

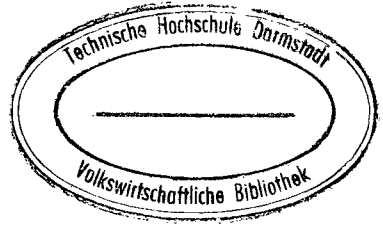
ECONOMICS OF ARMS REDUCTION AND THE PEACE PROCESS

Contributions from Peace Economics
and Peace Science

Edited by

Walter ISARD
*Cornell University
Ithaca, N.Y., U.S.A.*

Charles H. ANDERTON
*College of the Holy Cross
Worcester, M.A., U.S.A.*



1992

NORTH-HOLLAND
AMSTERDAM • LONDON • NEW YORK • TOKYO

Contents

	<i>page</i>
<i>List of Illustrations</i>	xi
<i>List of Tables</i>	xiii
<i>Preface</i>	xv
1 A SURVEY OF THE PEACE ECONOMICS LITERATURE	1
<i>by Walter Isard and Charles H. Anderton</i>	
1.1 Introduction	1
1.2 The General Conceptual Framework and Some Basic Issues	2
1.3 Standard Resource Allocation Analysis and Strategic Behavior	4
1.4 Arms Race Models and Arms Control	10
1.5 Macroeconomic Stability Analysis	18
1.5.1 Inflation	21
1.5.2 Employment/Unemployment at the National Level	22
1.5.3 Budget Deficits and Defense/Welfare Tradeoffs	24
1.5.4 Balance of Payments and Trade	25
1.6 Disaggregate (Micro-) Analysis of Defense Spending Impacts	26
1.6.1 Regional Effects	27
1.6.2 Industrial and Occupational Effects	28
1.6.3 The Conversion Problem	29
1.7 Investment, Research and Development, Productivity and Economic Growth	30
1.7.1 Developed Country Analysis: Specific Studies	31
1.7.2 Developed Countries Analysis: Cross-national Studies	34
1.7.3 Developing Country Analysis	34
1.8 Political Economy, Organizational and Other Non-Economic Factors	36
1.9 Conflict Management Analyses and Procedures	38
1.10 Some Final Comments	40
Footnotes	41
References	43
2 THE BASIC ECONOMICS OF ARMS REDUCTION	57
<i>by Kenneth J. Arrow</i>	
2.1 Introduction	57
2.2 Standard Resource Allocation Theory	58
2.3 Macroeconomic Stability	59

2.4	Modern Growth Theory	63
2.5	Political Economy	64
2.6	Final Remark	66
	Footnotes	66
	References	66
3	IMPACT OF MILITARY CUTS ON THE SOVIET AND EASTERN EUROPEAN ECONOMIES: MODELS AND SIMULATIONS	69
	<i>by Lawrence R. Klein, Miroslaw Gronicki and Hiroyuki Kosaka</i>	
3.1	Preface	69
3.2	Introductory Remarks	70
3.3	The Klein-Kosaka Arms Race Submodel	72
3.4	A Model of the Centrally Planned Economy (CPE)	72
3.5	Simulation Exercises	79
3.6	Evaluative and Summary Remarks	83
	Footnotes	84
	References	86
4	CONFLICT AND TRADE: AN ECONOMICS APPROACH TO POLITICAL INTERNATIONAL INTERACTIONS	89
	<i>by Solomon William Polachek</i>	
4.1	Background	89
4.2	Theoretical Basis	90
4.3	Proposition One: The Trade Conflict Relationship	95
	4.3.1 <i>Data</i>	96
	4.3.2 <i>Cross-Sectional Analysis</i>	99
	4.3.3 <i>Time-Series Analysis</i>	105
4.4	Proposition Two: The Trade Conflict Relationship Augmented By Trade Elasticities	108
	4.4.1 <i>Import Demand From the Rest of the World and the Trade/Conflict Relationship</i>	109
	4.4.2 <i>Bilateral Import Demand Elasticity Estimates and the Trade/Conflict Relationship</i>	111
4.5	Conclusions	113
	Footnotes	114
	References	117

