG	WASS
Australia	♦	♦	♦	♦	♦
Brunei					
Cambodia					
China	♦				
India					
Indonesia					
Japan	♦	♦	♦	♦	♦
North Korea					
South Korea	♦	♦		♦	♦
Laos					
Malaysia					
New Zealand		♦	♦	♦	♦
Pakistan					
Philippines					
Russia	♦		♦	♦	♦
Singapore					
Thailand					
Vietnam					

Sources: Center for Nonproliferation Studies, Monterey Institute of International Studies, *Inventory of International Nonproliferation Organizations and Regimes*, 996-1997 Edition (Monterey, CA: CNS/MIIS, May 1997); Ian Anthony, Susanna Eckstein and Jean Pascal Zanders, "Multilateral military-related export control measures," in *SIPRI Yearbook 1997: Armaments, Disarmament and International Security* (London: Oxford University Press, 1997), p.346.

Finally, there are a number of ad hoc arrangements in the region. The most noticeable are the 1992 agreement between the two Koreas on peninsular non-nuclearization; the 1994 Agreed Framework between the US and the DPRK; the October 1994 Sino-US Communiqué on MTCR; and the US-Japan Nonproliferation Initiatives. Most regional states, including the US, Japan, Canada, China, and South

⁴⁵ Gary K. Bertsch, Richard T. Cupitt, and Steven Elliott-Gower, "Multilateral Export Control Organizations," in Bertsch, Cupitt, and Elliott-Gower, eds., *International Cooperation on Nonproliferation Export Controls: Prospects for the 1990s and Beyond* (Ann Arbor, MI: The University of Michigan Press, 1994), pp.33-55.

Korea have national export control systems of various standing in terms of licensing and enforcement mechanisms.

While it is fair to say that the existing nonproliferation regimes have provided the necessary framework for stemming the spread of WMDs and missiles, in particular in identifying the issues of common concern, coordinating national policies, delaying certain proliferation projects, making illicit acquisitions more expensive, and buying time for more appropriate strategies to be formulated, effective nonproliferation faces serious challenges today, making success sporadic and sometimes elusive. These are the increasing number of producer/supplier states which remain outside of the multilateral control regimes and which do not subscribe to the nonproliferation norms largely for commercial reasons; globalization and technological changes in that dual-use technologies increasingly originate from the commercial sectors and are widely available, therefore making the scope of control lists difficult to determine; and the inadequacy of institutional responses at a time of reduced security threats (traditionally defined) and of increasing pressure for trade liberalization.

The Growing Number

One of the phenomenal developments over the past two decades is the increasing number of countries that have acquired the indigenous capabilities to develop weapons of mass destruction and missile delivery systems. This is particularly the case with missile proliferation; at least over a dozen non-Western countries either already possess short- and intermediate-range missile systems or have the capabilities to develop them. Most of them are not MTRC members and some are active suppliers such as North Korea. Likewise, an increasing number of countries can be regarded as actual or potential producers of nuclear, chemical, and biological items and possibly suppliers.⁴⁶ This renders the denial strategy of the multilateral export control regimes less effective in stemming the proliferation of WMDs and missile delivery systems as many of the emerging supplier states do not subscribe to the nonproliferation norms due to commercial and political reasons. Arms sales can generate income, especially hard currency, and recoup research and development expenditure, hence making future investment possible. For some countries, defence industries are considered cash cows and there is every incentive to market arsenals abroad: Brazil is a typical case. Political gains can also be made through arms transfers; a notable instance is Saudi Arabia's shifting diplomatic recognition to the PRC after receipt of the CSS-3 intermediate missiles worth over \$2 billion.

Technological Changes and Diffusion

A second major challenge is the changing nature of technology and its diffusion due to globalization and the strategies adopted by companies in an increasingly competitive business environment. In the early postwar years, commercialization of technologies usually came about as a result of technology spin-off through military R&D; today the reverse is increasingly becoming the case. Cutting-edge technologies are often first developed for civilian use but have potential military applications. This makes it more difficult to define what constitutes strategic technologies (and what not), and to determine who should be placed on a list of controlled destinations; the differences arising from this therefore complicate the task of controls.⁴⁷ In addition, one should also take note of the recent trends

⁴⁶ Jean-François Rioux, ed., *Limiting the Proliferation of Weapons: The Role of Supply-Side Strategies* (Ottawa: Carleton University Press, 1992).

