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Toward Meaningful Military Compensation Reform

Research in Support of DoD's Review

Beth J. Asch, James Hosek, Michael G. Mattock





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Preface

This report describes two proposals for reforming the military compensation system, focusing on retirement compensation. Both proposals retain positive aspects of the current system while also providing cost savings, improving equity, potentially adding force management flexibility, and simplifying the Department of Defense disability compensation system.

This research was conducted within the Forces and Resources Policy Center of the RAND National Defense Research Institute, a federally funded research and development center sponsored by the Office of the Secretary of Defense, the Joint Staff, the Unified Combatant Commands, the Navy, the Marine Corps, the defense agencies, and the defense Intelligence Community. For more information on the Forces and Resources Policy Center, see <http://www.rand.org/nsrd/ndri/centers/frp.html> or contact the director (contact information is provided on the web page).

Policy Overview

Pressure to reduce the federal deficit, planned reductions in strength, concerns about cost, and perceptions expressed by military leaders, past commissions, and studies about the lack of fairness of the military compensation system have placed increased attention on military compensation as an area for reform. In September 2011, the Office of the Secretary of Defense convened a working group of senior representatives throughout the Department of Defense (DoD) to conduct a comprehensive review of military compensation, focusing particularly on retirement compensation. RAND worked closely with this group over an 18-month period to analyze numerous retirement proposals and evaluate the feasibility of modernizing the retirement system. To do so, we used the dynamic retention model—a tool for assessing the effect of alternative compensation proposals on active and reserve component retention—and the results of our analysis suggest that it is possible to modernize the military compensation system in a way that will increase equity and efficiency, realize savings to DoD, sustain the size and experience mix of the force, and provide tools for flexibility to force managers, while maintaining the strengths of the current system.

Deficiencies in the Current System

The retirement benefit is a central element of the military compensation system. The military retirement system is a defined-benefit plan: The amount of the benefit is defined by a formula based on basic pay, years of service (YOS), and a multiplier. Service members are vested at 20 YOS and, in the case of active component members, receive an immediate annuity upon separation. Reserve component members with 20 qualifying years generally begin receiving retired pay at age 60. The retirement system has existed in its basic form for nearly 70 years. Despite this longevity, many past studies and reviews have identified deficiencies in the current system, which raise important policy questions.

One of the most common criticisms of the current retirement system made by observers, including past commissions and military leaders, is that it is inequitable because only a minority of military members qualifies for retirement benefits—roughly 34 percent of officers and 14 percent of the enlisted force. The sense of inequity is manifested by the significant benefits awaiting members reaching 20 YOS compared to zero benefits for those who do not. In addition, the system has come to differ from civilian retirement benefit plans—many more of which are defined-contribution plans with nearer-term vesting standards (full vesting after three years of employment or a graduated system with full vesting after six years). The military system, with vesting at 20 years, may be perceived as out of step with civilian employers—a disparity, if not an outright inequity. Yet despite these perceptions, the system has brought cer-

tain advantages to the military by stabilizing the retention of mid-career personnel, who bring considerable training, experience, and leadership and comprise the pool of candidates for top leadership positions.

A second criticism of the military compensation system is that it is inefficient because it places too much compensation in the form of deferred payments, despite the fact that the typical service member is young and has a preference for current over deferred compensation. As a result, compensation costs are higher than necessary. But there are limits to this argument, because one objective of military retirement benefits is to provide old-age income, and having an explicit retirement benefit system ensures that money will be saved for retirement. This mechanism would be weakened if all compensation were paid as current compensation. *Given these competing perspectives, can equity and efficiency be increased without abandoning the benefits of vesting at 20 YOS?*

Two other objectives of the military retirement benefit system are to provide funds for a successful transition from the military to a civilian career and to provide additional income during the second career. Past study groups recognized the merit of support for the transition from military to civilian life, and this objective remains as relevant as ever. But the case for second-career benefits may have weakened as longer life spans and improvements in health care have lengthened the span of work life for many individuals. *To address these inefficiencies, how much deferred compensation should be brought forward as current compensation while protecting adequate old-age income, transition income, and, perhaps to a lesser extent, second-career income?*

The military compensation system is also viewed as inflexible because the vesting point at 20 YOS and immediately available retirement benefits induce similar career lengths in all occupational specialties. However, optimal career length may well differ by occupational specialty when considering training costs, the value of on-the-job experience, and the value of specific knowledge about plans, equipment, tactics, policies, and regulations. Yet the current system significantly limits such flexibility. *Is it possible to not only conserve the stability and predictability in retention achieved under the current system but also provide the means to allow career lengths to differ across occupations and, if desired, within an occupation over time?*

A Modernization Proposal

As described previously, the current military retirement system is a defined-benefit plan. At the other end of the spectrum, and popular in the civilian sector, is the defined-contribution plan, under which a percentage of earnings is paid on a regular basis into an investment fund during the working life of a future retiree and then paid out at retirement age in a lump sum or an annuity. In 2011, the Defense Business Board proposed shifting the military retirement system to a defined-contribution plan, but our analysis suggests that this proposal could not maintain the size and experience mix of the current force without additional compensation changes.

There are many variations in how defined-benefit or defined-contribution plans can be constructed. One alternative is to develop a hybrid plan that would combine characteristics of each—an approach recommended by numerous prior studies, the most recent of which was the Tenth Quadrennial Review of Military Compensation. There are many ways to formulate a hybrid system, depending on its goals—whether flexibility, cost savings, equity, or a balance among these or other factors. This study supported the DoD working group with quantitative research by evaluating the many different hybrid systems it chose to consider.

The options we evaluated for the working group kept a substantial portion of the compensation as deferred compensation in a defined-benefit plan, with vesting at 20 YOS, but added a defined-contribution element that vests earlier, after 6 YOS, and begins payout in old age. A portion of deferred compensation is brought forward in the form of continuation and transition pays, which in the analysis conducted for this study were set to achieve the size and experience mix of the current force. But the overall system has sufficient flexibility that these pays could be set to achieve a different force structure, if desired. The options also included a streamlined disability retirement benefit that better compensates for the value of a lost career as well as a restructured Survivor Benefit Program that allows a retiree to choose the level of coverage.

Our analysis shows that a hybrid system is feasible—addressing criticisms of the current system while maintaining key advantages. The defined-benefit element is advantageous to the member in that it provides a predictable source of income for old age and a benefit that is available immediately upon separation that eases the transition from military service as members embark on a second career. A defined-contribution element has the advantage of being portable, and it provides individual choice and flexibility regarding how plan funds are invested. Earlier vesting of either or both of the defined-benefit and defined-contribution plans can *improve equity* by increasing the likelihood that a service member will become vested. As a result, more members will leave military service with some retirement benefit, not just those who stay for a 20-year career.

A hybrid plan can also *increase efficiency* and accommodate the services' needs for a *flexible* force management tool. Depending on how retired pay is computed in the defined-benefit element, on how retirement eligibility criteria are defined, and on when payouts are made, a hybrid system can be designed to induce members to stay until certain career points and then induce them to leave when desired. Moreover, targeting current compensation can help shape career retention profiles within occupational specialties.

At the same time, such a system can produce efficiencies, resulting in overall savings for DoD and the Treasury over the long term. Less deferred compensation and more current compensation can reduce costs while sustaining retention, even while taking into consideration the increased costs associated with reforming disability compensation and the survivor benefit. Our analysis first assumed that current members of the force would be grandfathered into the existing system, which means that the process of transitioning to a new system could take a generation, as grandfathered members leave the military and collect benefits for the remainder of their life. But the analysis also considered an option allowing current members to participate in the hybrid plan if they chose to do so, and found that doing so accelerates the transition process, with savings occurring sooner.

Finally, and perhaps most important, our analysis indicates that a hybrid plan is able to create a steady-state force level and experience mix equivalent to the current force despite changes in the timing and amount of compensation and early vesting in the defined-contribution plan. The system can be structured so that service members are equally willing to stay in service as under the current system.

Contents

Preface	iii
Policy Overview	v
Figures	xiii
Tables	xvii
Summary	xix
Acknowledgments	xxxv
Abbreviations	xxxvii
CHAPTER ONE	
Introduction	1
Background: Why Consider Reform Now?	1
Department of Defense Working Group on Military Compensation	2
RAND Support to the Department of Defense Working Group	4
Organization of This Report	4
CHAPTER TWO	
Background on Retirement Reform	5
Studies Preceding the Defense Manpower Commission (1947–1974)	6
Defense Manpower Commission (1976)	7
President’s Commission on Military Compensation (1978)	8
Fifth Quadrennial Review of Military Compensation (1984)	9
Sixth Quadrennial Review of Military Compensation (1988)	10
Defense Advisory Committee on Military Compensation (2006)	11
Tenth Quadrennial Review of Military Compensation (2008)	12
Eleventh Quadrennial Review of Military Compensation (2012)	13
Conclusion	14
CHAPTER THREE	
A Brief Description of the Dynamic Retention Model	15
The Decision Model	15
Basing the Model on Actual Retention Data	17
Policy Simulation Capability	18
Conclusion	20

CHAPTER FOUR

Alternatives Considered by the Department of Defense Working Group 21

Roles of the Military Retirement System..... 21

The Defense Business Board Proposal 22

The 10-15-55 Plan..... 26

Hybrid Alternatives Considered..... 29

 Defined-Benefit Alternatives 30

 Defined-Contribution Elements Considered 34

Reserve Compensation Alternatives 36

CHAPTER FIVE

Retirement Reform Design Concepts and Steady-State Results 41

Two Design Concepts for a Hybrid Retirement System..... 41

 Defined-Benefit Plan 41

 Defined-Contribution Plan 42

 Supplemental Pays: Increases in Current Cash Compensation..... 42

 Disability Retirement and Survivor Benefit Plan 43

Steady-State Results..... 43

AC Retention and RC Participation 44

 Enlisted Personnel 44

 Officers..... 59

Continuation and Transition Pay Multipliers 70

Cost and Cost Savings..... 71

Notional Payouts..... 72

Payouts for a Military Career of a Given Length..... 74

Conclusion 78

CHAPTER SIX

Transition Results on Retirement Reform Concepts..... 79

“Grandfathering” Implementation Strategy 80

 Cost Savings and Changes in Outlays..... 82

Opt-In Implementation Strategy..... 93

 Percentage of Members Who Opt In..... 94

 Time Pattern of Costs When Members Can Opt In 97

 Time Pattern of Treasury Outlays When Members Can Opt In 97

Transition Period for the Reserve Component 116

Summary..... 118

CHAPTER SEVEN

Reforming DoD Disability Compensation 121

The Current DoD Disability Compensation System 123

 VA Disability Compensation 123

 DoD Disability Severance 124

 DoD Disability Retirement..... 125

Possible DoD Disability Compensation Reforms..... 127

 A Disability Reform Concept: DoD Determines Only Fitness to Serve 127

A Specific DoD Disability Compensation Reform Proposal 129

Net DoD Disability Retirement Compensation Under the Disability Proposal and the
 Current and Alternative Retirement Benefit Systems..... 130

Monetary Value of the Loss of One’s Military Career..... 131

Current and Proposed Compensation Compared with the Monetary Value of the Loss of
 One’s Military Career 139

Cost of the Proposal 140

Related Issues 141

 Would Involuntary Separation Pay Be an Adequate Alternative? 142

 Does VA Disability Compensation Replace Lost Civilian Earnings of Disability Retirees?..... 142

Conclusion 144

CHAPTER EIGHT

Closing Thoughts 149

Deficiencies in the Compensation System 149

Past Studies and Reviews Recommend a Hybrid Approach 150

Hybrid Options We Analyzed Proved Feasible and Efficient..... 151

The Options Improved Equity and Added Potential Flexibility..... 152

Both Concepts Achieve Cost Savings..... 152

Costs Decrease Faster If Members Can Opt In to the New System 153

The Proposed Reform in DoD Disability Retirement Benefit Is Fairer and Simpler 153

