Complying By Denying:
Explaining Why States Develop Nonproliferation Export Controls

Supplemental Appendix

Douglas M. Stinnett
University of Georgia
stinnett@uga.edu

Bryan R. Early
University of Albany-SUNY
bearly@albany.edu

Cale Horne
Covenant College
cale.horne@covenant.edu

Johannes Karreth
University of Colorado Boulder
johannes.karreth@colorado.edu

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A. The NONPRO database

Table A1: Nonproliferation Compliance Component Items

ID	*Category*	*Question*
	Legal Basis	
1	XC Licensing Law	Does a law designate a specific agency or agencies as the authorized dual use export control licensing body?
2	XC Licensing Law	Does a law specify authority to license specific categories of dual-use including: transit, transshipment, re-export, deemed, and intangibles?
3	XC Licensing Law	Does the law include the authority to license negotiations and brokerage of DU goods?
4	XC Licensing Law	Does the law provide for the expert review of licensing applications?
5	XC Licensing Law	Does a law provide licensing agencies with the catchall authority to license or control goods for nonproliferation purposes?
6	XC Enforcement Law	Does a law designate a specific agency or agencies with DU export enforcement responsibilities?
7	XC Enforcement Law	Does a law designate a specific government agency or agencies with POE enforcement responsibilities?
8	XC Enforcement Law	Does a law give the customs authority or border enforcement agencies the authority to search, detain, and seize suspicious cargo?
9	XC Enforcement Law	Does a law give the government the authority to conduct export control investigations?
10	XC Enforcement Law	Does a law give the government the authority to prosecute violations as civil cases?
11	XC Enforcement Law	Does a law give the government the authority to prosecute violations as criminal cases?
12	Control Lists	Is there a legal basis authorizing the use of a dual-use control list for nonproliferation purposes?
13	Government-Industry Outreach	Is there a legal basis for providing government agencies authority to conduct assistance to industry on compliance with national strategic trade and border controls?
14	Government-Industry Outreach	Is there a legal basis for ensuring the transparency of national strategic trade and border control laws, regulations, requirements and procedures?
	Institutions	
15	XC Expertise	Has the country received external assistance in XC licensing training?
16	XC Expertise	Do frontline enforcement agencies have access to product classification expertise or resources?
17	XC Expertise	Does the institution control sensitive retransfers, re-exports, transits, transshipments, intangibles, and deemed exports?
18	Licensing Institution(s)	Is/are there institution(s) for the control of sensitive exports, either/or as general licenses or case-by-case?
19	Licensing Institution(s)	Is/are there institutions(s) for the control of brokerage activities?
20	Licensing Institution(s)	Are there mechanisms and resources by which classification decisions are based on control lists (mechanisms for determining if something is controlled: i.e., a product classification system for dual-use imports)?
21	Licensing Institution(s)	Is there a standard, written decision-making protocol for license approval (i.e. do they follow the EU Code of Conduct or a similar document, profess to respect UN embargoes, etc.)?
22	Licensing Institution(s)	Are there mechanisms by which enforcement actions (prosecutions, indictments, cases pending) are included in licensing decisions?
23	Licensing Institution(s)	Is there an interagency review of license applications (integrating and bringing to bear all relevant governmental expertise on licensing decisions)?
24	Customs and Border Security Institutions	Does the state have the equipment and capability to search for strategic items in cargo, people, and conveyances leaving the country from POEs?
25	Customs and Border Security Institutions	Does the state have the equipment and capability to search for strategic items in cargo, people, and conveyances leaving the country from green and blue borders?
26	Customs and Border Security Institutions	Are there institutions that have targeting and risk analysis techniques in identifying suspicious proliferation-relevant cargos?
27	Customs and Border Security Institutions	Are there rules, procedures, and equipment for verifying export licenses POEs?