⁴⁷ Jay Stowsky, "From Spin-Off to Spin-On: Redefining the Military's Role in American Technology Development," in Wayne Sandholtz et al., *The Highest Stakes: The Economic Foundation of the Next Security System* (New York, NY: Oxford University Press, 1992), pp.114-140; Andrew L. Ross, "The Dynamics of Military Technology," in David Dewitt, David Haglund, and John Korton, eds., *Building a New Global Order: Emerging Trends in International Security* (Toronto: Oxford University Press, 1993), pp.106-140.

in the arms trade toward the transfer of technologies and components supplementing sales of complete weapons systems, increasing off-set arrangements, and the strategy of global sourcing and production.⁴⁸ This furthers the speed and scope of technology diffusion and has compounded the problems of nonproliferation controls by making monitoring more difficult. The implication of this revolutionary change is enormous in that control becomes highly difficult if not totally impossible. As technology develops apace, it is hard to keep up with what to control, let alone to determine what has military applications and for which destinations.⁴⁹

Globalization means that today's multinational companies (MNCs), including major defence contractors, increasingly play down the importance of national boundaries and seek instead to execute the production/sales process in a global context, setting up shops wherever capital, labour, and market destinations make the most economic sense.⁵⁰ As a result, production and process technologies will go where MNCs have their subsidiaries, most of them probably outside the boundaries of countries home to their headquarters. Close economic interdependence and industrial cooperation at once make dual-use technology transfers inevitable and nonproliferation controls more difficult, as has been demonstrated in the case of recent South Korean efforts in upgrading its high-tech industries and the possible contribution of imports from Japan.⁵¹ At the same time, fierce competition obliges many companies to adopt off-set practices and technology transfers as appealing offers to prospective partners in order to close deals, and in the process may inadvertently divert important dual-use technologies to suspected end-users bent on developing WMDs. In certain cases, to gain business advantage over potential competitors, companies may simply disregard the implications of their technology transfers and indeed may cheat for the purpose of getting export licenses. For instance, in the late 1980s, a number of West German companies were found guilty of involvement in illegal exports of nuclear, chemical, and rocket items and relevant technologies to certain Middle Eastern countries, including Libya.⁵² More recently, the US satellite company Lorall has been charged with passing important information to the Chinese, information which can be used to improve missile designs.

The Inadequacy of Institutional Responses

Recent years have seen the expansion of membership in multilateral nonproliferation regimes. However, as these arrangements are not binding international legal treaties and as national governments of member states retain the final decision power regarding export control issues, their abilities to coordinate national policies are inherently weak.⁵³ The Wassenaar Arrangement, the successor regime to the now defunct Coordinating Committee on Multilateral Export Controls (COCOM), for example, does not have a consensus rule where objections of any member state constitute a veto, as COCOM did. In addition to the institutional weakness is the fact that many emerging non-Western supplier states are not

⁴⁸ Joanna Spear, "Beyond the Cold War: Changes in the International Arms Trade," *Harvard International Review* XVIII:1 (Winter 1994/95), pp.8-11, 70; Richard A. Bitzinger, "Going Global: The Quiet Revolution in Arms Production," *ibid.*, pp.20-23, 75; Susan Willett, "East Asia's Changing Defence Industry," *Survival* 39:3 (Autumn 1997), pp.107-34.

⁴⁹ Michael Moodie, "Beyond Proliferation: The Challenge of Technology Diffusion—A Research Survey," in Brad Roberts, ed., *Weapons Proliferation in the 1990s* (Cambridge, MA.: The MIT Press, 1995), pp.71-90.

⁵⁰ Denis Fred Simon, "Techno-Security in an Age of Globalization," in Simon, ed., *Techno-Security in an Age of Globalization: Perspectives from the Pacific Rim* (Armonk, NY and London: M.E. Sharpe, 1997), pp.3-21.

⁵¹ Reinhard Driete, "Proliferation in Northeast Asia: South Korea's Dual-Use Technology Imports from Japan," *The Nonproliferation Review* 4:3 (Spring-Summer 1997), pp.72-82.

⁵² Stephen Engelberg, "German Atomic Sale Challenged," *The New York Times*, 1 February 1989, p.A2; William Tuohy, "German Firm Reportedly Knew Libya Toxic Gas Plan," *Los Angeles Times*, 25 January 1989, p.A7.