In Conclusion..... 154

APPENDIXES

A. Preliminary Results..... 155

B. Steady-State Retention Results for the Navy, Air Force, and Marine Corps..... 157

C. Additional Results for the Transition Period 187

**D. Change in Net DoD Disability Retirement Benefit Under Proposed Reform
 Versus Current System** 205

E. Estimated Coefficients for Dynamic Retention Model 215

References 221

Figures

S.1.	Active Component Army Enlisted Force Profile Under Two Retirement Concepts.....	xxiv
S.2.	Reserve Component Army Enlisted Force Profile for Members with Prior Active Component Service Under Two Retirement Concepts.....	xxv
S.3.	DoD Cost Savings Speed Up When Current Members Opt In, Concept I.....	xxvii
S.4.	DoD Cost Savings Speed Up When Current Members Opt In, Concept II.....	xxviii
S.5.	Savings to the Treasury Speed Up When Current Members Opt In, Concept I.....	xxx
S.6.	Savings to the Treasury Speed Up When Current Members Opt In, Concept II.....	xxxi
S.7.	Disability Proposal Increases Disability Compensation.....	xxxiii
4.1.	Simulated Steady-State Effect of DBB Proposal on Army AC Enlisted Retention.....	24
4.2.	Simulated Steady-State Effect of DBB Proposal on Army AC Officer Retention.....	24
4.3.	Simulated Steady-State Effect of DBB-Plus Proposal on Army AC Enlisted Retention.....	26
4.4.	Simulated Steady-State Effect of 10-15-55 Proposal on Army AC Enlisted Retention.....	27
4.5.	Simulated Steady-State Effect of 10-15-55 Proposal on Army RC Enlisted Participation Among Those with Prior AC Service.....	28
4.6.	A Framework for Evaluating Retirement Alternatives.....	29
5.1a.	Army Enlisted Retention, Option A, Active Component.....	45
5.1b.	Army Enlisted Retention, Option A, Reserve Component, Prior Service.....	46
5.1c.	Army Enlisted Retention, Option A, Reserve Component, Non-Prior Service.....	47
5.2a.	Army Enlisted Retention, Option B, Active Component.....	48
5.2b.	Army Enlisted Retention, Option B, Reserve Component, Prior Service.....	49
5.2c.	Army Enlisted Retention, Option B, Reserve Component, Non-Prior Service.....	50
5.3a.	Army Enlisted Retention, Option C, Active Component.....	51
5.3b.	Army Enlisted Retention, Option C, Reserve Component, Prior Service.....	52
5.3c.	Army Enlisted Retention, Option C, Reserve Component, Non-Prior Service.....	53
5.4a.	Army Enlisted Retention, Option D, Active Component.....	54
5.4b.	Army Enlisted Retention, Option D, Reserve Component, Prior Service.....	55
5.4c.	Army Enlisted Retention, Option D, Reserve Component, Non-Prior Service.....	56
5.5a.	Army Officer Retention, Option A, Active Component.....	60
5.5b.	Army Officer Retention, Option A, Reserve Component, Prior Service.....	61
5.6a.	Army Officer Retention, Option B, Active Component.....	62
5.6b.	Army Officer Retention, Option B, Reserve Component, Prior Service.....	63
5.7a.	Army Officer Retention, Option C, Active Component.....	64
5.7b.	Army Officer Retention, Option C, Reserve Component, Prior Service.....	65
5.8a.	Army Officer Retention, Option D, Active Component.....	66
5.8b.	Army Officer Retention, Option D, Reserve Component, Prior Service.....	67
5.9.	Payout by Concept: Active Component.....	73

5.10.	Payout by Concept: Reserve Component	74
6.1.	Simulated Army AC Enlisted Retention in Transition to Steady State with Grandfathered Members (No Opt-In Feature), Option C, Case 2	80
6.2.	Simulated Army AC Enlisted Retention of Grandfathered Members, Option C, Case 2	81
6.3.	Simulated Army AC Enlisted Retention of Members Under the New System, Option C, Case 2	81
6.4a.	DoD and Treasury AC Personnel Cost Change for Option A in the Transition Phase with Grandfathered Members and No Opt-In Feature	84
6.4b.	DoD and Treasury AC Personnel Cost Change for Option B in the Transition Phase with Grandfathered Members and No Opt-In Feature	85
6.4c.	DoD and Treasury AC Personnel Cost Change for Option C in the Transition Phase with Grandfathered Members and No Opt-In Feature	86
6.4d.	DoD and Treasury AC Personnel Cost Change for Option D in the Transition Phase with Grandfathered Members and No Opt-In Feature	87
6.5a.	Change in Treasury Outlays for AC Personnel for Option A in the Transition Phase with Grandfathered Members and No Opt-In Feature.....	88
6.5b.	Change in Treasury Outlays for AC Personnel for Option B in the Transition Phase with Grandfathered Members and No Opt-In Feature.....	89
6.5c.	Change in Treasury Outlays for AC Personnel for Option C in the Transition Phase with Grandfathered Members and No Opt-In Feature.....	90
6.5d.	Change in Treasury Outlays for AC Personnel for Option D in the Transition Phase with Grandfathered Members and No Opt-In Feature.....	91
6.6.	Change in Treasury Outlays for AC Personnel by Element of Outlay for Option C, Case 2, in the Transition Phase with Grandfathered Members and No Opt-In Feature	92
6.7a.	Percentage of Army Enlisted Personnel Who Opt In Under Option A.....	95
6.7b.	Percentage of Army Enlisted Personnel Who Opt In Under Option C.....	96
6.8a.	Percentage of Army Officers Who Opt In Under Option A	98
6.8b.	Percentage of Army Officers Who Opt In Under Option C	99
6.9a.	Change in DoD and Treasury AC Personnel Costs for Option A, Case 3, in the Transition Phase with Grandfathered Members and No Opt-In Feature Versus with Opt-In Feature	100
6.9b.	Change in DoD and Treasury AC Personnel Costs for Option A, Case 5, in the Transition Phase with Grandfathered Members and No Opt-In Feature Versus with Opt-In Feature	101
6.9c.	Change in DoD and Treasury AC Personnel Costs for Option B, Case 3, in the Transition Phase with Grandfathered Members and No Opt-In Feature Versus with Opt-In Feature	102
6.9d.	Change in DoD and Treasury AC Personnel Costs for Option B, Case 5, in the Transition Phase with Grandfathered Members and No Opt-In Feature Versus with Opt-In Feature	103
6.9e.	Change in DoD and Treasury AC Personnel Costs for Option C, Case 2, in the Transition Phase with Grandfathered Members and No Opt-In Feature Versus with Opt-In Feature	104
6.9f.	Change in DoD and Treasury AC Personnel Costs for Option C, Case 4, in the Transition Phase with Grandfathered Members and No Opt-In Feature Versus with Opt-In Feature	105

6.9g.	Change in DoD and Treasury AC Personnel Costs for Option D, Case 2, in the Transition Phase with Grandfathered Members and No Opt-In Feature Versus with Opt-In Feature	106
6.9h.	Change in DoD and Treasury AC Personnel Costs for Option D, Case 4, in the Transition Phase with Grandfathered Members and No Opt-In Feature Versus with Opt-In Feature	107
6.10a.	Change in Treasury Outlays for AC Personnel for Option A, Case 3, in the Transition Phase with Grandfathered Members and No Opt-In Feature Versus with Opt-In Feature	108
6.10b.	Change in Treasury Outlays for AC Personnel for Option A, Case 5, in the Transition Phase with Grandfathered Members and No Opt-In Feature Versus with Opt-In Feature	109
6.10c.	Change in Treasury Outlays for AC Personnel for Option B, Case 3, in the Transition Phase with Grandfathered Members and No Opt-In Feature Versus with Opt-In Feature	110
6.10d.	Change in Treasury Outlays for AC Personnel for Option B, Case 5, in the Transition Phase with Grandfathered Members and No Opt-In Feature Versus with Opt-In Feature	111
6.10e.	Change in Treasury Outlays for AC Personnel for Option C, Case 2, in the Transition Phase with Grandfathered Members and No Opt-In Feature Versus with Opt-In Feature	112
6.10f.	Change in Treasury Outlays for AC Personnel for Option C, Case 4, in the Transition Phase with Grandfathered Members and No Opt-In Feature Versus with Opt-In Feature	113
6.10g.	Change in Treasury Outlays for AC Personnel for Option D, Case 2, in the Transition Phase with Grandfathered Members and No Opt-In Feature Versus with Opt-In Feature	114
6.10h.	Change in Treasury Outlays for AC Personnel for Option D, Case 4, in the Transition Phase with Grandfathered Members and No Opt-In Feature Versus with Opt-In Feature	115
7.1.	Value of Active Component and Civilian-Only Careers at Each Year of Service	138
7.2.	Expected Value of Active Career Loss, by Service	138
7.3.	Average Net DoD Disability Compensation and Average Expected Value of Active Career Loss	139
7.4.	Involuntary Separation Pay and the Value of Career Loss	142
B.1.	Navy Enlisted Retention, Option A	158
B.2.	Navy Enlisted Retention, Option B	159
B.3.	Navy Enlisted Retention, Option C	160
B.4.	Navy Enlisted Retention, Option D	161
B.5.	Navy Officer Retention, Option A	162
B.6.	Navy Officer Retention, Option B	163
B.7.	Navy Officer Retention, Option C	164
B.8.	Navy Officer Retention, Option D	165
B.9.	Air Force Enlisted Retention, Option A	166
B.10.	Air Force Enlisted Retention, Option B	167
B.11.	Air Force Enlisted Retention, Option C	168
B.12.	Air Force Enlisted Retention, Option D	169
B.13.	Air Force Rated Officer Retention, Option A	170
B.14.	Air Force Rated Officer Retention, Option B	171

B.15.	Air Force Rated Officer Retention, Option C	172
B.16.	Air Force Rated Officer Retention, Option D	173
B.17.	Air Force Nonrated Officer Retention, Option A	174
B.18.	Air Force Nonrated Officer Retention, Option B	175
B.19.	Air Force Nonrated Officer Retention, Option C	176
B.20.	Air Force Nonrated Officer Retention, Option D	177
B.21.	Marine Corps Enlisted Retention, Option A	178
B.22.	Marine Corps Enlisted Retention, Option B	179
B.23.	Marine Corps Enlisted Retention, Option C	180
B.24.	Marine Corps Enlisted Retention, Option D	181
B.25.	Marine Corps Officer Retention, Option A	182
B.26.	Marine Corps Officer Retention, Option B	183
B.27.	Marine Corps Officer Retention, Option C	184
B.28.	Marine Corps Officer Retention, Option D	185
C.1a.	Percentage of Army Enlisted Personnel Who Opt In Under the Concept I Alternatives	188
C.1b.	Percentage of Army Enlisted Personnel Who Opt In Under the Concept II Alternatives	189
C.2a.	Percentage of Army Officers Who Opt In Under the Concept I Alternatives.....	190
C.2b.	Percentage of Army Officers Who Opt In Under the Concept II Alternatives.....	191
C.3a.	Percentage of Navy Enlisted Personnel Who Opt In Under the Concept I Alternatives	192
C.3b.	Percentage of Navy Enlisted Personnel Who Opt In Under the Concept II Alternatives	193
C.4a.	Percentage of Navy Officers Who Opt In Under the Concept I Alternatives.....	194
C.4b.	Percentage of Navy Officers Who Opt In Under the Concept II Alternatives.....	195
C.5a.	Percentage of Air Force Enlisted Personnel Who Opt In Under the Concept I Alternatives	196
C.5b.	Percentage of Air Force Enlisted Personnel Who Opt In Under the Concept II Alternatives	197
C.6a.	Percentage of Nonrated Air Force Officers Who Opt In Under the Concept I Alternatives	198
C.6b.	Percentage of Nonrated Air Force Officers Who Opt In Under the Concept II Alternatives	199
C.7a.	Percentage of Marine Corps Enlisted Personnel Who Opt In Under the Concept I Alternatives	200
C.7b.	Percentage of Marine Corps Enlisted Personnel Who Opt In Under the Concept II Alternatives	201
C.8a.	Percentage of Marine Corps Officers Who Opt In Under the Concept I Alternatives	202
C.8b.	Percentage of Marine Corps Officers Who Opt In Under the Concept II Alternatives	203