28	Customs and Border Security Institutions	Do border enforcement agencies have frontline resources (paper guides / software/electronic tools) that assist with item identification?
29	Customs and Border Security Institutions	Are there rules and procedures for handling evidence related to strategic trade control crimes?
30	Customs and Border Security Institutions	Are there rules and procedures for searching, with or without a warrant depending on authority, business premises and records is strategic trade control cases (import and export)?
31	Customs and Border Security Institutions	Are there rules, procedures, and identified enforcement units specially trained in strategic trade control enforcement?
32	Customs and Border Security Institutions	Are there identified offices or individuals specially trained to prosecute cases of criminal strategic trade control violations?
33	Government-Industry Institutions	Are there institutions that make publicly available (via print or electronic means) national import and export control laws, regulations, procedures, control lists and other materials and guidelines to improve industry compliance with legal requirements?
34	Government-Industry Institutions	Are there dedicated industry outreach programs (counseling /seminars) to inform dual-use exporters and importers of national strategic trade control licensing requirements and procedures?
35	Government-Industry Institutions	Are there dedicated industry outreach activities (counseling / seminars) to inform dual-use exporters and importers about internal compliance programs (ICPs) and best practices for designing and implementing ICPs?
	Implementation	
36	XC Licensing	To what extent does the state license the export of dual-use goods and technologies (using both general and case-by-case licenses), relative to the amount of trade occurring in these sectors?
37	XC Licensing	To what extent does the state license brokerage-activities involving strategic goods (using both general and case-by-case licenses), relative to the amount of trade occurring in these sectors?
38	XC Licensing	To what extent does the state actively use a standard, written decision-making protocol (i.e. Code of Conduct) for license approval?
39	XC Licensing	To what extent does the state circulate license applications using an interagency process to integrate and bring to bear all relevant governmental expertise and opinions on licensing decisions?
40	XC Licensing	Circulate export license applications among technical experts to assess the proliferation risk and WMD use associated with the item or technology, end-uses and end-users?
41	National Control List	Does the state have a national list of dual-use goods that it controls for nonproliferation purposes?
42	National Control List	Does the state regularly update its National Control List(s) for sensitive strategic goods?
43	Customs & Border Security	Do border enforcement agencies enforce transit and transshipment controls on strategic goods?
44	Customs & Border Security	Do border enforcement agencies verify export control licenses at POEs?
45	Export Control Follow-Up	Does the state conduct extra-territorial end-user verification checks?
46	Export Control Follow-Up	Does the state prosecute individuals and entities in cases of civil export control violations?
47	Export Control Follow-Up	Does the state impose the full range of penalties for civil export control violations?
48	Export Control Follow-Up	Does the state prosecute individuals and entities in cases of criminal export control violations?
49	Export Control Follow-Up	Does the state impose the full range of penalties for criminal export control violations?
50	Government-Industry Outreach	Does the state that make publicly available (via print or electronic means) national import and export control laws, regulations, procedures, control lists and other materials and guidelines to improve industry compliance with legal requirements?
51	Government-Industry Outreach	Does the state inform dual-use exporters and importers of national strategic trade control licensing requirements and procedures?
52	Government-Industry Outreach	Does the state regularly conduct industry outreach activities (counseling / seminars) to inform dual-use exporters and importers about internal compliance programs (ICPs) and best practices for designing and implementing ICPs?

Table A2: Raw Nonproliferation scores of 30 countries

Country	*Legal Basis*	*State Institutions*	*Implementation*	*Nonproliferation Compliance Score*
Argentina	66.1	69.0	51.5	62.2
Australia	64.3	76.2	100.0	80.2
Azerbaijan	76.8	50.0	29.4	52.1
Brazil	73.2	40.5	47.1	53.6
China	78.6	76.2	61.8	72.2
Croatia	71.4	44.0	38.2	51.2
Egypt	8.9	11.9	11.8	10.9
France	55.4	91.7	52.9	66.7
Germany	87.5	92.9	88.2	89.5
India	66.1	59.5	42.6	56.1
Japan	71.4	71.4	80.9	74.6
Jordan	35.7	19.0	20.6	25.1
Kazakhstan	58.9	67.9	57.4	61.4
Lithuania	82.1	63.1	63.2	69.5
Mexico	51.8	44.0	22.1	39.3
Pakistan	67.9	53.6	27.9	49.8
Philippines	42.9	40.5	27.9	37.1
Poland	83.9	84.5	85.3	84.6
Romania	92.9	63.1	61.8	72.6
Russia	100.0	78.6	70.6	83.1
Serbia	82.1	73.8	55.9	70.6
Singapore	75.0	79.8	63.2	72.7
South Africa	76.8	41.7	63.2	60.6
Taiwan	80.4	76.2	60.3	72.3
Tajikistan	58.9	11.9	1.5	24.1
Thailand	41.1	21.4	7.4	23.3
Turkey	53.6	71.4	66.2	63.7
UAE	78.6	20.2	5.9	34.9
United Kingdom	96.4	98.8	98.5	97.9
United States	48.2	100.0	73.5	73.9

Note: Each of the three scores ranges from 0-100.