⁵³ Ian Anthony, Susanna Eckstein and Jean Pascal Zanders, "Multilateral military-related export control measures," *SIPRI Yearbook 1997: Armaments, Disarmament and International Security* (Oxford: Oxford University Press, 1997), pp.345-63.

regime members. As Gary Bertsch and Richard Cupitt point out, “[p]atterns of membership in alliances and with international arrangements are good measures of the congruence of foreign policy interests among states.” In other words, supply-side control measures can be effective only to the extent that all major exporters share more or less similar foreign policy preferences in specific issue-areas. Where key suppliers remain outside the export-control arrangements, non-proliferation efforts are more likely to be diluted in achieving their stated objectives. Obviously, for export control strategies to be successful, efforts must seek and be based on broader international participation. However, there is caution against expanding membership at the cost of lowering the standard of admission, especially when increased membership may threaten to undermine effective policy coordination among regime members.⁵⁴

Even if agreement can be made at the multilateral level, controls must ultimately be carried out at the national level. Here the perspectives and policies of major supplier states, the diversity and complexity of domestic politics and processes whereby national export control policies get formulated and implemented likely will have great impacts on the success of nonproliferation endeavors. In addition, the export control system of each country can also determine the extent to which licenses are reviewed and approved/denied with the objectives of both promoting peaceful trade and technology transfers and preventing the danger of proliferation. During the Cold War years, the concerns over security and alliance cohesion overrode considerations for expanded trade between East and West. Even though national export control systems varied among Western countries, a sort of consistence was achieved through COCOM’s principle of unanimity and sometimes if not always effective US leadership in the alliance.⁵⁵ The end of the Cold War and the shifting focus from the “high politics” of security to economic wellbeing and business competitiveness have exerted strong pressures demanding reform and liberalization of trade and technology transfers, resulting in reduced attention to, and effectiveness of, national export control systems.

The first of these pressures is the changing security environment and the impact on export control systems. Increasingly, the creation and maintenance of jobs become the overriding concerns of policymakers to the detriment of export controls. This is particularly the case for those supplier states more dependent on international trade and whose trade ministries play a major role in implementing as well as establishing export control policies.⁵⁶ At the same time, lax enforcement of national export control regulations due to institutional interests also leads to illicit transfers of sensitive technologies to proscribed end-users. The Toshiba-Kongsberg case (where high-technology milling machines and software were sold to the former Soviet Union in the late 1980s) is probably the best known for its violation of export control regulations.⁵⁷ More recently, the Clinton administration has introduced export control liberalization in the high performance computer sector to enable US companies to be more competitive in international market place. In addition, the decision was made to transfer licensing jurisdiction over satellites and computers exports from the U.S. State Department to Commerce, which has allegedly resulted in important dual-use technology going to Russia and China for potential military applications.⁵⁸ Inter-agency rivalry and confusion over jurisdiction within the US export control system

⁵⁴ Richard T. Cupitt and Igor Khripunov, “New Strategies for the Nuclear Suppliers Group (NSG),” *Comparative Strategy* 16:3 (July-September 1997), pp.305-15.

⁵⁵ Gary K. Bertsch, ed., *Controlling East-West Trade and Technology Transfers: Power, Politics, and Policies* (Durham and London: Duke University Press, 1988); Michael Mastanduno, *Economic Containment: CoCom and the Politics of East-West Trade* (Ithaca and London: Cornell University Press, 1992).

⁵⁶ Beverly Crawford, “The Roots of European Self-Assertion in East-West Trade,” in Beverly Crawford and Peter W. Schulze, eds., *The New Europe Asserts Itself: A Changing Role in International Relations* (Berkeley, CA.: University of California Press, 1990), pp.251-83.

⁵⁷ William C. Triplett, II, “Crimes Against the Alliance: the Toshiba-Kongsberg Export Violations,” *Policy Review* (Spring 1988), pp.8-13.