Tables

4.1.	Defined-Benefit Retirement Alternatives Initially Considered for AC Members	31
4.2.	Summary of Analysis of Defined-Benefit Retirement Alternatives 1, 3, 5, 8, 9, 10, 11, and 12	33
4.3.	Percentage of AC Entrants Who Would Achieve Vesting	35
4.4.	Summary of Cases Considered for Extending Compensation Reform to the RC	37
4.5.	Eight Retirement Reform Alternatives	38
5.1.	Two Retirement Reform Concepts	42
5.2.	Continuation Pay Multipliers: Enlisted	57
5.3.	Continuation Pay Multipliers: Officers	68
5.4.	Transition Pay Multipliers	70
5.5.	Cost and Cost Savings	72
5.6.	Representative Payout of Benefits for Enlisted Members Leaving at Selected Years of Service.....	75
5.7.	Representative Payout of Benefits for Officers Leaving at Selected Years of Service.....	76
5.8.	Discounted Present Value of Continuation and Retirement Pays at YOS 0 for Enlisted Members Anticipating Leaving After a Fixed Term	77
5.9.	Discounted Present Value of Continuation and Retirement Pays at YOS 0 for Officers Anticipating Leaving After a Fixed Term.....	77
7.1.	Elements of the VA Disability Compensation Schedule for 2013.....	124
7.2.	Full DoD Disability Benefit Formulas for Those Dually Eligible for CRDP and CRSC.....	127
7.3.	Net DoD Disability Retirement Compensation with 0.025 Multiplier for Proposal Amount: E-4, 4 YOS, Single	132
7.4.	Net DoD Disability Retirement Compensation with 0.02 Multiplier for Proposal Amount: E-4, 4 YOS, Single	133
7.5.	Net DoD Disability Retirement Compensation with 0.025 Multiplier for Proposal Amount: O-4, 12 YOS, Spouse, with Two Children.....	134
7.6.	Net DoD Disability Retirement Compensation with 0.02 Multiplier for Proposal Amount: O-4, 12 YOS, Spouse, with Two Children.....	135
7.7.	Increment in Annual Accrual Cost from Changing from the Current to the Proposed Disability Compensation System.....	141
7.8.	Earnings Loss and VA Disability Compensation: Enlisted Veterans	145
7.9.	Earnings Loss and VA Disability Compensation: Officer Veterans	146
A.1.	Summary of Analysis of Defined-Benefit Retirement Alternatives 1, 3, 5, 8, 9, 10, 11, and 12.....	155
D.1.	Net DoD Disability Retirement Compensation with 0.025 Multiplier: E-5, 10 YOS, Spouse, with Two Children.....	206

D.2.	Net DoD Disability Retirement Compensation with 0.02 Multiplier: E-5, 10 YOS, Spouse, with Two Children.....	207
D.3.	Net DoD Disability Retirement Compensation with 0.025 Multiplier: E-7, 22 YOS, Spouse, with Two Children, One Over Age 18	208
D.4.	Net DoD Disability Retirement Compensation with 0.02 Multiplier: E-7, 22 YOS, Spouse, with Two Children, One Over Age 18	209
D.5.	Net DoD Disability Retirement Compensation with 0.025 Multiplier: O-3, 8 YOS, Single.....	210
D.6.	Net DoD Disability Retirement Compensation with 0.02 Multiplier: O-3, 8 YOS, Single.....	211
D.7.	Net DoD Disability Retirement Compensation with 0.025 Multiplier: O-6, 24 YOS, Spouse, with Two Children, One Over Age 18	212
D.8.	Net DoD Disability Retirement Compensation with 0.02 Multiplier: O-6, 24 YOS, Spouse, with Two Children, One Over Age 18	213
E.1.	Parameter Estimates and Standard Errors for Enlisted Personnel, by Service.....	216
E.2.	Transformed Parameter Estimates for Enlisted Personnel, by Service.....	217
E.3.	Parameter Estimates and Standard Errors for Officers, by Service	218
E.4.	Transformed Parameter Estimates for Officers, by Service	219

Summary

In September 2011, the Office of the Secretary of Defense convened a Department of Defense (DoD) working group (DODWG) to conduct a comprehensive review of military compensation, focusing particularly on retirement compensation but also including other potential areas for reform. The group included senior representatives from the Office of the Secretary of Defense, the military services, the Coast Guard, and the Joint Staff, as well as senior enlisted representatives and, when relevant to the deliberations, representatives from the reserve components. The group's objectives were to define and discuss possible changes to the military retirement system, taking a holistic approach that considers the entire compensation system and also including a transition plan. The work of this group is being used within the department as it develops proposals to reform and modernize the military compensation system.

Our research, conducted between September 2011 and June 2013, responds to issues raised by the DODWG regarding the form and consequences of possible reforms to military retirement. The group's interests echoed those of past studies, commissions, and reviews and were shaped by concerns including deficit reduction, force strength reductions, and fairness to service members. We drew on and extended RAND's dynamic retention model to assess the effects of a wide number of proposals on steady-state active component (AC) and reserve component (RC) retention for each service, for officers and enlisted personnel, and on cost. (By steady state, we mean 30 years after implementation, when all service members have spent their entire career under the new retirement system.) We evaluated options for implementing reforms by assessing different implementation strategies on retention, DoD costs, and Treasury outlays in the transition to the steady state (i.e., during the 30-year period before the new steady state is reached). We also evaluated different proposals for disability compensation reform. Collectively, these analyses assisted the DODWG in narrowing down the various options for reform and developing two broad reform design concepts for possible implementation.

This document summarizes the main findings of past reviews, discusses the process that led to the two design concepts, and presents the RAND analysis, focusing on results for the two design concepts.

Recent Reviews and Commissions Recommend a Hybrid Approach to Addressing Deficiencies of the Current System

The retirement benefit is a central element of the military compensation system. The military retirement system is a defined-benefit plan: The amount of the benefit is defined by a formula based on basic pay, years of service, and a multiplier. Service members are vested at 20 years of service (YOS) and, in the case of AC members, receive an immediate annuity upon separa-

tion. RC members with 20 qualifying years generally begin receiving retired pay at age 60. The retirement system has existed in its basic form for nearly 70 years.

Critiques of the retirement system began soon after World War II. The main criticisms are that the system is inflexible, inefficient, and inequitable. It is inflexible because of its one-size-fits-all nature, which produces a highly similar experience mix across military communities and occupations, despite differences in training costs and productivity and the value of experience, knowledge, and skills. Further, it induces careers that may be too short for some groups, especially officers. The system is inefficient because it defers a relatively large amount of compensation over a career into the retirement benefit despite the fact that the typical service member is young and has a preference for current over deferred compensation. Because of this preference, the military could sustain recruiting and retention while saving costs by increasing current compensation and reducing deferred compensation. Finally, the system is inequitable because the majority of military members leave the service before serving 20 years and do not qualify for retirement benefits.

The current system has advantages, however, not the least of which is that it has generally enabled the services to meet their manning requirements over the past 70 years despite tremendous changes in the military, in technology and manpower requirements, in DoD's wartime and peacetime posture, and in the civilian population and economy. The system provides a predictable and stable career force to the services and provides advantages to service members. The defined-benefit feature of the current system, backed by the federal government, is low-risk and predictable, and the immediate annuity to qualified personnel provides a transition benefit to members as they embark on their second career in the civilian world.

The DODWG sought compensation alternatives that maintained the advantages of the current system while addressing the criticisms. Recent studies, reviews, and commissions have highlighted the advantages of a hybrid plan for achieving these objectives. For example, the Defense Science Board Task Force on Human Resources Strategy (2000), the U.S. Defense Advisory Committee on Military Compensation (2006), and the Tenth Quadrennial Review of Military Compensation (DoD OSD, 2008) recommended that the current military retirement system be replaced with a hybrid system that includes a less generous defined-benefit plan, early vesting in a defined-contribution plan with DoD contributions, and higher current compensation. The details of the hybrid approach—such as when to vest, how to reduce the defined-benefit plan, and how current compensation should be increased—varied across studies. The studies generally found that a hybrid approach increased efficiency, reduced cost, increased flexibility, and increased equity.

A New Military Retirement Proposal: Two Design Concepts

The hybrid approach that emerged from past studies formed the basis of the DODWG proposal for retirement reform. But, what should be the details of the hybrid approach? The DODWG considered a wide variety of hybrid alternatives and coalesced around two design concepts, known as "Concept I" and "Concept II." Both proposed concepts include a less generous defined-benefit plan, a defined-contribution component, and higher current compensation in the form of supplemental pays. Both proposed concepts also incorporate a revised disability retirement benefit and Survivor Benefit Plan. Under both concepts, the defined-contribution,

disability, and survivor annuity are the same. The concepts differ in how the defined-benefit component is structured and in the supplemental pays.

Defined-Benefit Plan

Under both concepts, the defined-benefit plan would vest at 20 YOS, with an immediate payout for the active component upon separation. The benefit formula would be based on “high-3” annual pay, a multiplier, and years of service. Both concepts pay a lower retirement annuity than under the current system, and compensate for this reduction with supplemental pay that would be in addition to existing special and incentive pays—effectively shifting a portion of deferred compensation to current pay.

Concept I is crafted around a two-tiered retirement benefit for both the active and reserve components. Since service members can retire after 20 YOS, many members establish a second career in the civilian sector after leaving military service. The ability to start a second career was the driver for developing a two-tier benefit. The first tier provides a partial retirement benefit during the member’s normal second-career years to *both* active and reserve component members. The second tier begins when members are in their early 60s and pays full retirement benefits. A notable departure from the current system is that Concept I provides RC members with a partial benefit during the second career, whereas under the current system, RC members generally are eligible to receive benefits only upon reaching age 60.

Concept II offers a single tier of benefits for both the active and reserve components, like the current retirement system, except the multiplier would be less than the 2.5 percent used today. As under the current system, eligible RC members would not generally begin receiving benefits until age 60. Under this concept, the retirement benefit is a full benefit in all years, not a partial benefit in the years before retirees reach their early 60s.

Supplemental Pays

Both concepts would offer two types of supplemental pays—transition pay and continuation pay—though the amount of the pays would differ under the two concepts. The purpose of these pays is to sustain the size and experience mix of the force in the context of the decrease in the defined benefit. While not presuming that the future force must replicate the current one, the DODWG felt it important for any new system to be capable of producing the current force. The transition pay would be a multiple of final annual basic pay and would be offered upon retirement to AC members with at least 20 YOS. To protect the funding for transition pay, the multiplier is set to be the same across services and across enlisted and officer personnel, though this feature could inhibit the role of transition pay in helping the services reshape the force size and experience mix, if that is desired. Funding for transition pay is rolled into the retirement accrual charge. The continuation pay would be a multiple of monthly basic pay and targeted to specific years of service to sustain retention. Continuation pay would vary by service, by whether personnel are officers or enlisted, between active and reserve component, and possibly by occupational area. In the analysis conducted during this review, the pay was targeted to enlisted personnel at 12 YOS and officers at 16 YOS.

Defined-Contribution Plan

Both concepts include a defined-contribution plan, specifically the Thrift Savings Plan (TSP). DoD would be required to make automatic contributions on behalf of military members equal to a percentage of their annual basic pay. Members would vest after 6 YOS, and benefits could

pay out as early as age 59½. Members could manage their TSP accounts and allocate their funds across the various investment options offered by the Federal Thrift Savings Board. This element of the new system means that members who leave the military after 6 YOS would leave with vesting in some retirement benefit—a significant change from the current system.

Disability Retirement Benefit

Both concepts include a streamlined disability retirement benefit that is both simpler and fairer than the current system's. Under the proposed system, the amount of the disability benefit would be based solely on years of service, not also on the DoD disability rating, as under the current system. However, qualification would depend on the disability rating. Members deemed unfit and with a DoD disability rating of at least 30 percent, or with at least 12 YOS, qualify for the benefit. The benefit equals the highest three years of basic pay times years of service, times a multiplier. The multiplier used under Concept I is the multiplier for the full retirement benefit, not the partial benefit. Importantly, the DoD disability benefit would no longer be offset for receipt of Veterans Affairs (VA) disability compensation, as is the case under the current system, and the defined-contribution element of the plan would vest immediately. Eliminating the offset also eliminates the need for combat-related special compensation and concurrent retirement and disability pays from DoD that are used today to offset the VA offset.

An important finding of our analysis is that the current DoD disability benefit does not fully compensate for the expected value of a lost military career for either enlisted personnel or officers. The value of a lost career depends on both financial and nonfinancial factors, including the length of a military career, whether a member stays in the military long enough to qualify for retirement benefits, whether an individual plans to retire from the military and enter a civilian career, and various similar concerns. The value of being able to continue a military career changes over the course of a member's career, increasing the closer a member gets to 20 YOS and retirement eligibility, and also depends on whether the member is an officer or enlisted personnel. The proposed disability benefit attempts to close the gap for a greater number of disabled service members.

Survivor Benefit Program

Both concepts would also include a streamlined survivor benefit program. Under the proposed system, a retiree could choose the level of coverage, and the revised program would eliminate the current offset for VA Dependency and Indemnity Compensation. RAND did not analyze the alternative, though the cost savings estimates included the change in cost associated with the new Survivor Benefit Plan.

Assessing the Two Design Concepts

We used the dynamic retention model (DRM) to assess the eight alternatives forming the basis for the two design concepts. The DRM is a model of individual retention decisions over an active and reserve career—decisions that are made based on an individual's assessment of the value of staying or leaving the military. Using the model, we are able to analyze how individual retention decisions will change under different compensation policies—in this case, different retirement systems—and estimate the effects on AC retention, RC participation, and person-

nel costs. We also use the model to analyze alternative implementation strategies during the transition phase. The main findings of the analysis are as follows.

