

The Political Economy of National Defense

William J. Weida and Frank L. Gertcher



The Political Economy of National Defense



Taylor & Francis

Taylor & Francis Group

<http://taylorandfrancis.com>

About the Book and Authors

This timely and wide-ranging study covers both the economic and the political aspects of defense spending—first by providing a theoretical framework and then by explaining, in a political economy context, the results of decisions to allocate scarce resources to defense. In doing so, the authors provide a comprehensive picture of the interaction between defense spending and the economic and political structure of the United States, complementing their exploration of topical concerns such as SDI with analysis of long-term trends and issues of timeless importance in the defense debate.

Because of the politicizing of defense planning and procurement, there have been few significant applications of optimization techniques to high-level defense issues over the past decade. As a result, there has been a rapid decline in the importance of those techniques—historically the focus of books on defense economics. Like its predecessors, this book presents optimization techniques applicable to a wide variety of defense problems, but it also illustrates what happens in actual practice and why defense decisions are often not economically efficient. The authors discuss alternatives for cases when political constraints make efficient solutions unlikely and explore changes in the defense establishment and political structures that would make economically efficient resource allocations a reality.

William J. Weida is associate professor at The Colorado College, Colorado Springs, Colorado. **Frank L. Gertcher** is senior research specialist at R&D Associates, Colorado Springs, Colorado.



Taylor & Francis

Taylor & Francis Group

<http://taylorandfrancis.com>

The Political Economy of National Defense

**William J. Weida
and Frank L. Gertcher**

First published 1987 by Westview Press

Published 2019 by Routledge
52 Vanderbilt Avenue, New York, NY 10017
2 Park Square, Milton Park, Abingdon, Oxon OX14 4RN

Routledge is an imprint of the Taylor & Francis Group, an informa business

Copyright © 1987 Taylor & Francis

All rights reserved. No part of this book may be reprinted or reproduced or utilised in any form or by any electronic, mechanical, or other means, now known or hereafter invented, including photocopying and recording, or in any information storage or retrieval system, without permission in writing from the publishers.

Notice:

Product or corporate names may be trademarks or registered trademarks, and are used only for identification and explanation without intent to infringe.

Library of Congress Cataloging-in-Publication Data

Weida, William J.

The political economy of national defense.

Bibliography: p.

Includes index.

1. United States—Armed Forces—Appropriations and expenditures. 2. Munitions—United States.

3. Munitions—Economic aspects—United States.

4. Budget—United States. 5. United States—Military

policy. 6. United States—Politics and government—

1981-. I. Gertcher, Frank L. II. Title.

UA23.W3694 1987 355.6'22'0973 86-19015

ISBN 13: 978-0-367-29493-9 (hbk)

Contents

<i>List of Tables and Figures</i>	xiii
<i>Preface</i>	xv
<i>Acknowledgments</i>	xvii

Part 1

The Economics and Politics of National Defense	1
---	---

1 The Dual Nature of Defense	3
---	---

Introduction	3
Defense as an Economic Problem	4
Defense as a Political Problem	7
The Defense Procurement Process	8
The Defense Budget Process	10
Summary: Is the Total Effort Right or Wrong?	14
Notes	14

2 The Politics of National Defense Spending	16
--	----

The Evolution of Philosophy, 1950–1985	16
The Reagan Administration and Defense Budgeting	20
The Congress and Defense Budgeting	22
Additional Problems	27
Organizing for Allocation	30
Relations Between Congress and the Department of Defense	32
Selecting the Scenario for War	33
Conclusions	36
Notes	37