⁵⁸ United States General Accounting Office, *Export Control: Issues Related to Commercial Communications Satellites*. GAO/T-NSIAD-98-208 (Washington, DC: GAO, June 1998); GAO, *Export Control: Some Controls Over Missile-Related Technology Exports to China Are Weak* (Washington, DC: GAO, April 1995); Eric Schmitt, “Curb on Technology for China Eased in ‘96, Auditor Says,” *New York Times*, 11 June 1998,

make effective enforcement difficult.⁵⁹ At the same time, the business community charges that the unnecessary delays in license reviews and approval because of complex processes cost them business opportunities and lost sales as competitors obtain advantage.⁶⁰

Transshipment, re-exports, and/or diversion of items and technology under control can pose another problem undermining the effectiveness of export control efforts. Resale or transfers, and diversion from stated original end-use and/or end-user(s), can result in either sensitive items and technologies falling into the hands of those countries who are unfriendly to the original exporter(s), or their diversion from civilian to military application. An alleged case is the highly publicized media reporting of Israel's transfer of US Patriot technology to China.⁶¹ Hong Kong can also present a difficulty for US export control enforcement with the return of the colony to the mainland.⁶² At the same time, the end-use/user(s) is hard to certify; for instance, the US has in recent years sold hundreds of supercomputers to China without being able to secure either pre-license check or post-shipment verification for a single one of them.⁶³ This being the case, it is not surprising to read reports on diversion of US technology to missile-related manufacturers enabling China to make better cruise missiles.⁶⁴ A 1995 case, for example, involved the diversion of US-made machine tools to a Chinese missile-making factory.⁶⁵ With the recent certification of the Clinton administration implementing the 1985 US-China agreement on nuclear cooperation, a flood gate may be opened for American companies to sell nuclear reactors and technologies to China. The need to balance between commercial interests and security concerns can be expected to further strain the US export control system.⁶⁶

Finally, even with the best intentions, countries may not be equal in their abilities to enforce export control regulations due to differences in domestic systems. Indeed, sometimes the gap between declared policy and actual implementation may be less a deliberate act of cheating than the inability to carry out enforcement measures. In Northeast Asia, Japan, South Korea, Hong Kong, and Taiwan can be said to have developed relatively reliable export control systems over the years, with Tokyo's dating back to the late 1940s.⁶⁷ Others, such as China, have only recently embarked upon building national export control systems, with predictable problems in the jurisdictional division of oversight and law enforcement. For instance, China in recent years has legislated a number of export control regulations

p.A8; Robert Johnston, "U.S. Export Control Policy in the High Performance Computer Sector," *The Nonproliferation Review* 5:2 (Winter 1998), pp.44-59.

⁵⁹ Iain K. McDaniels, "A Tangled Web," *The China Business Review* 25:2 (March-April 1998), pp.36-42.

⁶⁰ United States General Accounting Office, *U.S. Government Policy Issues Affecting U.S. Business Activities in China* (Washington, DC: GAO, May 1994).

⁶¹ Rowan Scarborough, "China May Have Patriot from Israel," *Washington Times*, 12 March 1992, p.A1; David Silverberg, "Alleged Israeli Tech Transfer Raises Dormant Concerns," *Defence News*, 23 March 1992, p.6.

⁶² United States General Accounting Office, *Hong Kong's Reversion to China: Effective Monitoring Critical to Assess U.S. Nonproliferation Risks* (Washington, DC: GAO, May 1997); Erik C. Wemple, "An Export Controls Clash," *China Business Review* 19 (May-June 1992), pp.30-35.

⁶³ Johnston, "U.S. Export Control Policy," p.54.

⁶⁴ Juliet Eilperin, "GOP Says U.S. Gave China Nuclear Edge," *Washington Post*, 6 May 1998, p.A4; Bill Gertz, "U.S. technological aid makes China more dangerous," *Washington Times*, 4 May 1998; David E. Sanger, "China to Return Computer It Had Diverted to Military," *New York Times*, 12 September 1997, p.A8.

⁶⁵ Jonathan S. Landay, "Is China Diverting High Technology to US Foes?" *The Christian Science Monitor*, 11 July 1997, pp.1, 8; Nigel Holloway, "Cruise Control," *Far Eastern Economic Review*, 14 August 1997, pp.14-16.

⁶⁶ Stephen J. Hedges, "China's surprising nuclear helpers," *U.S. News & World Report*, 29 September 1997, pp.30-31.