Both Design Concepts Are Feasible and More Efficient Than the Current System

Our analyses of the effects of the two concepts show that both concepts can sustain the size and experience mix of the AC both in the steady state and in the transition period. Steady state occurs when all service members are receiving retirement benefits under the new retirement system, while the transition phase is the period between the start of the new policy and the steady state. Indeed, the continuation pay multipliers are determined within the model to achieve this outcome—though they can be adjusted if a different force size and experience mix is desired. Figure S.1 illustrates the steady-state effects on retention, using the Army enlisted force as an example. Only minor differences occur between the retention profile under the current compensation system and the new system, whether Concept I or Concept II. In both cases, current compensation and existing special and incentive pays and allowances remain at baseline levels—only elements of the retirement system change.

The concepts differ, however, in their effect on RC participation by prior active service members. This occurs as a result of the difference in the structure of the defined-benefit element of the program, as shown in Figure S.2. Concept I would provide an immediate partial annuity to eligible RC members during the second career. The immediate benefit would lead to higher participation among reserve members in the mid-career years prior to 20 YOS than is the case under the current system (Figure S.2, top panel) because of the attraction of receiving a partial annuity immediately versus waiting to age 60 for a full annuity, as is currently the case. After 20 YOS, participation would be lower than under the current system, as more members leave to claim the partial annuity in the second career. Supplemental pay in the form of continuation pay for reservists does not fully offset the change in experience mix that would occur under Concept I. In contrast, Concept II maintains the current reserve retirement structure in the defined-benefit element and generally begins payout at age 60 (Figure S.2, bottom panel). Consequently, under Concept II, the size and experience mix of the RC force is sustained with an appropriate level of continuation pay.

Both Concepts Improve Equity

Both concepts include a defined-contribution plan that vests after 6 YOS, which is well before the 20-YOS vesting point of the current system. Consequently, a substantially larger fraction of the force will have a retirement benefit as a result of their military service. This feature addresses long-term concerns about the equity of the current system expressed by some military leaders and past studies and commissions and the fact that most members who serve honorably leave with no military retirement benefits.

Both Concepts Add the Potential for Flexibility

Supplemental pays are a key element of the hybrid approach adopted by the DODWG. In our analysis, continuation and transition pay multipliers were the same across occupations and were set to sustain the size and experience mix of the current force. But supplemental pays could be adjusted to reshape the size and experience mix should that be desired. Specifically, with legislative authority, the services could offer continuation pay at different rates by occupation and thereby vary the career retention profiles. That is, continuation pay could be used to manage forces more flexibly.

Figure S.1
Active Component Army Enlisted Force Profile Under Two Retirement Concepts

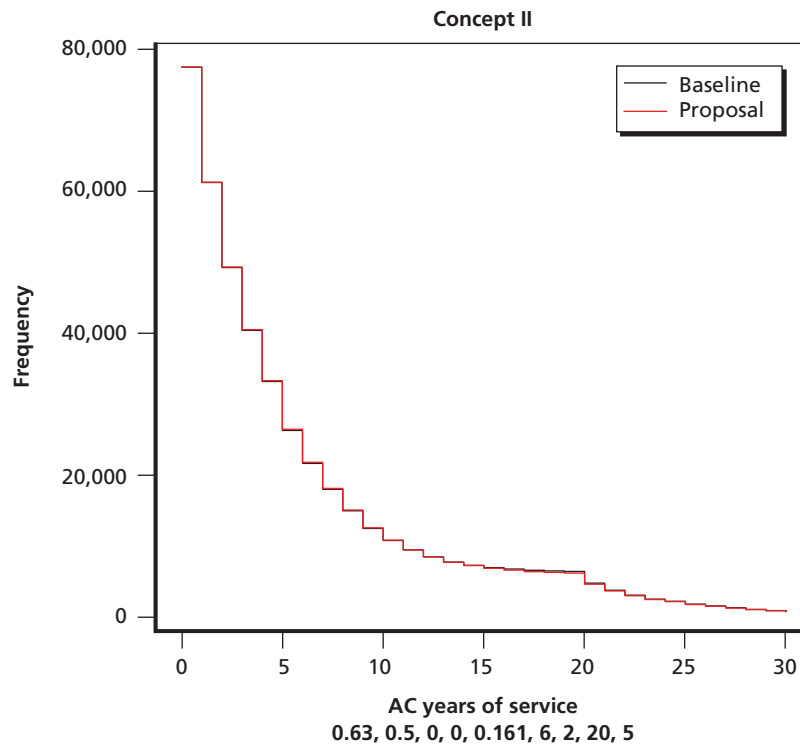
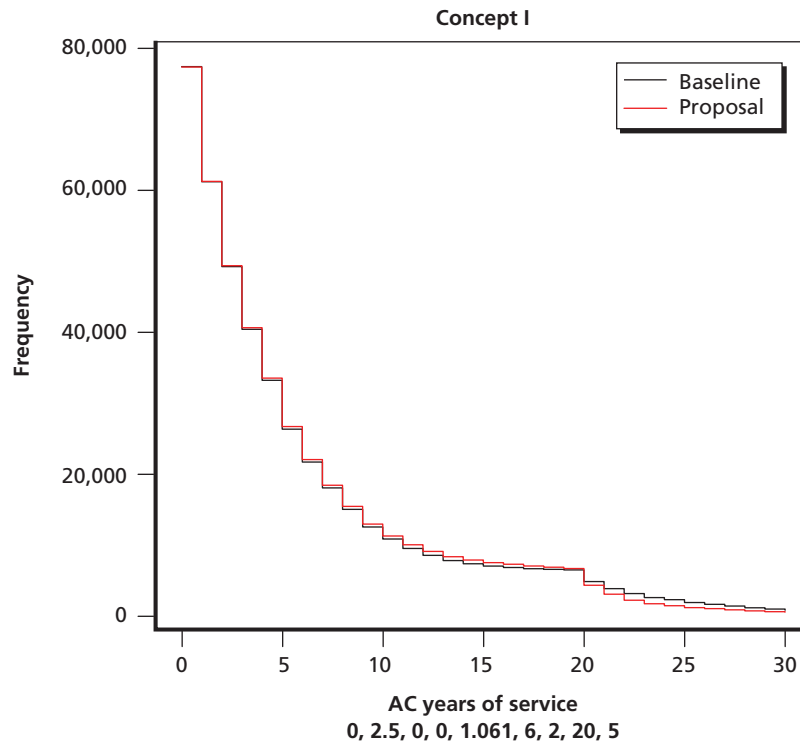
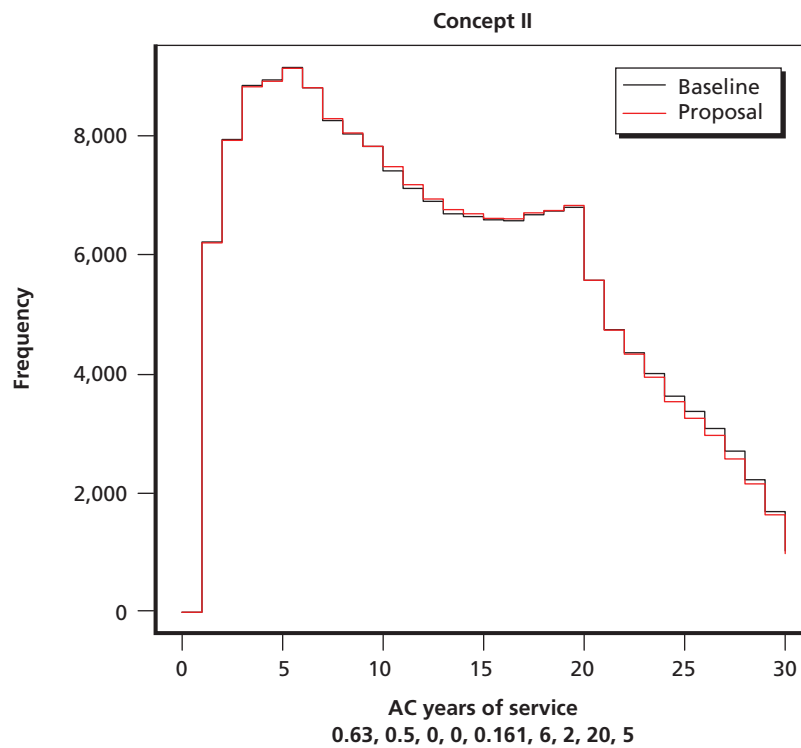
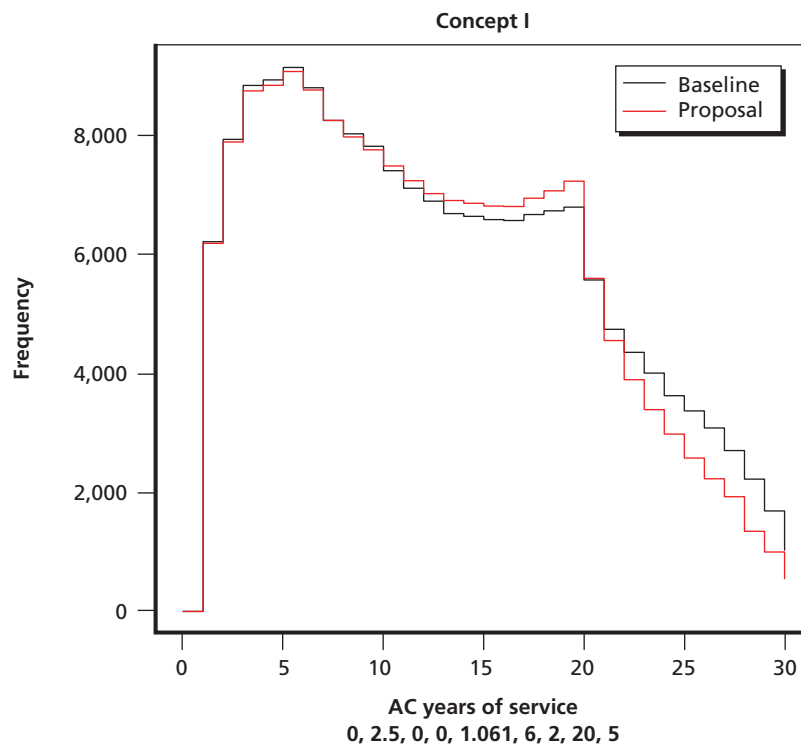


Figure S.2
Reserve Component Army Enlisted Force Profile for Members with Prior
Active Component Service Under Two Retirement Concepts



As mentioned, to protect the funding for the transition pay, the multiplier was set at a common level for all active duty personnel, and the funding was rolled into the DoD retirement accrual charge. The services might be able to add to the transition pay or other incentive pays with their own funds if they wanted to change retention after 20 YOS, perhaps lengthening retention in occupations for which the loss of senior expertise and experience could decrease capability.

Both Concepts Achieve Savings

Both concepts would achieve cost savings to DoD. Although costs increase with the introduction of continuation and transition pay and the defined-contribution plan, both concepts decrease the defined-benefit element of the retirement package, and thus the accrual charge paid by DoD,¹ with the net effect being overall savings. The amount of the cost savings would depend on how much deferred benefits are decreased and how much pay is moved forward into current compensation. The cost savings are greater under each concept when the retirement multiplier is smaller and the transition pay multiplier is larger. Depending on the specific alternative considered under each concept and specific changes to the RC pay system considered, the steady-state cost savings to the military services would range from \$1.8 to \$4.4 billion per year.

Costs Decrease Faster If Members Can Opt In to the New System

How quickly cost savings are realized depends on how the transition to the new system is implemented. The legislation establishing the Commission on Military Compensation and Retirement Modernization directed that all serving members be fully grandfathered. Under grandfathering, the cost savings could emerge only as new personnel covered by the new (lower-cost) system enter the force and existing personnel covered by the current (higher-cost) system leave the military. However, if currently serving members are permitted to opt in to the new system—as allowed by the statute—savings to DoD would emerge more quickly. The more existing members who opt in, the faster the full cost savings of the new system would be realized.