3	The Economics of Production, Distribution, and Defense	39
	Introduction	39
	Alternative Economic Systems	40
	Evaluating Economic Systems	40
	Four Types of Market Failure	42
	Defense and the Theory of the Public Good	46
	A Model of U.S. Federal Government Expenditures	51
	Conclusions	53
	Notes	54
4	Making and Controlling the Defense Budget	56
	Introduction	56
	Budget Authority and Outlays	57
	The Process: How the Defense Budget Is Made	58
	Requests and Appropriations	61
	Accounting for Inflation	61
	Spending Choices	64
	The Strategy Behind the Defense Buildup	69
	The Defense Budget in the Context of the National Budget	71
	Cutting the Defense Budget	74
	Conclusions: Defense and Competition for the Federal Budget	77
	Notes	79
5	Regional Defense Spending	81
	Budgeting for Regional Gain	81
	The Mechanics of Regional Defense Spending	83
	The Employment Impact of Direct and Indirect Defense Spending	84
	Sectoral Employment and Defense	88
	Actual Experience with Defense Employment	90
	Projected Growth in Defense Employment	91
	Defense as a Competitor for Employees: Spending on Science and Engineering	91
	Regional Spending and Military Force Deployment	94
	Allocating Regional Defense Expenditures	95
	Pros and Cons of Regional Defense Spending	96
	Future Impacts of Regional Defense Spending	99

Conclusions	102
Notes	103

Part 2

The Defense Industry	107
-----------------------------------	------------

6 Preparing for War: The Defense Industrial Base.....	109
--	------------

Introduction	109
The Condition of the Existing Defense Industries.....	110
Conclusions Regarding the Industrial Base	115
Current Attempts to Deal with Industrial Base Problems	116
Conclusions	120
Notes	120

7 Efficient Production of Weapon Systems	123
---	------------

Introduction	123
Defense Contractors and Profits.....	123
Maximizing Present-Value Profits for a Production Run	125
Production Schedule Differences Between Monopoly and Competitive Markets	129
Efficient Production Rates	131
Government and Production Decisions.....	132
Conclusions	133
Notes	134

8 The Growth of Cost: Efficiency Issues	135
--	------------

Introduction	135
Efficiency and the Production of Arms.....	136
The Lack of Competition in the Defense Industry	136
Wages and Hours in Defense Production	137
The Quality of Defense Work.....	138
Subsidies to Defense Industries	140
Conclusions	142
Notes	143

9 The Growth of Cost: Other Factors	145
--	------------

Introduction	145
The Cost of Military Manpower	146

Technology and Cost.....	150
General Factors in the Cost of Arms	153
Department of Defense Actions to Lower Costs	158
Conclusions	160
Notes.....	161
10 International Determinants of Defense Costs.....	163
Introduction.....	163
Burden Sharing.....	164
Defense Costs and the International Arms Trade	166
Paying for Weapons: Offsets	171
Security Assistance: Military Aid.....	172
Conclusions	174
Notes.....	174
Part 3	
The Economics of New Strategies.....	177
11 Star Wars: The Political Economy of Strategic Defense	179
Introduction.....	179
Evolution of U.S. Strategy.....	180
Pressures for Strategic Defense.....	183
Launching Strategic Defense Programs.....	184
The Elements of Ballistic Missile Defense	185
The SDI Budget	187
Support and Concern in Congress	189
Allied Economic Interest.....	190
Spin-Offs	191
The Long-Term Costs of Strategic Defense	191
The Future of the Strategic Defense Initiative	192
An Offense to Defensive Transition	193
Conclusions	196
Notes.....	197
12 Conclusion: Finding Better Solutions.....	200
The Defense Environment	200
Thinking About Half-Questions	201
Is a Strategy for Allocating Resources to Defense Possible?.....	202

The Costs of Operating Without a Strategy
 for Allocating Resources to Defense..... 204
The Structural Costs of Defense 204
The Consequences of Not Allocating Resources
 to Achieve Well-Defined Objectives 205
Defining the Issues 206
Critical Questions About Defense 207
Conclusions 207
Notes 208