⁶⁷ Richard T. Cupitt, "Nonproliferation Export Controls in East Asia," *The Journal of East Asian Affairs* XI:2 (Summer/Fall 1997), pp.452-480.

covering nuclear, chemical, and dual-use technology transfers and exports.⁶⁸ However, compared with others, China's export control system remains deficient in terms of legal frameworks, licensing, and enforcement.⁶⁹ A case in point is the 1996 export of 5,000 ring magnets to Pakistan, apparently without the knowledge of the central government. Therefore, a lot need and can be done to help China improve its export control system.⁷⁰

V. Finding Remedies: Past Lessons and Future Strategies

The above discussion highlights a number of challenges to the nonproliferation regimes. These problems, which are not insurmountable, exist because of the lack of strong, effective leadership in both the global and multilateral nonproliferation endeavors. Leadership in such contexts refers to the ability to identify core issues, set agendas, canvass the maximum support necessary, and coordinate policies. In addition, leadership also requires consistency and a high standard of behavior. Leadership has become increasingly important in today's international settings where the multitude of actors, divergent interests and policy priorities, competing demands for finite resources, and growing reliance on expertise make consensus difficult to achieve and common goals elusive to obtain. In the past, leadership could be and indeed had been applied through the use of hard power of rewards and punishment, what is required today is more the exercise of soft power where ideas and persuasion may prove more cost-effective in dealing with the sources as well as the symptoms of problems. The Ottawa Process in concluding the international treaty banning anti-personnel landmines is a good example.⁷¹

The importance of political leadership in regime formation, maintenance and transformation has been dealt with amply elsewhere. There can be structural leadership, entrepreneurial leadership, and intellectual leadership. The first kind relies more on material resources and tries to translate structural power into bargaining chips. Entrepreneurial leadership requires better negotiation skills. Intellectual leadership provides ideas for actors to act on.⁷² The crucial element is not only the ability to dictate through the use of rewards and sanctions, as power has its limits and the exercise of power entails costs. But more important perhaps is the ability in "fashioning mutually acceptable deals bringing willing parties together" and the follow-on in making modifications within the regime framework as necessitated by new developments, and negotiating and resolving distributional conflicts acceptable to all concerned. Identifying and nurturing common interests therefore can make or break international policy coordination.⁷³

⁶⁸ Fu Cong, "An Introduction to China's Export Control System," pp.17-19, and Bates Gill, "U.S., China and Nonproliferation: Potential Steps Forward," pp.27-32, in *The Monitor: Nonproliferation, Demilitarization and Arms Control* 3/4:4/1 (Fall 997/Winter 1998).

⁶⁹ Richard T. Cupitt and Yuzo Murayama, *Export Controls in the People's Republic of China: Status Report - 1997* (Athens, GA: Center for International Trade and Security, 1997); Zachary Davis, "China's Nonproliferation and Export Control Policies: Boom or Bust for the NPT Regime?" *Asian Survey* XXXV:6 (June 1995), pp.595-600.

⁷⁰ Cupitt and Khripunov, "New Strategies," p.313.

⁷¹ Lloyd Axworthy and Sarah Taylor, "A ban for all seasons," *International Journal* LIII:2 (Spring 1998), pp.189-203. See also, Maxwell A. Cameron, Robert Lawson, and Brian Tomlin, eds., *To Walk Without Fear: The Global Movement to Ban Landmines* (Don Mills, ON: Oxford University Press Canada, 1998).

⁷² Peter M. Haas, "Introduction: Epistemic Communities and International Policy Coordination," *International Organization* 46:1 (Winter 1992), pp.1-35; Oran R. Young, "Political Leadership and Regime Formation: on the Development of Institutions in International Society," *International Organization* 45:3 (Summer 1991), pp.281-308.

⁷³ See Andrew Fenton Cooper, Richard A. Higgot, and Kim Richard Nossal, "Bound to Follow? Leadership and Followership in the Gulf Conflict," *Political Science Quarterly* 106 (Fall 1991), pp.391-410.

The lack of leadership in nonproliferation regimes has been obvious. Indeed, the past few years have been suggested as a period of setback in nuclear nonproliferation and disarmament.⁷⁴ In the global arena, lack of progress in nuclear disarmament among NWS has caused deep resentment from NNWS and likely will undermine the foundation of the NPT as a binding international legal document. First is the issue of legitimacy where NNWS charge that NWS have failed to fulfil their part of the bargain in nuclear disarmament. Nuclear disarmament in good faith, as is contained in the NPT and reiterated as a political grand bargain during the 1995 Review Conference that indefinitely extended the treaty, has yet to take place. The NPT, some fear, will only focus on nonproliferation issues but pay scant attention to its ultimate goal, that is, nuclear disarmament. Non-aligned movement (NAM) countries, for example, have become increasingly concerned that the NPT may permanently discriminate between the “haves” and “have-nots.” It is against this unfairness and bad faith that India has justified its refusal to sign the CTBT and its decision to go nuclear to break the nuclear monopoly of the five NWS.⁷⁵ The recent failure at the PreCom leading up to the 2000 NPT Review Conference to a great extent reflects this mood.⁷⁶