Figures S.3 and S.4 illustrate the change in DoD personnel costs for Concepts I and II, respectively, when current members do not opt in (top panel) and when they do (bottom panel). If all current members are grandfathered into the existing retirement system (no opt-in), in the first year after the policy change, costs drop by about \$260 million under Concept I and by \$270 million under Concept II. Cost savings fall for several years, then stop declining

¹ The current military retirement system is funded by an entry-age normal cost method. The entry-age normal cost percentage, or accrual charge, is the percentage of basic pay that must be contributed over the entire career of a typical group of new entrants to pay for all future retirement and survivor benefits for that group. The accrual charge is applied to the basic pay bill for the entire force. In contrast to a pay-as-you-go method, this approach means that future retirement costs are incorporated into the computations of the current personnel costs of the force, but are not current outlays. Under the current retirement system, the accrual charge that is applicable to the federal government (including both DoD and the Treasury) includes the liability associated with the current defined-benefit plan and is equal to 43.3 percent. Under the new system, the accrual charge would include all the liabilities associated with the revised defined-benefit component of compensation, the Thrift Savings Plan contributions, and the transition payment. Although the transition payment increases current compensation, it would be funded through the accrual charge. Because of the entry-age normal cost method, costs to DoD and the Treasury differ from outlays. Annual DoD (and Treasury) costs include the accrual charge associated with future retirement liabilities of currently serving members. Retirement outlays occur when the Treasury pays out retirement annuities to qualified military retirees.

Figure S.3
DoD Cost Savings Speed Up When Current Members Opt In, Concept I

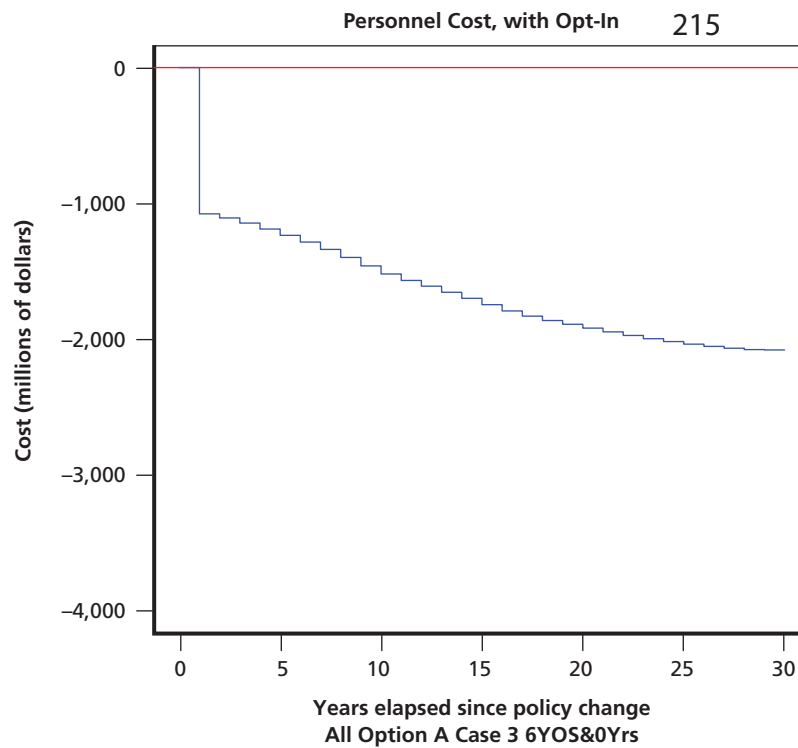
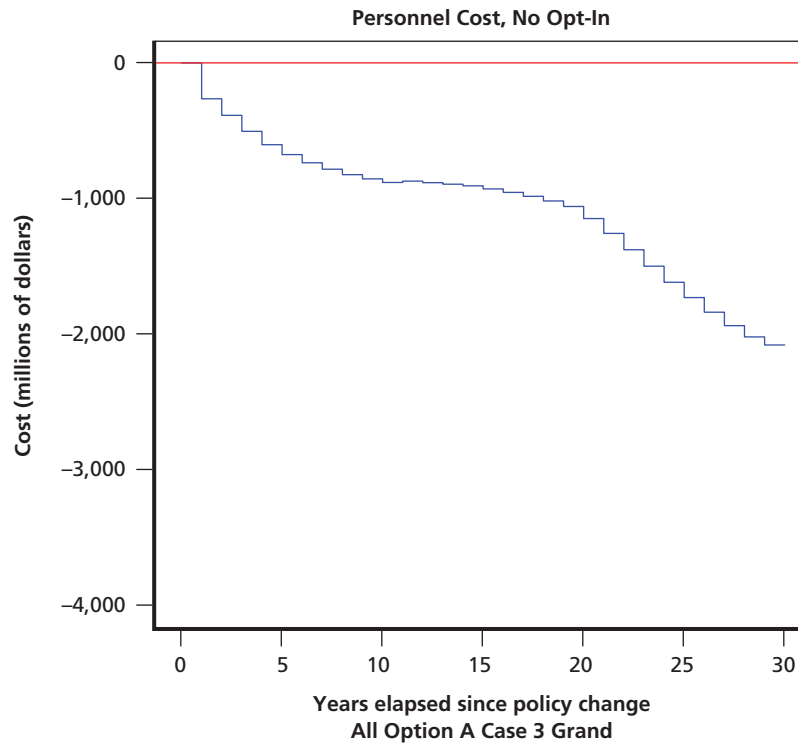
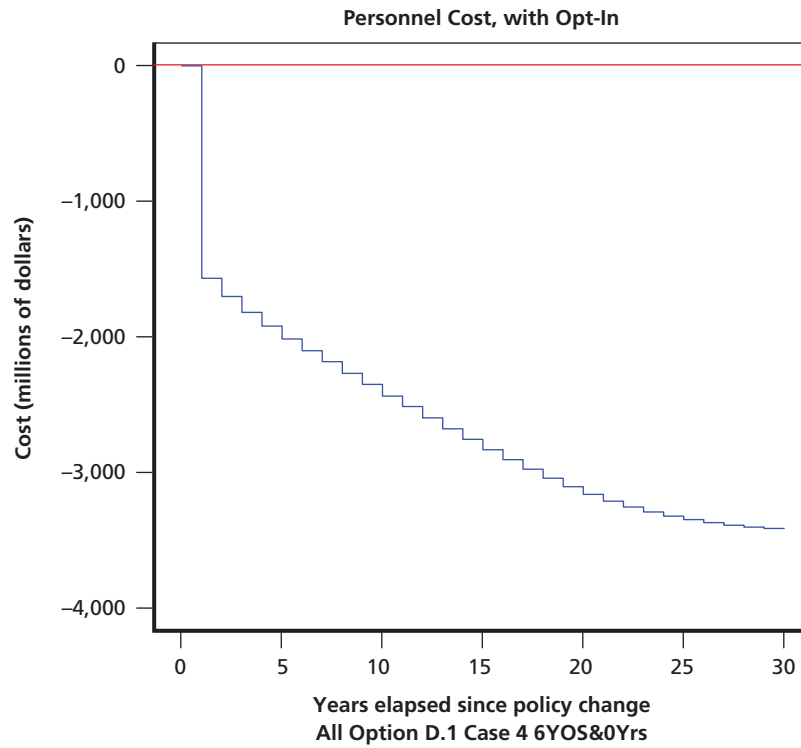
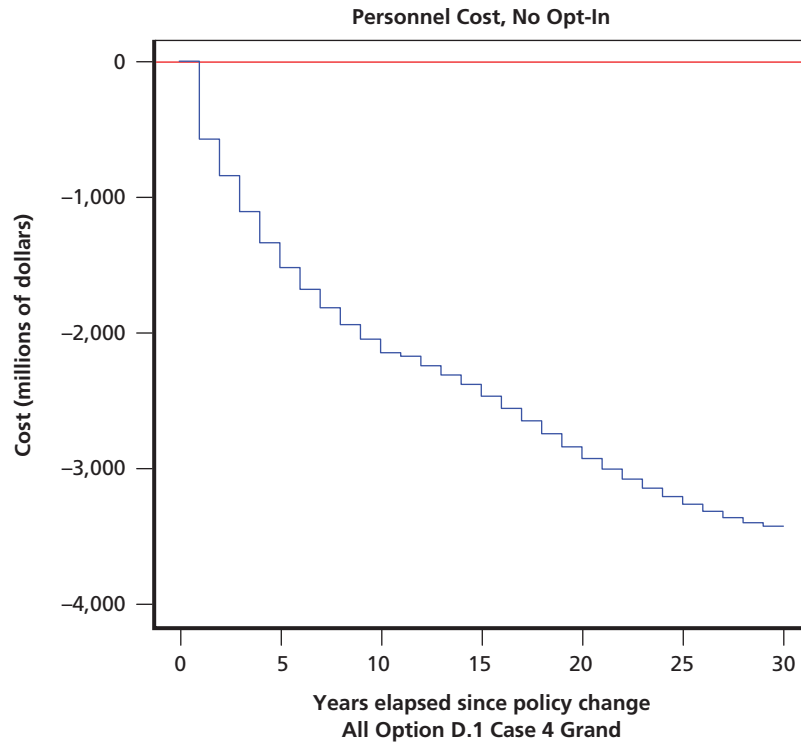


Figure S.4
DoD Cost Savings Speed Up When Current Members Opt In, Concept II



12 years after the policy change as expenditures for continuation pay begin, then costs resume declining a few years later as the number of personnel under the new system continues to grow.

When currently serving members are permitted to opt in to the new system, cost savings emerge more rapidly. For example, cost savings one year after the policy change are \$1.1 billion for Concept I, far more than the \$260 million when there is no option for current members to opt in. Costs drop by roughly \$710 million under Concept II when members have the opt-in choice, in contrast to \$270 million in the first year if they do not. The amount of the drop and how quickly full cost savings are attained depend on the extent to which currently serving members choose to opt in. Our analysis finds that junior members are more likely to opt in than senior members and that opt-in rates are generally larger under Concept I than II, though there is considerable variation across services and between enlisted personnel and officers.

Government Outlays Initially Increase, Even Though Costs Fall

Because of the entry-age normal method of funding the military retirement system (see footnote 1), costs to DoD and to the Treasury differ from outlays for the Treasury. Outlays from the Treasury occur when the Treasury pays out retirement benefits to military retirees. We find that outlays from the Treasury would also change under both concepts, ultimately leading to long-run savings.

Figures S.5 and S.6 illustrate how Treasury payments change for Concepts I and II. In each figure, the top panel shows the change in outlays when members are grandfathered into the old system, and the bottom panel shows the change when grandfathered members are given the option to enter the proposed retirement system. Regardless of whether members have the opt-in choice and regardless of concept design, outlays are initially projected to increase because of contributions made to the TSP on behalf of service members. Outlays also increase when continuation payments and transition payments are made. Thus, in the initial years of the transition period, outlays increase, despite the decrease in costs shown in Figures S.3 and S.4. The initial increase in outlays is larger under Concept I than II because the supplemental pays are larger under Concept I than Concept II. However, total outlays decline when members under the new system begin to retire because of the lower retirement annuity. The decrease is steeper for Concept I than II because of the smaller second-tier partial annuity during the second career under Concept I.

As with savings to DoD, the pattern of outlays is affected by whether existing service members can opt in to the new system. When existing members can opt in, initial outlays increase by more, as existing members who opt in receive continuation and transition pay. Equally notable, the subsequent drop in outlays would occur sooner.

Comparison of the top and bottom panels in Figures S.5 and S.6 illustrates how the Treasury outlay changes under Concepts I and II differ when members are grandfathered in the old system versus when they are given the option to enter the proposed retirement system. In the absence of the opt-in feature (top panel), outlays increase when DoD contributes to the TSP on behalf of vested members. Outlays further increase 12 years after the plan's inception, when members reach 12 YOS and begin receiving continuation pay. After 20 years, outlays increase because members receive transition pay, but they also decrease because retirees receive a lower retirement annuity compared with the current system. As time passes, those members under the more costly existing retirement system flow out of service and eventually stop receiving annuities, and they are replaced by members under the new, less costly system. As shown in the figure, outlays continue to decline until the new steady state is reached.