Table A3: Examples of sources used to code Nonproliferation scores

Legal Basis

- Domestic legal documents
- Global Legal Information Network (GLIN), at http://www.glin.gov/search.action
- Nuclear Threat Initiative - United Nations Security Council Resolution 1540 Database, at http://nuclearthreatinitiative.org/db/1540/index.html
- Legislative Database of the UNSCR 1540 committee, at http://www.un.org/sc/1540/legisdatabase.shtml

State Institutions

- Domestic reports from interior ministries, border police, customs offices, etc.
- Reports from U.S. embassies in the respective country
- United Nations Security Council Resolution 1540 Database, at http://nuclearthreatinitiative.org/db/1540/index.html
- ExportControl.org, a resource on nonproliferation export controls, at www.exportcontrol.org
- SIPRI reports on export controls and transfers of WMD-related materials, at http://www.sipri.org/research

Implementation

- Various news sources through LexisNexis
- SIPRI reports on export controls and transfers of WMD-related materials, at http://www.sipri.org/research
- Saferworld reports, at http://www.saferworld.org.uk
- Nuclear Threat Initiative - United Nations Security Council Resolution 1540 Database, at http://nuclearthreatinitiative.org/db/1540/index.html
- PIR Center reports, at http://www.pircenter.org/index.php?id=164

Note: Domestic sources, especially reports and statements from export control-related institutions, were used to gauge the presence of particular institutions and practices relative to additional information from independent sources.

B. Summary statistics

Table B1: Summary statistics (n=30)

Variable	*Mean*	*SD*	*Min*	*Max*
Nonproliferation Compliance Score	59.02	21.61	10.87	97.92
Legal Basis	68.23	19.66	8.93	100.00
State Institutions	58.37	24.91	11.90	98.81
Implementation	50.46	27.41	1.47	100.00
Corruption Perceptions Index	4.61	2.24	2.10	9.30
Political Stability	-0.09	0.82	-2.44	1.17
Regulatory Quality	0.37	0.82	-1.02	1.87
Rule of Law	0.21	0.91	-1.13	1.79
Control of Corruption	0.23	0.95	-1.04	2.20
Bureaucratic Capacity	0.02	0.87	-1.17	2.07
S-Score with System Leader	0.48	0.18	0.24	0.79
U.S. Alliance	0.40		0	1
GDP per capita (logarithmic)	8.75	1.31	6.05	10.58
Exports / GDP (logarithmic)	-1.18	0.65	-2.05	0.72
Polity	4.33	6.75	-8.00	10.00

Table B2: Summary statistics, comparing in-sample and out-of-sample cases of proliferation-relevant states

Indicator	*Mean*		*Median*		*Standard deviation*		*Diff.-of-means test*
	In sample	Excluded	In sample	Excluded	In sample	Excluded	p-value
GDP per capita	13492	15722	5643	6688	14867	18036	0.57
Trade openness (PWT)	95.81	99.05	76.94	93.24	81.30	41.02	0.81
Exports / GDP (%)	44.78	49.16	32.90	44.50	43.79	22.60	0.58
Polity	4.33	4.85	8.00	8.00	6.75	6.93	0.74
Population density	8987	8730	2372	2023	31654	43437	0.98
S-Score with System Leader	0.48	0.48	0.42	0.42	0.18	0.18	0.92
U.S. Alliance^{+}	40%	34%					
Corruption Perceptions Index	4.61	4.67	3.90	3.50	2.24	2.40	0.90
Political Stability	-0.09	0.04	0.03	0.26	0.82	1.09	0.84
Regulatory Quality	0.37	0.19	0.38	0.33	0.82	1.17	0.45
Rule of Law	0.21	0.15	0.01	0.07	0.91	1.12	0.79
Control of Corruption	0.23	0.21	-0.03	-0.04	0.95	1.15	0.93
Bureaucratic Quality Factor	0.02	-0.01	-0.20	-0.21	0.87	1.06	0.88
Europe^{+}	33%	45%					
Middle East^{+}	13%	16%					
Africa^{+}	3%	5%					
Asia^{+}	37%	18%					
Americas^{+}	13%	16%					

Notes:

For the sample, n=30; for the excluded countries, n = 54; total n = 84 proliferation-relevant states.

All variables are measured in 2006, except for the S-score with the system leader (2000).

Variables marked with $^{+}$ are binary variables.

Transparency International's Corruption Perception Index was rescaled so that lower values reflect higher corruption.

Table B3: Correlation matrix (n=30)