Bibliography 209
Index 221



Taylor & Francis

Taylor & Francis Group

<http://taylorandfrancis.com>

Tables and Figures

Tables

1.1	Department of Defense Budget by Appropriation Category, 1982–1984	12
1.2	Department of Defense Budget by Major Program, 1982–1984.....	13
4.1	Defense Budget Authority vs. Outlays	58
4.2	Changes in the Armed Forces, 1980–1984	68
4.3	U.S. Navy Five-Year Shipbuilding Programs.....	68
4.4	Changes in Unit Costs of Selected Weapons	68
4.5	The Effect of Cutting \$1 of Government Expenditure in Various Spending Categories.....	74
4.6	Discretionary Budget Balance Changes for the United States and Its Allies	75
5.1	DoD Estimated Payroll and Prime Contracts by State, FY 1983	86
5.2	Sectoral Employment.....	89
5.3	Employment from Defense Spending: Selected Occupations	93
5.4	FY 1983 Defense Spending, by State.....	98
5.5	Estimates of Total Defense Expenditures.....	101
6.1	Industry-Wide Productivity Trends: Value of Shipments per Employee, 1982–1984.....	111
6.2	Major Cost Factors Affecting Productivity in Weapons Production.....	111
6.3	1983 Aerospace Capacity Utilization by Functional Area.....	114

10.1	1984 NATO Troop Strength and Budgets	164
10.2	World Arms Trade, 1970–1982	168
11.1	Strategic Defense Initiative Projected Budget, 1985	188
11.2	A Defense Transition	194

Figures

3.1	A Production Externality	43
3.2	The Effects of Monopoly on Resource Allocation	44
3.3	Monopolistic Production and the Production Possibilities Frontier	44
3.4	Marginal Benefits of Deterrence	47
3.5	Defense and Civilian Goods Production Possibilities Frontier	50
4.1	Fiscal Year Outlay Patterns and Actual Defense Budget Expenditures	58
4.2	The Growing Defense Dollar Mismatch: Fiscal Guidance vs. the Defense Budget and Appropriated Dollars	59
4.3	Progress Toward Sustainability in Munitions	65
4.4	Federal Budget Outlays	71
4.5	FY 1984 Procurement Outlays: Discretionary vs. Nondiscretionary	73
4.6	Discretionary and Nondiscretionary Parts of the Federal Budget	73
6.1	Aircraft Sales and Aerospace Industry Capital Investments, 1968–1983	112
6.2	Reasons for Foreign-Supplied Aerospace Items, 1983	115
9.1	Development Time for Major Weapon Systems	152
9.2	Operating Profit and Imputed Interest for DoD Businesses and General Durable Goods Manufacturing	154
9.3	Development, Production, and Maintenance Cost as a Percent of Procurement Expenditures	158
11.1	Phases of a Ballistic Missile Flight	185

Preface

We developed this book to cover both the economic and the political aspects of defense spending—first by providing a theoretical framework and then by explaining, in a political economy context, the results of decisions to allocate scarce resources to defense. In so doing, we attempted to provide a comprehensive picture of the interaction of defense spending with the economic and political structure of the United States.

Past defense economics books have generally confined themselves to explaining the applications of economic optimization techniques to defense problems. However, there have been few important applications of these techniques to high-level defense issues over the past ten years, mainly because of the politicizing of the defense planning and procurement processes. This politicized approach has been accompanied by increasing defense budgets and deep ideological differences on the relative value of key weapon systems. The result has been a decline in the importance of optimization techniques in the top-level management of today's defense establishment and in the planning of tomorrow's defense systems.

Following its predecessors, *The Political Economy of National Defense* presents applicable optimization techniques for a wide variety of defense problems, but it also shows what happens in actual practice and why defense decisions often are not economically efficient. In some cases, the book also points out possible solutions. In cases where efficient solutions are not possible, given the relevant political constraints, the book discusses possible alterations to defense establishment structures that would permit more efficient solutions.

This book is designed for serious students of defense economics, for defense planners, and for people who wish to increase their understanding of the political economy of defense. Students may wish to spend extra time on the theoretical discussions and may wish to seek additional

details in the references cited in the notes at the end of each chapter. The more casual reader may prefer to spend less time on the technical details in favor of a more general review of the analyses and the conclusions. In either case, this book should provide the reader with a bridge between the theoretical world of economic efficiency and the politically motivated world of high-level defense planning.