Figure S.5
Savings to the Treasury Speed Up When Current Members Opt In,
Concept I

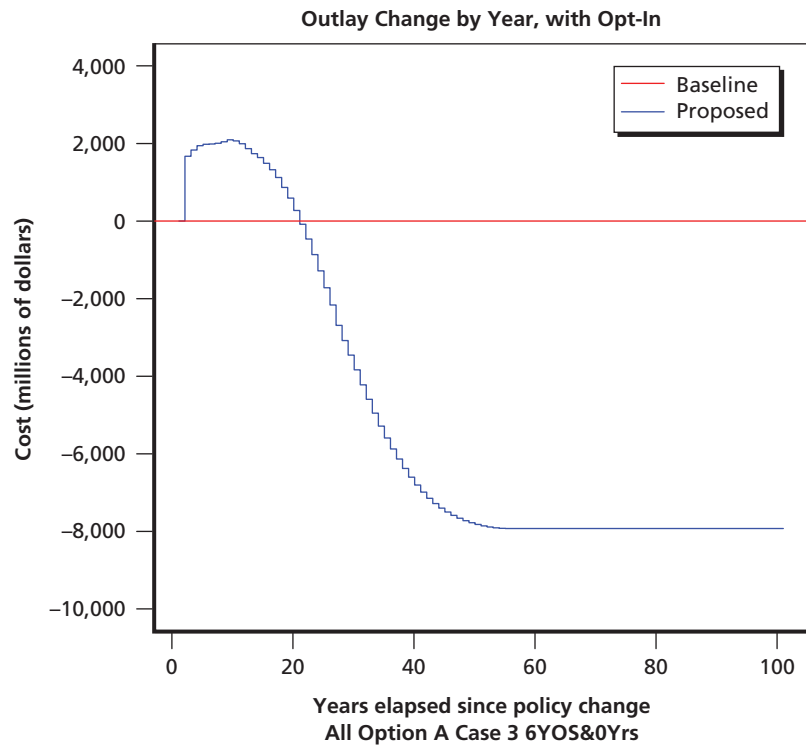
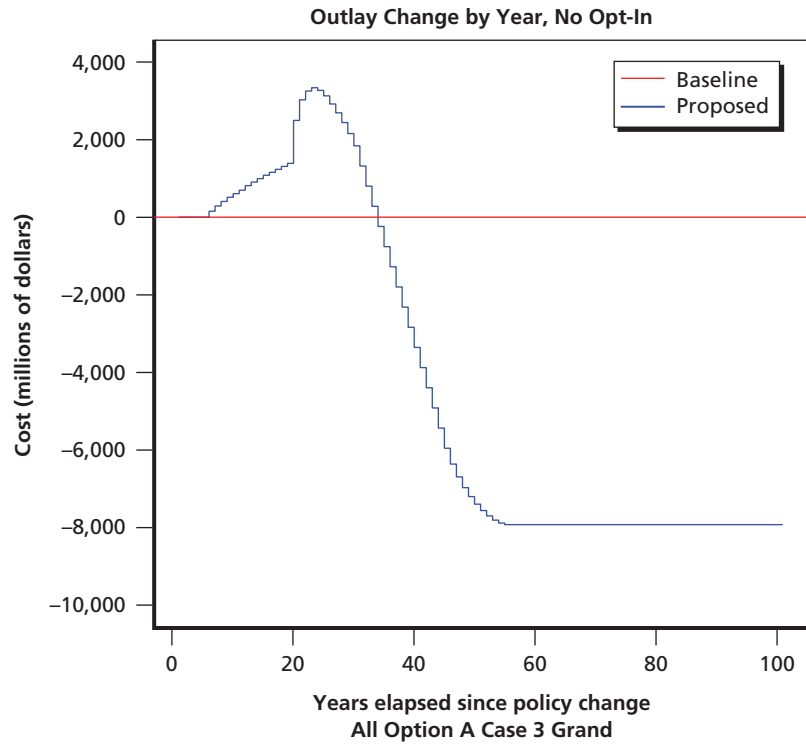
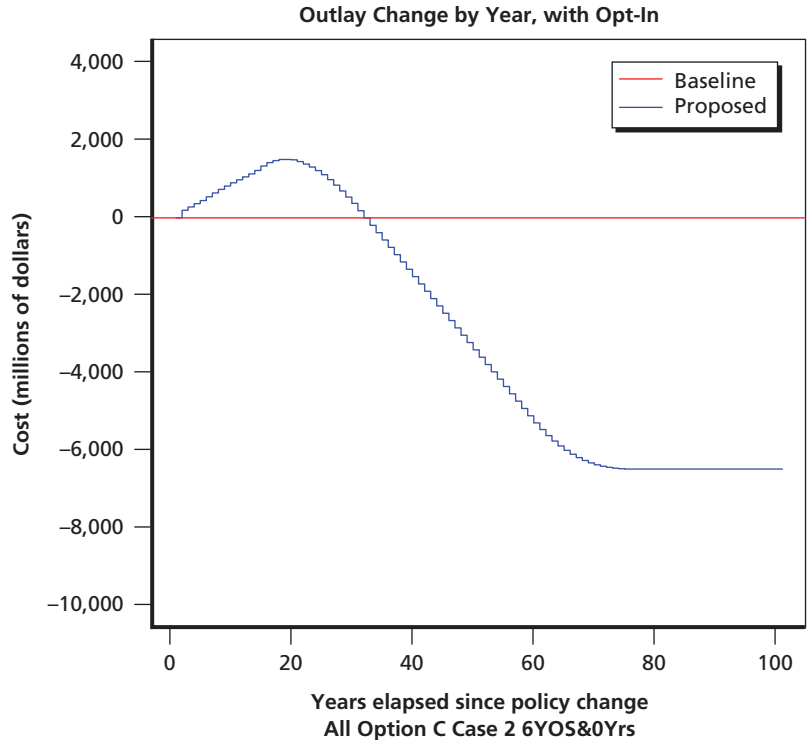
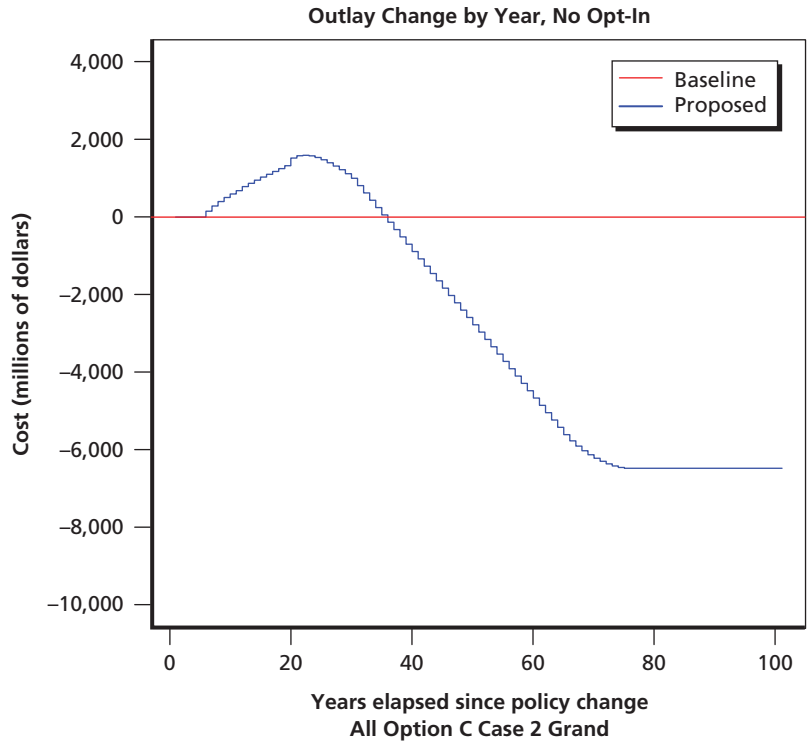


Figure S.6
Savings to the Treasury Speed Up When Current Members Opt In,
Concept II



When currently serving members can opt in, the pattern of outlays changes (bottom panel). Outlays are higher in the early years, as compared with outlays when there is no opt-in feature, but they also decrease sooner. The initial rise in outlays is because members who opt in will receive TSP contributions and additional continuation pay (for members who opt in by 12 YOS). But because the retirement annuity is lower under the new system than the existing system, outlays fall sooner relative to the baseline—under Concept I with opt-in, outlays are below baseline beginning 21 years after the plan would be implemented, compared with 34 years in the absence of opt-in; under Concept II, outlays are below baseline after 32 years with opt-in, compared with 36 years without.

The Payout to the Member Differs Under the Two Concepts, But Both Are Sufficient to Sustain the Force Size and Experience Mix

Understanding how the new system would affect the payout to service members is an important criterion for adopting one of the proposed systems. Both concepts change the timing and amounts of some components of the compensation package—moving some retirement pay forward in the career. Service members would receive higher current compensation in the form of continuation and transition pay, but a lower retirement annuity upon leaving service. In addition, vesting of the TSP after 6 YOS means that the percentage of personnel leaving the military with a retirement benefit would increase.

Despite the changes in the timing and amount of compensation, and early vesting in the defined-contribution plan, both concepts are able to create a steady-state force level and experience mix that are the equivalent of the current force. That is, our model simulations indicate that under both concepts service members are equally willing to stay in service, and so retention is same. This is also reflected in the finding that allowing members to opt in hastens the realization of cost savings; we assume that members would not choose to switch unless they felt they would be at least as well off under the new system.

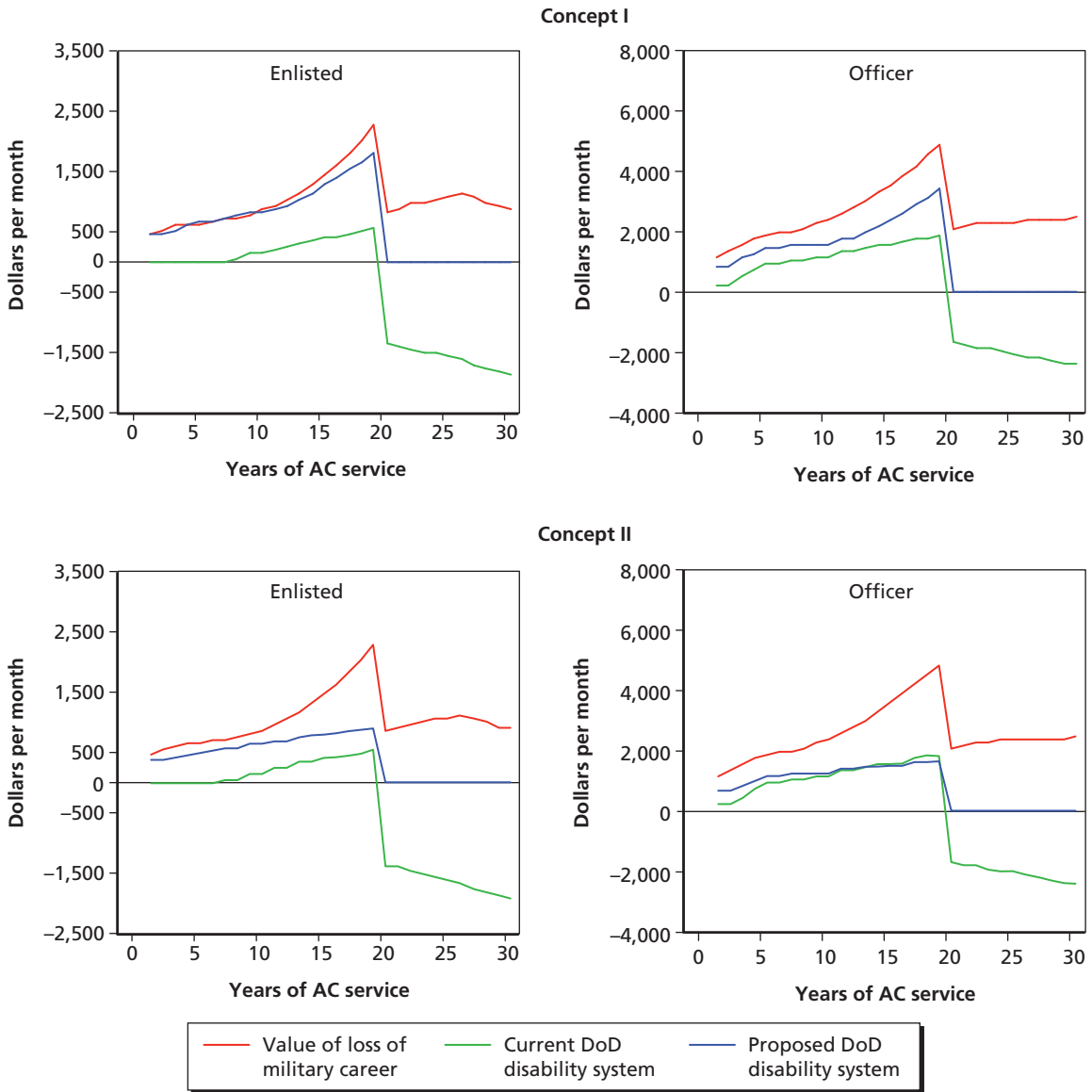
Reallocating compensation toward current compensation and away from deferred compensation creates a source of value under each concept. When compensation is paid out sooner, it is more valuable to the typical member assessing whether to stay or leave the military. Another source of value is the early vesting in the defined-contribution element of the retirement package, which provides certainty to members who serve beyond six years that they will receive some retirement compensation in recognition of their years of service.