The CTBT is another issue. Its entry into force still hinges on the accession of India and Pakistan, and the DPRK, which probably will not sign the treaty without extorting a high price unlikely to be granted.⁷⁷ Nor is the prospect of Russian and US ratification any brighter.⁷⁸ The failure to link the CTBT to the broader and ultimately more important process of nuclear disarmament could undo what has been achieved.⁷⁹ At the same time, the recent US sub-critical nuclear test only reinforces India’s indignation that the treaty freezes other countries while it does not prevent the advanced NWS from conducting tests through sophisticated lab simulations. These developments may cast a shadow over the prospect of a successfully negotiated FMCT any time soon.

In addition, contrary to the expectation and indeed the requirements of the general principle reached at the time of NPT extension in 1995 for good faith negotiations on disarmament, there has continued to be vertical nuclear proliferation in the NWS where improvement on nuclear weapons is being made.⁸⁰ Russia has recently reversed its position on no-first-use and the US has reformulated its nuclear policy where nuclear retaliation has been emphasized.⁸¹ START II remains in limbo as the Russian Duma has yet to ratify it. The deadline for meeting the target has been moved from 2003 to 2007. And even if START III were to be begun, the proposed ceilings would still leave the two nuclear heavyweights with 2,500 warheads each, making any prospect of other NWS in the negotiations on nuclear disarmament at best a remote possibility.⁸²

Perhaps the most telling example of failed leadership is the aborted plan to impose restraints on arms transfers to the Middle East, a region of instability and potential conflicts of high intensity. In the wake of the Gulf War, US President George Bush unveiled a Middle Eastern arms control initiative.

⁷⁴ William Walker, “International nuclear relations after the Indian and Pakistani test explosions,” *International Affairs* 74:3 (July 1998), p.509.

⁷⁵ Walker, “International nuclear relations,” p.515.

⁷⁶ Tariq Rauf, “The April 1998 NPT PreCom,” *The Nonproliferation Review* (Winter 1998), pp.121-31.

⁷⁷ Rebecca Johnson, “The In-Comprehensive Test Ban,” *The Bulletin of the Atomic Scientists* 52:6 (November/December 1996), pp.30-35.

⁷⁸ Sandra Glass, “CTBT Update,” *Disarmament Diplomacy* 29 (September 1998) (<http://www.gn.apc.org/acronym/29ctbt.html>).

⁷⁹ William Epstein, “CTB: Next Steps,” *The Bulletin of the Atomic Scientists* (November/December 1996), pp.36-37.

⁸⁰ See, for example, Robert Norris and William Arkin, “British, French and Chinese Nuclear Forces,” *Bulletin of Atomic Scientists* 52:6 (November/December 1996), pp.64-67; Alastair Iain Johnston, “China’s New ‘Old Thinking’,” *International Security* 20:3 (Winter 1995/96), pp.5-42.

⁸¹ Charles J. Dick, “The Military Doctrine of the Russian Federation,” *Journal of Slavic Military Studies* VII:3 (September 1994), pp.481-506; Steven Lee Myers, “U.S. ‘Updates’ All-Out Atom War Guidelines,” *New York Times*, 8 December 1997, p.A3.

⁸² Stanfield Turner, “The Specter of Nuclear Proliferation,” *Security Dialogue* 29:3 (September 1998), pp.293-94.