William J. Weida
Frank L. Gertcher

Acknowledgments

We are grateful to the many individuals who aided in the preparation of *The Political Economy of National Defense*. Dr. Donald C. Washburn and others at R&D Associates graciously provided useful information on defense programs. Major Terry Raney and others at the Air Force Academy provided insightful reviews and comments. Professors George Staller and Judith Reppy of Cornell University provided both guidance and helpful suggestions. We also want to thank Lisa Gertcher, who typed four chapters of the manuscript and put up with her father's many revisions, and Joyce DeMeyer, who did an excellent job on the tables and figures. Finally, we want to thank our wives, Betty and Judy, for their encouragement and for listening patiently over the past two years to periodic lectures on the importance of defense economics.

Although every effort was made to eliminate errors in the book, we recognize that some may have slipped through. For these we take full responsibility, and we encourage readers to correspond with us concerning corrections and suggestions for improvements.

W.J.W.
F.L.G.



Taylor & Francis

Taylor & Francis Group

<http://taylorandfrancis.com>

Part 1
The Economics and Politics
of National Defense



Taylor & Francis

Taylor & Francis Group

<http://taylorandfrancis.com>

1

The Dual Nature of Defense

INTRODUCTION

The fundamental goals of U.S. national security policy have remained essentially unchanged since the end of World War II. These are to preserve the independence, institutions, territory, and interests of the United States and to shape an international order in which U.S. institutions and freedoms can survive and prosper.

U.S. political leaders have developed certain national security objectives to support national security policy. Some current objectives were established by previous administrations; others are new or have been modified in response to changes and emerging trends in the international situation. As the end of the twentieth century approaches, the objectives include:

- To deter military attack or coercion by the Soviet Union and its allies against the United States, its allies, and other friendly countries.
- In the event of an attack, to deny the enemy his objectives and to bring a rapid end to the conflict on terms favorable to U.S. interests.
- To promote meaningful and verifiable mutual reductions in nuclear and conventional forces through negotiations with the Soviet Union and the Warsaw Pact.
- To inhibit expansion of Soviet control and military presence and to induce the Soviet Union to withdraw from countries where it has imposed and maintains its presence by force of arms.
- To strengthen NATO and U.S. capabilities to deter or defeat the threat posed by Soviet and Warsaw Pact forces.
- To maintain the security of U.S. sea-lanes and the supply of essential resources from other countries.
- To foster the security of allies and friendly nations throughout the world.¹

These broad policy objectives provide a basis for a defense establishment, but they do not specify the nature of the forces that must evolve to meet threats that change over time. For example, the United States could rely upon an improved strategic retaliatory force as a deterrent against Soviet nuclear attack, or it could rely upon new ballistic missile and air defenses to stop incoming Soviet nuclear warheads before they reach their intended targets. The choice of one, the other, or a mix of these or other alternatives involves both economic and political decision criteria. Further, decisionmakers operate in an environment of uncertainty regarding potential enemy intentions, the reliability of weapon systems, the nature, location, and timing of conventional conflicts and terrorist attacks, the economic impacts of defense spending, and so on.

Given these uncertainties, no defense establishment can be expected to always make the "right" decisions, even if the criteria for judging what is right were agreed upon by all of the players in the decision process. It is to the credit of the U.S. defense establishment that for the most part, national security has been preserved over the past forty years in an increasingly dangerous and uncertain world.

U.S. national defense can be viewed as both an economic and a political problem. On the economic side, scarce resources that are allocated to defense are not available for civilian use—although defense technologies often have civilian applications. Defense is also political, not only because of the political aspects of perceived threats but also because the U.S. defense budget—about \$300 billion in fiscal year 1987—accounts for about 7 percent of the gross national product (GNP) and about 28 percent of total government spending.

The level of defense spending in any given year is determined through a complex political process that yields decisions that are often not economically efficient. For example, the regional allocation of billions in defense dollars is always a concern in Congress because of the effect of defense spending on jobs and other regional economic activities. This fact is not lost on the Pentagon, which has often allocated defense contracts to key congressional districts to gain support for expensive, high-priority programs.