	Nonpro Compliance Score	Legal Basis	State Institutions	Implemen-tation	Corruption Perceptions Index	Political Stability	Regulatory Quality	Rule of Law	Control of Corruption	Bureaucratic Capacity	S-Score with System Leader	GDP per capita (log)	Exports / GDP (log)	Polity
Nonpro Compliance Score	1	0.7505	0.9288	0.9416	0.5148	0.5243	0.5303	0.4694	0.4923	0.5008	0.3732	0.5953	-0.1427	0.5526
Legal Basis	0.7505	1	0.5236	0.5547	0.1935	0.3576	0.2239	0.1053	0.1849	0.1749	0.0344	0.3341	0.1567	0.2825
State Institutions	0.9288	0.5236	1	0.8705	0.5178	0.4349	0.5194	0.4958	0.4921	0.5078	0.5034	0.5891	-0.1969	0.5144
Implementation	0.9416	0.5547	0.8705	1	0.5864	0.5684	0.5996	0.5638	0.5639	0.5763	0.3811	0.6076	-0.264	0.6147
Corruption Perceptions Index	0.5148	0.1935	0.5178	0.5864	1	0.7349	0.9421	0.9749	0.9894	0.9983	0.2594	0.8312	0.027	0.3636
Political Stability	0.5243	0.3576	0.4349	0.5684	0.7349	1	0.7402	0.7244	0.7375	0.7318	0.1586	0.8247	0.2146	0.3457
Regulatory Quality	0.5303	0.2239	0.5194	0.5996	0.9421	0.7402	1	0.9404	0.9325	0.9391	0.2891	0.8526	0.064	0.4394
Rule of Law	0.4694	0.1053	0.4958	0.5638	0.9749	0.7244	0.9404	1	0.9704	0.9816	0.2539	0.8076	-0.019	0.3781
Control of Corruption	0.4923	0.1849	0.4921	0.5639	0.9894	0.7375	0.9325	0.9704	1	0.9947	0.2793	0.8358	0.0173	0.3638
Bureaucratic Capacity	0.5008	0.1749	0.5078	0.5763	0.9983	0.7318	0.9391	0.9816	0.9947	1	0.2643	0.8286	0.0139	0.3632
S-Score with System Leader	0.3732	0.0344	0.5034	0.3811	0.2594	0.1586	0.2891	0.2539	0.2793	0.2643	1	0.3751	-0.4497	0.5626
GDP per capita (log)	0.5953	0.3341	0.5891	0.6076	0.8312	0.8247	0.8526	0.8076	0.8358	0.8286	0.3751	1	0.0582	0.4196
Exports / GDP (log)	-0.1427	0.1567	-0.1969	-0.264	0.027	0.2146	0.064	-0.019	0.0173	0.0139	-0.4497	0.0582	1	-0.4773
Polity	0.5526	0.2825	0.5144	0.6147	0.3636	0.3457	0.4394	0.3781	0.3638	0.3632	0.5626	0.4196	-0.4773	1

C. Robustness checks

Table C1: Additional regressions, controlling for regime type

Explanatory Variables	(1)	(2)	(3)	(4)
Exports / GDP (logarithmic)	-1.19	-.77	2.12	1.54
	(6.65)	(6.30)	(6.46)	(6.16)
S-Score with System Leader	-1.11		11.35	
	(26.91)		(26.46)	
U.S. Alliance		5.94		7.08
		(9.34)		(9.38)
GDP per capita (logarithmic)	8.05*	7.65*		
	(3.21)	(3.10)		
Bureaucratic Capacity			8.48*	8.19*
			(4.04)	(3.99)
Democracy	11.43	8.20	16.09	13.66
	(10.35)	(10.72)	(10.35)	(10.46)
Constant	-19.31	-16.29	45.78	49.39
R^2	0.37	0.37	0.37	0.35
N	30	30	30	30

** p<0.01, * p<0.05, † p<0.1 in one-tailed tests.
Robust regression coefficients. Standard errors are in parentheses.

Table C2: Additional regressions, controlling for NSG membership

Explanatory Variables	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Exports / GDP (logarithmic)	-3.02 (6.48)	-.39 (6.07)	-0.09 (6.39)	.65 (5.98)	-3.75 (6.34)	-2.55 (5.96)	-1.33 (6.28)	-1.27 (5.93)
S-Score with System Leader	-10.70 (25.15)		9.01 (24.81)		4.30 (24.16)		17.38 (24.26)	
U.S. Alliance		7.26 (8.47)		8.68 (8.47)		7.56 (7.95)		9.50 (8.13)
GDP per capita (logarithmic)	7.38* (3.55)	6.01* (3.50)			8.36* (3.58)	7.68* (3.52)		
Bureaucratic Capacity			5.97 (4.42)	5.17 (4.42)			9.40* (5.14)	8.56* (5.09)
NSG Founding Member	13.97 (10.81)	14.34 (10.86)	18.98* (10.70)	17.95* (10.41)	138.92 (108.83)	138.21 (107.01)	23.22* (10.89)	22.60* (10.62)
NSG * GDP p.c.					-12.73 (11.06)	-12.67 (10.86)		
NSG * Bureaucratic Capacity							-11.18 (9.67)	-10.70 (9.34)
Constant	-4.67	1.1	52.04	54.26	-22.22	-15.96	46.97	51.95
R^2	0.35	0.34	0.318	0.35	0.41	0.43	0.38	0.34
N	30	30	30	30	30	30	30	30

** p<0.01, * p<0.0, in one-tailed tests.
Robust regression coefficients. Standard errors are in parentheses.