The Proposed Reform to Disability Retirement Is Simpler and Fairer

The proposed disability retirement reform would simplify the computation of the DoD disability retirement benefit by eliminating the VA disability compensation offset to the DoD disability benefit, which also eliminates the need for “offsets to the offsets” under Combat-Related Special Compensation and Concurrent Disability and Retirement Pay. Figure S.7 compares the expected value of a lost military career with the value of the current DoD disability benefit² and with the proposed change in the DoD disability benefit under Concept I and Concept II. As the figure shows (top left and top right panels), the new disability benefit under Concept I,

² The value of the current DoD disability benefit depends on a number of factors, including DoD rating, whether Combat-Related Special Compensation is relevant, and whether there is an offset to the VA benefit—although the difference by years of service when these factors vary are generally not large. The analysis here assumes no Combat-Related Special Compensation offset, but that is considered in the body of the report.

Figure S.7
Disability Proposal Increases Disability Compensation



RAND RR501-S.7

at a DoD disability rating of 50 percent, would be greater than the current benefit for both officers and enlisted personnel. Thus, the new system would be a clear improvement under Concept I, due primarily to eliminating the VA offset. (The disability benefit under the current system [green line] is shown to be negative after 20 YOS because the disability benefit is less than the benefit the member with 20 or more YOS would have had, had the member's career not been cut short.)

Under Concept II (lower left and lower right panels), the value of a lost career is slightly lower because the military retirement multiplier is lower. The new disability benefit under Concept II is also lower. For enlisted members, the new disability benefit at a DoD disability rating of 50 percent would still exceed the current disability benefit, but would fall short of

the value of a lost career. For officers, the new disability benefit would equal what is currently offered under the existing disability system for officers with fewer than 20 YOS, but would exceed the existing benefit for those with more than 20 YOS.

In Conclusion

RAND provided extensive analysis to support the deliberations of the DODWG. The retirement design concepts emerging from those deliberations are based on the hybrid approach recommended by past commissions and reviews. The DODWG's hybrid approach retains positive aspects of the current system while addressing criticisms of that system. Our analysis shows that while the specific effects of the two design concepts differ, they both are feasible, provide cost savings, improve equity, add potential for improved force management flexibility, and help simplify the DoD disability compensation system. We find that cost savings begin at once, while outlays initially increase and later decrease below baseline outlays. The time path of cost and outlays depends on whether members are permitted to opt in and the percentage who choose to opt in. Both concepts affect the elements of compensation as well as the timing of the payouts to service members. Our analysis shows that both concepts give rise to the same willingness to stay in service, and so sustain readiness by maintaining force size and experience.

Acknowledgments

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Abbreviations

AC	active component
ARP	disability benefit based on years-of-service retired pay formula
C	civilian job
COLA	cost-of-living adjustment
CR	combat-related
CRDP	Concurrent Retirement Disability Pay
CRSC	Combat-Related Special Compensation
DACMC	Defense Advisory Committee on Military Compensation
DBB	Defense Business Board
DIC	Dependency and Indemnity Compensation
DoD	Department of Defense
DODWG	Department of Defense working group
DPV	discounted present value
DRM	dynamic retention model
DRP	disability benefit based on DoD rating
FPEB	Formal Physical Evaluation Board
FY	fiscal year
GRP	disability retirement benefit, which is a maximum of ARP and DRP
high-3 pay	highest three years of basic pay
IAC	Interagency Committee on Uniformed Services Retirement and Survivor Benefits (circa early 1970s)
IDES	Integrated Disability Evaluation System

IDRL	Interim Disability Retirement List
IPEB	Informal Physical Evaluation Board
ISP	involuntary separation pay
MEB	Medical Evaluation Board
NCP	normal cost percentage
OSD	Office of the Secretary of Defense
PCMC	President's Commission on Military Compensation (1978)
PEB	Physical Evaluation Board
QRMC	Quadrennial Review of Military Compensation
RC	reserve component
RMA	Retirement Modernization Act
RMC	Regular Military Compensation
TDRL	Temporary Disability Retirement List
TSP	Thrift Savings Plan
VA	Department of Veterans Affairs
VADC	VA disability compensation
YOS	year(s) of service

Introduction

Background: Why Consider Reform Now?

The current military personnel and compensation systems are more the product of evolution than they are of deliberate design. Some elements of the compensation system predate the republic,¹ but most descend from the force structure and pay and personnel policies of World Wars I and II. For example, the formula for computing retired pay, much of which is still in use today, first came into being in 1916. Policies dating from the end of World War II led to adjustments to the retirement system that created strong incentives for members to leave the military after 20 years of service (YOS). More specifically, the military retirement system is a defined-benefit plan that vests personnel at 20 YOS, where the retirement annuity is based on a formula equal to 2.5 percent times years of service times the highest three years of basic pay (“high-3 pay”). Active component (AC) members who are vested can immediately receive benefits upon separation, while vested reserve component (RC) members must generally wait until age 60 to receive benefits.²

The incentives embedded in the retirement system enabled the armed services to avoid pay increases, or “fogies,” to more senior members and also opened up promotion opportunities for junior and mid-grade personnel. By and large, these objectives were achieved. Unlike the military of the 1930s, the military of the 1950s and later was not top-heavy with seniority, and the open routes to promotion provided an incentive for junior personnel to show what they could do and to strive for the top.

But acknowledging the success and good features of the current system does not mean that it is perfect. Numerous commissions and studies as well as military leaders have criticized the military compensation system as inefficient, unfair, inflexible, and inhibiting to the effective management of military personnel. We discuss the advantages and shortcomings of the current compensation system and the key findings of past commissions and studies in more detail in Chapter Two. But, in brief, the shortcomings fall into several areas that are connected to one another in various ways:

- Experience or career retention profiles are too similar across different occupational areas, despite factors such as differing training costs and productivity that would argue for more variable experience profiles.

¹ For example, enlistment and reenlistment bonuses were offered to individuals during the Revolutionary War.

² See Asch, Hosek, and Mattock (2013) for a detailed description of the active and reserve retirement systems and of the major differences between the active and reserve compensation systems.

- Officer careers are inefficient and often have assignments that are too short; overall career lengths are also too short, and there is virtually no lateral entry.
- Advancement in officer and enlisted careers requires promotion and a movement toward leadership and supervisory roles, despite the fact that experience in the same job can also be of value, particularly in occupational areas where new military weapons, communications, and control technology have a long learning curve.
- Defense thinking calls for the reserves to be used in military operations on a regular basis, a change that has occurred without the benefit of strategic thinking about how active and reserve careers should mesh together and how active and reserve personnel force structures should complement one another.
- The compensation system lacks transparency and is made up of numerous pays, allowances, benefits, perquisites, and tax breaks. Due to this complexity, the system may result in higher compensation than necessary to meet manning needs; is frequently undervalued by the very individuals that benefit from it; is often viewed as structurally outmoded; does not sufficiently differentiate rewards by occupation, economic sector, or skill set; and tends to encourage certain behaviors, while discouraging others, that are contrary to current workforce management objectives.

While these issues have been discussed and debated for some time, there is renewed interest in addressing these shortcomings, stemming from two sources: (1) a renewed urgency for controlling defense costs, particularly personnel costs, while maintaining desired defense capabilities, and (2) a renewed interest in ensuring that the personnel force structure has the agility and experience to employ and support today's weapons and tactics against diverse and evolving threats and scenarios. Decisions about defense capabilities are generally based on strategy, tactics, and technology, with cost as a consideration subordinated to capability. But the outlook is for defense budgets to tighten, and the Department of Defense (DoD) will likely need to consider, or find, possible cuts and ideas for restructuring. Yet even without budget pressure, periodic critical review of the military personnel and compensation systems in response to emerging threats and new technology is prudent.

Department of Defense Working Group on Military Compensation

With these issues in mind, the Office of the Secretary of Defense (OSD) convened a working group in September 2011 to conduct a comprehensive review of military compensation, focusing particularly on retirement compensation but taking a holistic approach by considering both current and deferred compensation. The DoD working group (DODWG) met roughly every three to four weeks over an 18-month period. It drew its members from across DoD and included senior OSD, service and joint staff representations, senior enlisted representatives, and, when relevant to the deliberations, representatives from the reserve components. The group's objectives were to define and discuss possible changes to the military compensation system, focusing on the retirement system, including a transition plan. Options under discussion included changes not only to the active retirement system but also to the system for reservists, the disability retirement system, and survivor benefits, as well as changes to current cash compensation. The group's deliberations are currently helping to inform the development of DoD proposals to reform and modernize the military compensation system.

The DODWG developed alternatives that aimed to meet a set of military compensation objectives and that were informed by the findings of past study groups and commissions.³ According to the objectives articulated by past groups, military compensation should enable the services to meet their readiness requirements for the total force, including sustaining the size and experience/grade mix of the force, rewarding performance, inducing better-qualified members to stay and seek advancement, and eventually inducing them to leave when it is appropriate. The system should also be efficient by enabling the services to meet their readiness and capability requirements at least cost. The compensation system must enable the flexible management of personnel; be simple, transparent, predictable, and easy to explain; treat personnel fairly; and be robust to changes in conditions, including changes in the economy and national security environment. Any changes to the system must have an acceptable administrative burden, as well as an acceptable impact on individual service members and their families.

Two major design concepts for retirement reform emerged during the DODWG's deliberations that the group felt met these objectives. These were called Concept I and Concept II and included changes to not only the AC retirement system but also to the RC retirement system, the disability retirement system, and the survivor benefits program. Both concepts would replace the current system with a system that includes three elements, though the details of these elements differ between Concepts I and II. We describe these details in Chapter Five, but in brief, the three major elements are as follows:

1. Modify the current retirement benefit system, known as a defined-benefit plan because the benefit is defined by a formula, to reduce the amount of payout to the member, though both concepts would maintain vesting at 20 YOS. The two concepts differ in how they would change the amount of the payout and the timing of the payout.
2. Supplement the defined-benefit plan with a defined-contribution plan, also known as a 401k-type plan in the private sector. This plan would vest earlier than 20 YOS, would involve contributions by DoD on behalf of the member, and would begin the payout of the benefit as early as age 59½.
3. Increase current cash compensation, in the form of supplemental pays, though the amount of these changes in pay would differ between the two concepts. The purpose of these pays is to sustain the size and experience mix of the force.

The two concepts would also revise the reserve retirement system, generally in the same way as the change to the active component system. The concepts differ in terms of whether members who retired under the RC retirement system would receive an immediate annuity. Under one concept, RC members would no longer have to wait until age 60, as is generally the case under the current system, to begin receiving benefits, but would receive an immediate annuity upon vesting at 20 YOS. Under the other concept, the current age-60 requirement would be maintained. Both concepts include a revised disability retirement benefit that would change, among other things, the benefit formula for disability retirement and, importantly, eliminate the offset for receipt of VA disability compensation that currently occurs for some members. Finally, both concepts include a revised Survivor Benefit Plan.

³ The Seventh Quadrennial Review of Military Compensation in 1992 articulated the objectives of military compensation. Since then, the objectives have been reiterated and adapted in the report of the Defense Advisory Committee on Military Compensation (2006) and in the Military Compensation Background Papers (DoD, 2011).

RAND Support to the Department of Defense Working Group

To support the DODWG's efforts, RAND drew on its dynamic retention model (DRM) to assess a wide range of alternatives in terms of their long-run (steady-state) force management effects for the active and reserve components, their effects on cost, and their effects on the financial wealth of service members. By steady state, we mean 30 years after implementation, when all service members have spent their entire career under the new retirement system. This model has been documented in past reports, as discussed in Chapter Three. RAND extended its model to analyze retention, DoD costs, and government outlays during the transition to a new steady state (i.e., during the 30-year period before the new steady state is reached) and to consider transition policies under which existing members stayed under current policy or, alternatively, could choose to participate in the new retirement system. RAND also provided analyses of the current disability retirement system. RAND provided briefings at each of the DODWG meetings, amounting to more than two dozen presentations.

Organization of This Report

This document summarizes the RAND analysis that supported the DODWG efforts. It begins in Chapter Two with background information on past military compensation reform efforts and the conclusions of these efforts about the advantages and disadvantages of the current system and proposals for change. Chapter Three presents a brief overview of the DRM, and Chapter Four describes many of the retirement reform options that were considered by the working group but later discarded. Chapter Five describes the specific reform proposals adopted by the working group and summarizes the analysis of the DODWG reform proposals with respect to (1) force management and cost effects for the active and reserve components and (2) the financial effect to service members. The results in Chapter Five are for the steady state—when all members have spent their entire career under the new system. Chapter Six presents year-by-year results for the transition to the steady state. It analyzes alternative transition policies including full grandfathering of existing members and full grandfathering while allowing existing members to participate in the new policy. In Chapter Seven, we turn to the disability retirement system, where we discuss drawbacks and advantages of the current disability system, present the working group's proposals for reform, and then discuss the RAND analyses of these proposals. We conclude with a set of closing thoughts about compensation reform and the specific alternatives proposed by the DODWG.