Soon afterwards the five permanent members of the UN Security Council convened a number of meetings to discuss mechanisms for refraining from destabilizing arms sales to the region. At the same time when Washington was calling for restraints, US defence companies secured massive arms deals with Middle Eastern countries totaling over \$19 billion in signed contracts over a span of 17 months following Iraq's invasion of Kuwait.⁸³ US exports of conventional weapons rose to replace the former Soviet Union as the number one arms merchant in the world, a position it has managed to maintain ever since the end of the Gulf War. This has raised serious questions about Washington's sincerity and credibility in its efforts to persuade others to restrain their sales. The sale of 150 F-16s to Taiwan in 1992 for domestic political purposes sealed the fate of the Perm-5 talks, losing an opportunity for introducing nonproliferation mechanisms to the Middle East.⁸⁴

Given the multiple causes of weapons proliferation and divergent agendas and strategies of the various nonproliferation regimes, effective leadership is highly desirable not only in coordinating the priorities and policies and hence better use of limited resources, but also and indeed more important, in building bridges between existing regimes and non-member states of proven and potential capabilities as suppliers. In this regard, longer term strategies rather than ad hoc arrangements are called for in that the goals should aim at promoting the norms and principles of nonproliferation and addressing the issues of inconsistency and discrimination so that self-restraint can be more understandable and acceptable to non-member states. In addition, the overlapping, mutually reinforcing export control arrangements could benefit from the experiences of more institutionalized control mechanisms such as the International Atomic Energy Agency (IAEA) to condition legitimate requests for and acquisition of civilian technology and know-how on recipients' acceptance of safeguards and verification. Obviously, institutional reforms and institution building must be based on the understanding that the security environment has drastically changed in that the nature and sources of threat require new and innovative strategies. Holistic approaches and synergistic application may present better chances of success than the traditional either-or, reward-punishment tactics.

Holistic approaches require that the problems be analyzed in all respects and from different angles. The recent report of North Korean nuclear activities can serve as an example. While debates continue to rage on and indeed zero in on North Korea's alleged illicit activities in recent months, not to mention the continued and hardly constructive exchanges between those who regard the accord as a bad deal (and unfortunately the recent events seem to be vindicating their views) and those who argue that the accord has helped stabilize the situation, defused the crisis, and built a basis for further progress, hardly anyone has sought to put the whole issue in proper perspective. A more fruitful point of departure may be a better analysis of North Korea's situations and its options, rather than debating whether Pyongyang is observing or violating the Agreed Framework. There are a host of factors that need careful analysis.

Another example is the planned theatre missile defence (TMD). A major effort ostensibly as a response to missile proliferation, it may turn out to be more counter-productive than as an effective counter-proliferation measure. The question of effectiveness aside, there are additional issues of whether the TMD route is a better alternative to the arms control one, and the overall effect on US and allies security, especially given China's predictable responses.⁸⁵ There have yet to be common terms of discourse, let alone any consensus, within the defence and foreign policy communities of a number of regional actors, in particular the US and Japan but may also include Taiwan, over the merit of designing and deploying such systems. But the very idea of introducing such systems to the region has already invited strong warnings from countries such as China, who perceive proposed TMD deployment as not merely defensive (and even in that case Beijing would regard its limited nuclear deterrence capability

⁸³ James Adams, "The Perpetual Arms Machine," *Washington Post*, 15 March 1992, p.C1.

⁸⁴ "US Sales of F-16s to Taiwan and the Permanent Five Talks on Arms Control," *Renmin ribao*, overseas edition, 21 September 1992, p.6.

⁸⁵ James Clay Moltz, "Missile Proliferation in East Asia: Arms Control vs. TMD Responses," *The Nonproliferation Review* 4:3 (Spring-Summer 1997), pp.63-71.

compromised) but also offensive, posing serious threats to its security.⁸⁶ As discussions on the recent crisis in Cyprus and the debates concerning TMD in the South Asian region would suggest, the deployment of such systems could at best hardly prove effective and at worst lead to greater efforts in developing missiles aimed at overwhelming and penetrating the systems.⁸⁷

And there are broader political and nonproliferation issues to be considered. Indeed, one may suggest that in the wake of the issuance of new guidelines for US-Japanese security alliance, which itself has already generated great concern and stirred unease in countries such as China and South Korea, a follow up with the TMD would only further deepen mistrust, making cooperation in other security areas complicated. In the event that Taiwan were to deploy full-scaled missile defence with US Patriot missiles, the little progress made over the past 12 months in Sino-US relations could easily slip back to the post-Lee Tenghui nadir. In 1996, Clinton announced US willingness to provide Taiwan with TMD based on US Patriot antitactical ballistic missile system (ATBM).⁸⁸ Despite Chinese warnings and protests, apparently the deal went through, with Taiwan taking delivery of six Raytheon Patriot PAC-2 surface-to-air missile launchers, which will form part of Taiwanese TMD.⁸⁹ Nor can the implications for global nonproliferation endeavours such as the conclusion of an FMCT be ignored. If regional TMD threatens to neutralize Chinese missiles and nuclear deterrence capabilities and credibility, presumably, efforts will be made to overcome this situation. China may embark on a program to expand the number of warheads, which requires that it keep the options open with regard to the production and stockpiling of fissile materials; and additionally, China will have to deploy MIRVed missiles to overwhelm such systems. Either way, Beijing would be less inclined to join the treaty. In other words, the deployment of TMD could affect China's positions on arms control issues.⁹⁰ An arms control alternative may involve greater transparency in defence doctrines and armaments, an initiative toward negotiations on a possible missile test ban, and/or missile free zones.