DEFENSE AS AN ECONOMIC PROBLEM

To attain an efficient force structure, the conventional view of defense economic planners is to maximize some objective, such as strategic deterrence, subject to budget and other constraints. For example, one could combine limited quantities of missiles, bombers, submarines, crews, bases, and maintenance facilities to produce a strategic force that would maximize some probabilistic measure of "warheads on target" subject

to budget, timing, and survivability constraints.² This is essentially the same economic problem (although in many respects a more difficult one) as the problem of combining limited quantities of steel, plastics, rubber, paint, fabrics, labor, and production facilities to produce automobiles in such a way as to maximize long-run profits. In both cases, there is an objective, there are budgetary and other resource constraints, and there is a potential for economic efficiency.

Economy and efficiency are two different ways of looking at the same characteristic of an operation. If a business executive or a military commander has a fixed budget (or other fixed resources) and attempts to maximize long-run profits or the attainment of some other objective, the choices that maximize the objective for a given budget are the same choices that minimize the cost of attaining that objective. For example, if a given mix of land-based missiles, manned bombers, and missile equipped submarines is the system that provides maximum deterrence with a \$100 billion annual budget, it is also the system that most economically achieves that level of deterrence. In other words, there is no conflict between the budgeteer who wants to economize and the military commander who wants to be efficient. Except in the determination of the overall size of the budget and the nature of the objective to be achieved, they should be able to agree on all the subsequent decisions.

Clearly, this view does not account for the larger issues of budget size and overall national objectives. For example, the size of the defense budget is regularly reviewed and modified by Congress and the Office of Management and Budget (OMB) to account for trade-offs between nondefense and defense programs. Thus, the economic problem of defense also involves deciding how much nondefense goods and services to sacrifice in the interests of national security.

The economic problem of national defense can be expanded as follows. A nation has certain resources—now and prospectively in the future—which are classified by economists as various types of land, labor, and capital. These resources can be used to satisfy many competing objectives: national defense, a high standard of living, social security, a rapid rate of economic growth, and so on. If there is full employment, the more resources the nation devotes to defense, the less it will have for social programs, and vice versa.

Some economists have suggested the use of a "social welfare function," which could be maximized by appropriately allocating the nations' resources among various activities. However, for reasons that will be explained in this book, this approach to the problem of determining the size of the defense budget is not practical. Alternatively, one could break the resource allocation problem into manageable pieces and determine efficient solutions to objectives that are subsets of some overall

objective. By knowing the efficient solutions to the pieces, the budgeteer could determine the overall budget by a bottom-up approach. However, even if efficient economic solutions are found, political realities may often force solutions that are economically inefficient.

As a reasonable economic framework, let us divide the problem of allocating resources to national defense into three levels. From the point of view of an economist, national defense may be said to depend on: (1) the quantity of national resources available now and in the future, (2) the proportion of these resources allocated to national defense, and (3) the efficiency with which the resources allocated to defense are used. Several agencies of the U.S. government, including the Council of Economic Advisers and various congressional committees, are concerned with the problem at the first and highest level. Of course, government policies cannot influence the quantity of present resources, but policies can affect the full and productive employment of resources, as well as their rate of growth, and therefore the quantity of resources that will be available in the future. (Present resources are the consequence of past economic policies.)

Problems at the second level are the responsibility of the Office of Management and Budget and the appropriations committees of Congress, although all executive departments are involved, and every member of Congress is interested. When a decision is made to devote a given amount of national resources to defense, the size of the defense budget has essentially been determined. In effect, the government is choosing between more defense and less of other things, or vice versa. For example, the cost of one B-1 bomber is equivalent to new schools in more than twenty cities; or two electric power plants, each serving a town of 60,000 people; or two fully equipped hospitals; or some thirty miles of interstate highway.

Problems at the third level—the efficient use of the resources allocated to defense—are primarily internal problems to be solved by the Department of Defense and its agencies, although for reasons that we will examine later in this book, the president, other departments, and Congress are concerned with the solutions to some of them. These problems consist of choosing efficiently, or economically, among the alternative methods of achieving defense objectives within the budget and other constraints. Alternative methods may include different strategies, different tactics, various forces, or different weapons.

It may not be apparent to those who are unfamiliar with military problems how wide the ranges of choice actually are. There are usually a large number of ways to attain a defense objective, some much more efficient than others. Consider the range of choices in the following three examples, taken from three different levels of defense decision-