5	ON MODELING THE IMPACT OF ARMS REDUCTIONS ON WORLD TRADE	121
	<i>by Jeffrey H. Bergstrand</i>	
5.1	Introduction	121
5.2	Motivation	122
5.3	Theoretical Issues	124
5.4	Methodology	127
5.5	Data Considerations	129
5.6	Empirical Results	130
5.7	Economic Determinants of Arms Trade	137
5.8	Conclusions and Implications	139
	Footnotes	140
	References	141
6	THE NEW STRATEGIC ENVIRONMENT AND ECONOMIC FACTORS IN THE FUTURE OF NUCLEAR DEFENSE	143
	<i>by Martin C. McGuire</i>	
6.1	The New Strategic Environment	143
6.2	Economic Infeasibility of Strategic Defense in Cold War Environment	146
	6.2.1 <i>Similarity of offensive vs defensive technologies and forces</i>	146
	6.2.2 <i>Relative costs of assured survival vs. assured destruction</i>	150
	6.2.3 <i>The cold war: a non-cooperative allocation game</i>	150
6.3	Strategic Defense in the Post Cold War Era	153
	6.3.1 <i>Relative costs of defense vs. offense and separation of defense and offense technologies</i>	153
	6.3.2 <i>Shift in the character of the arms race: more collaboration- less competition</i>	154
	6.3.3 <i>Strategic Preferences</i>	155
	References	156
7	COMPETING OPTIMA IN THE GULF WAR	159
	<i>by Murray Wolfson, Sergio Gutierrez, John Traynor and Robert Smith</i>	
7.1	Introduction	159
7.2	Competing Goals	160
7.3	Competing Valuations of Human Life	161
7.4	The Model	163

7.4.1	<i>Destruction function</i>	163
7.4.2	<i>Iraqi Casualties</i>	164
7.4.3	<i>Cost of bombing</i>	166
7.4.4	<i>UN Casualties</i>	168
7.5	Competing Choices	169
7.6	Measurement: The Elasticity of Saving Lives Through Bombing	171
7.7	Ground Attack Versus Sanctions	174
7.7.1	<i>Sanctions and economic war would have worked</i>	175
7.7.2	<i>Why sanctions might not have worked</i>	177
7.8	Conclusion	178
	Footnotes	179
	References	181
8	DETERMINANTS OF MILITARY EXPENDITURES	183
	<i>by Carlos Seiglie</i>	
8.1	Introduction	183
8.2	The Supply of Military Capability	186
8.3	The Demand for National Security	188
8.4	Estimates of the Military Expenditures Function	192
8.5	Conclusion	200
	References	200
9	DISARMAMENT NEGOTIATIONS AS AN EXERCISE IN MATURE RIVALRY	203
	<i>by Robert E. Kuenne</i>	
9.1	Introduction	203
9.2	Mature Rivalry	204
9.3	Encouraging the Development of Mature Rivalry	207
9.4	The Proposed START Treaty	209
9.5	A Simple Model of Disarmament Negotiations	211
9.6	Conclusions	216
	Footnotes	217
	References	217
10	WARS AND FAMINES: ON DIVISIONS AND INCENTIVES	219
	<i>by Amyrta Sen</i>	
10.1	Introduction	219
10.2	Divisions and Incentives	220

10.3	Famine Mortality and Health Services	222
10.4	Investment, Complementarity and Conflicts	223
10.5	Political Incentives and Authoritarianism	225
10.6	Concluding Remarks	227
	Footnotes	228
	References	232
11	REGIONAL CONFLICT AND MILITARY SPENDING IN THE DEVELOPING COUNTRIES	235
	<i>by Manas Chatterji</i>	
11.1	The Changing World Environment: Implications for Developing Countries	235
11.2	Militarization and Economic Growth	237
11.3	Benoit's Analysis and Findings	239
11.4	Critiques of Benoit	241
11.5	Some Summary Remarks	244
	References and Selected Bibliography	245
12	DO ARMS RACES LEAD TO PEACE?	249
	<i>by Jean-Christian Lambélet</i>	
12.1	Introduction	249
12.2	Objections and Competing Views	251
12.3	A Research Agenda	253
12.4	Peace For Our Time?	254
	Footnotes	256
	References	260
13	KEY DIRECTIONS FOR RESEARCH	261
	<i>by Walter Isard and Charles Anderton</i>	
13.1	Introduction	261
13.2	The Urgent Need for Developing Country Studies	261
13.3	Need for a More Rigorous General Conceptual Framework and its Further Development	262
13.4	Need for Better Defined and More Comprehensive Political Economy Studies	262
13.5	Need for Development of Contextual Game and Coalition Analysis	265

13.6	The Need for Conflict Management Procedures With Greater Politico-Economic Feasibility and Analytical Significance	266
13.7	Other Needed Research Directions	268
	Footnotes	268
	References	268