Likewise, one can also suggest that a single strategy may not work well. What is required is a better synergy of various strategies and links between export controls, regional stability, and economic prosperity. In all of these endeavors, a better sense of making a strong case that transcends the trade vs. security debates, improves better business-government partnership, uses incentives rather than sanctions, and shows consistence in applying and enforcing standards can go a long way toward promoting the norms of nonproliferation.⁹¹ Past experience has suggested that the most effective instrument for fighting weapons proliferation may not be sanctions, threats of deprivation, or even military preemptive actions, all of which deal only with the symptoms rather than the sources of the problems. The US handling of the North Korean nuclear issue may be an example. It was through diplomacy and hard bargaining that the crisis was eventually defused.⁹²

⁸⁶ Benjamin Valentino, "Allies No More: Small Nuclear Powers and Opponents of Ballistic Missile Defence in the Post-Cold War Era," *Security Studies* 7:2 (Winter 1997/98), pp.229-32.

⁸⁷ Gregory Koblentz, "Theater Missile Defence and South Asia: A Volatile Mix," *The Nonproliferation Review* (Spring-Summer 1997), pp.54-62; on Cyprus, see Michael Barletta, "Cyprus: Mediterranean Countdown," *Bulletin of the Atomic Scientists* 54:6 (November/December 1998), pp.12-14; Kelly Couturier, "Cyprus Lies between War and Peace," *The Washington Post*, 9 May 1998, p.A17.

⁸⁸ Wiencek, *Dangerous Arsenals*, p.46; Stephen A. Cambone, "The United States and Theatre Missile Defence in North-east Asia," *Survival* 39:3 (Autumn 1997), pp.66-84.

⁸⁹ Robert Karniol, "Taiwan gains strength from strategy overhaul," *JDW*, 5 February 1997, p.15.

⁹⁰ Lisbeth Gronlund, David Wright and Yong Liu, "China and a Fissile Material Production Cut-off," *Survival* 37:4 (Winter 1995-96), pp.153-55.

⁹¹ Gary K. Bertsch, Richard T. Cupitt, and Takehiko Yamamoto, "Trade, export controls, and non-proliferation in the Asia-Pacific region," *The Pacific Review* 10:3 (1997), pp.407-25; William J. Long, "Trade and Technology Incentives and Bilateral Cooperation," *International Studies Quarterly* 40:1 (March 1996), pp.77-106.

⁹² Leon V. Sigal, "The North Korean Nuclear Crisis: Understanding the Failure of the 'Crime-and-Punishment' Strategy," *Arms Control Today* 27:3 (May 1997), pp.3-13; Sigal, "Jimmy Carter makes a deal," *The Bulletin of the Atomic Scientists* 54:1 (January/February 1998), pp.40-46.

Japan's experience in improving its domestic export control system has shown that innovative initiatives can be successful in both enhancing export control effectiveness without impeding business opportunities. The keys include consistent government support, streamlined process, education and training to both instill norms that self-control is good for business and enable the companies for better enforcement. At the same time, active Track-II involvement and input can also make important contributions.⁹³ In this context, the US-Japan initiatives in the regional export control seminars and workshops are highly commendable. What can be useful is to coordinate work of this nature with the activities of organizations such as CSCAP. The former offers sophisticated expertise developed over the years in the areas of export controls while the latter can provide the broader geostrategic, historical, and diplomatic contexts within which nonproliferation strategies must take place.

⁹³ Bates Gill, Kensuke Ebata, and Matthew Stephenson, "Japan's Export Control Initiatives: Meeting New Nonproliferation Challenges," *The Nonproliferation Review* 4:1 (Fall 1996), pp.30-42.