Background on Retirement Reform

The current military compensation and retirement benefit system is working. Few would question that it has been effective in meeting recruiting and retention goals in the active and reserve forces, and doing so despite service differences in military careers, occupational mixes, locations, and roles and missions. At times, recruiting and retention have been below goal, such as in 1979 and 1999, but this occurred because military pay had been allowed to decline relative to civilian labor market opportunities, not because of a system deficiency, as the Ninth Quadrennial Review of Military Compensation (QRMC) demonstrated. Thus, the case for reform does not rest on evidence that the current system cannot meet manning requirements, but rather on whether it can be improved. Can its flexibility to meet manning requirements be strengthened, can it meet requirements at less cost, and can it offer greater value to the service member? In one form or another, these questions have been at the core of past efforts at retirement reform and remain relevant today. Also, as the survey below will illustrate, a retirement reform must be designed in conjunction with changes in current compensation.

Critiques of the retirement system have been quite similar, dating back to the late 1940s, when the system was created. As we discuss in greater detail in this chapter, they include the President's Commission on Military Compensation in 1978, as well as recent studies, such as the Defense Advisory Committee on Military Compensation (2006) and the Tenth and Eleventh QRMCs (DoD OSD, 2008, 2012). A Congressional Research Service report (Henning, 2011) offers a succinct statement: The military retirement system is "inefficient because it defers too much compensation until the completion of a military career; inflexible because it does not facilitate force management or encourage longer careers; and inequitable because most service members never qualify or vest."

More specifically, critics of the current system argue that it is inefficient because it defers a relatively large amount of compensation over a career into the retirement benefit despite the fact that the typical service member is young and has a preference for current over deferred compensation. A reformed retirement system can be more efficient by decreasing the amount of deferred compensation and bringing it forward in the career, and this can produce cost savings while attaining the same force size and shape. Reform can promote flexibility in force management by allowing incentives that would support shorter or longer careers by occupational area and service, as well as longer assignments if desired. As discussed in the reports of past commissions and studies, inflexibility occurs in several ways in the current system: similar retention profiles by occupation, a strong incentive for members to leave the military after reaching 20 YOS and becoming eligible for immediate retirement benefits, and a strong incentive for members to stay in military service until at least 20 YOS coupled with service reluctance to separate members who are approaching 20 YOS. According to the critics, a reformed

system can be more equitable by offering earlier vesting. In the current system, members with fewer than 20 YOS, which is to say the majority of members, have no retirement benefits, whereas earlier vesting would be more inclusive. All three aspects—greater efficiency, flexibility, and equity—are features of the retirement reform concepts described and analyzed in later chapters, and this chapter will help to reveal how the concepts build on and relate to the work of past study groups.

Given the critiques of the retirement system, what alternatives have been recommended in response? The answers differ for each past study group and illustrate the many details and decisions that arise on the path to devising a reform proposal. We highlight the findings of some of the key studies and reviews since the late 1940s. We first briefly discuss some findings of the Joint Army-Navy Pay Board (1947/1948), the Hook Advisory Commission (1948), the First QRMC (DoD, 1969), the Interagency Committee on Uniformed Services Retirement and Survivor Benefits (DoD, 1971), and the DoD review leading to the Retirement Modernization Act (1974).

We next turn to a detailed discussion of five more recent studies that considered the military retirement system. In shaping the discussion, we have drawn on a Library of Congress report on retirement reform (Hudson, 2007) summarizing five major studies of the retirement system since 1974 and their reform proposals.¹ These are the Defense Manpower Commission (DoD, 1976), the President's Commission on Military Compensation (1978; also referred to as the Zwick Commission), the Fifth QRMC (DoD OSD, 1984), the Sixth QRMC (DoD OSD, 1988), and the Defense Advisory Committee on Military Compensation (2006). Hudson's report describes each study's proposal and contains an appendix with the key features of each proposal (as well as those from ten other studies, included as supplemental material). We have added proposals from the Tenth (DoD OSD, 2008) and Eleventh (DoD OSD, 2012) QRMCs. Our focus is on retirement reform, and our discussion is selective and does not cover the full range of topics considered in the studies.

The studies' retirement reform proposals differ along a number of dimensions. These include when vesting occurs, the age at which benefit payments begin, the formula for computing the retirement benefit, the adjustment for cost of living, whether the benefit should be lower during the second career (after military retirement and up to the age when the full benefit is paid), whether to pay a lump sum upon retirement, and whether to offer a defined-contribution plan.

Studies Preceding the Defense Manpower Commission (1947–1974)

The findings and recommendations of the DODWG on Military Compensation have antecedents stretching back over half a century. Both the Hook Commission in 1948 and the 1947 Joint Army-Navy Pay Board expressed concern that the 20-year system induced military careers that were too short (Hook Advisory Commission, 1948; "Joint Army-Navy Pay Board Study," 1947); the working group has similarly expressed concern that the "one size fits all" nature of the current military retirement system does not allow for shorter or longer careers where they make sense. The Hook Commission and Joint Pay Board argued for an immedi-

¹ Reviews of past study group and commissions are also provided in Warner (2006), Christian (2006), and Asch and Warner (1994).

ate annuity only after 30 YOS, though this recommendation was not adopted. The Joint Pay Board also expressed concern about delayed vesting at 20 YOS and the unfairness to members who leave before 20 YOS, another issue that the working group considered. The Joint Pay Board recommended vesting at 10 YOS in an old-age annuity that would begin at age 62 and funded by member contributions to a retirement fund. As described in Chapter Five, the working group's proposal includes early vesting after 6 YOS in a defined-contribution plan that would begin payout as early as age 59½ but where the contributions would be made by DoD, not the member.

An important contribution of the First QRMC in 1969 was its focus on providing a rationalization for the retirement system and distinguishing between the old-age period of retirement benefit and the second-career period of retirement benefit, where a benefit would help members transition to the civilian labor market (DoD, 1969). The First QRMC recommended a two-tiered retirement system that would significantly reduce the retirement annuity during the second career, arguing that the current retirement system overcompensated members for earnings loss as they transitioned to the civilian market. The second tier would begin in old age and would provide a full annuity. One of the two design concepts from the working group includes a reduced annuity in the second career with a full annuity in old age, though the working group's formula for a reduced annuity differs from the one proposed by the First QRMC.

The Interagency Committee on Uniformed Services Retirement and Survivor Benefits (the so-called IAC) in the early 1970s also recommended a two-tiered system with a reduced annuity in the second career (Asch and Warner, 1994). However, many critics of the IAC proposal argued that its recommended reduction did not provide a large enough transition benefit. The IAC proposal was substantially revised by DoD and submitted to Congress as the Retirement Modernization Act (RMA) in 1974 (U.S. Congress, 1974). The RMA included a reduced second-career annuity. The RMA (as well as the IAC proposal upon which it was based) also included earlier vesting, to address the concern first articulated by the Joint Pay Board in 1947. The RMA recommended vesting those who separated with between 10 and 19 YOS in an old-age annuity to begin at age 60. As mentioned, the working group also expressed concern about the lack of early vesting, and its proposal includes early vesting in a defined-contribution plan.

Defense Manpower Commission (1976)

As noted above, the working group recognized the inflexibility of the current military compensation and retirement system, including difficulty to induce members to prolong careers in fields (e.g., Special Operations) where there are payoffs to experience. In 1976, the Defense Manpower Commission proposed measures that, had they been implemented, would have allowed more flexibility in shaping the retirement timing incentives facing service members.

The Defense Manpower Commission proposed that retirement eligibility should differ between combat and noncombat occupations (e.g., technical, administrative, logistical, professional). Eligibility, the time at which retirement benefits would be payable, would require at least 20 YOS for those who spent their career in combat arms specialties and between 20 and 30 YOS for those in noncombat arms during all or part of their career, with a maximum of 1.5 points for each year in a combat job and 1 point for each year in most noncombat jobs. This proposal reflected a shift away from a system that computed retirement benefits by the

same formula for all occupations. The intended effect of differential point accumulation was to enable personnel in combat occupations, which demanded strength and vigor, to have a strong incentive to reach 20 YOS and to retire soon after if desired, and to encourage longer service in noncombat occupations so the military could benefit from their experience and expertise. Vesting in this system would occur at 10 YOS. The retirement benefit would equal the product of the highest three years of pay (“high-3 pay”), the number of retirement points (minimum of 30), and a multiplier of 2.66 percent per point. A member with 30 points would receive a retirement benefit of 80 percent of high-3 pay; a combat member would reach 30 points at 20 YOS and a noncombat member at 30 YOS. Those members who did not reach 30 points would receive an old-age annuity, but not an immediate annuity, if they had at least 10 YOS. The proposal allowed for refinement within career tracks. For instance, a member in a hazardous combat job would have 1.5 points for each year, while a member in a headquarters combat job would have fewer points per year, and similarly in the noncombat track.

President’s Commission on Military Compensation (1978)

The President’s Commission on Military Compensation (PCMC) criticized the military retirement system on three counts: that it was inequitable because there were no retirement benefits for those not reaching 20 YOS; that it inhibited flexible force management because managers were reluctant to separate low performers as they neared 20 YOS; and that it was ineffective because it had little effect on recruiting and early retention, but an extremely strong effect on retention after 10 or 12 YOS. The commission’s proposal addressed these deficiencies by moving vesting from 20 YOS to 10 YOS. This change strengthened early retention incentives, weakened the golden handcuffs of 20-year vesting that led to such high retention from YOS 10 to 20, and weakened the reluctance to separate members in this range. With vesting at 10 YOS, a service would no longer need to worry that separation would leave a member without any military retirement benefit. Retirement benefits would be payable at age 62 for members with 10–19 YOS, age 60 for those with 20–29 YOS, and age 55 for 30 or more YOS. The benefits would be based on high-3 pay, YOS, and multipliers graduated by YOS (2 percent per year for YOS 1–5, 2.25 percent per year for YOS 6–10, and 2.75 percent per year for YOS 11–35. The effective multiplier would be $(0.02 \times 5 + 0.0225 \times 5 =) 0.2125$, or just over 20 percent, at 10 YOS; 0.4875, or nearly 50 percent, at 20 YOS; and 0.7625, or approximately 75 percent, at 30 YOS.

In addition, the proposed retirement system would include a tax-sheltered trust fund—a defined-contribution plan—with DoD contributions of 20 percent of basic pay from YOS 6 to 10, 25 percent from YOS 11 to 20, 15 percent from YOS 21 to 25, and 5 percent from YOS 26 to 30. The trust fund would vest at YOS 10 and, at the member’s choice, be either (1) paid at separation as a lump sum, (2) rolled over into a civilian retirement account, or (3) paid as an annuity when retirement benefits began, i.e., at age 62, 60, or 55. However, the member could choose an annuity payout window of as little as two years, which is close to allowing a lump-sum payout when retirement benefits began. Also, a member with 10 or more YOS could withdraw a portion (up to 50 percent) of the account while on active duty. The commission noted that this feature of the system could serve as a severance payment to assist members in adjusting to civilian life after leaving the military.

The PCMC calculated that its retirement benefit multipliers and vesting at 10 YOS would not change the percentage of the force in 0–5 YOS but would increase the percentage in 6–10, decrease the percentage in 11–20, and increase the percentage in 21–30. The commission felt these changes would produce a force at least as good as the force at that time. The reasoning was that retirement at or before 20 YOS would suit occupations requiring youth and vigor, such as combat occupations, and careers longer than 20 YOS could be appropriate for occupations where experience and technical expertise were more critical. The commission was aware that higher post-20-YOS retention could clog the promotion pipeline (decrease the number of senior-rank positions open in any given time interval), and therefore advised DoD and the services to revise promotion criteria and phase points in order to separate weak performers earlier (via nonpromotion) and allow longer time in grade at mid- and high-level ranks.

The PCMC projected that its proposal would increase budget outlays for the first 20 years. Outlays would then decrease below what they would have been, and cost savings would be realized in the steady state.

The PCMC laid part of the foundation for the working group proposal by recommending earlier vesting to members and a significant cash benefit to separating personnel, thereby recognizing the importance of a transition benefit as well as a means of moving some deferred compensation forward into current compensation.

Fifth Quadrennial Review of Military Compensation (1984)

The Fifth QRMC said that retirement vesting and eligibility should remain at 20 YOS. Vesting before 20 YOS would increase cost but not increase readiness, it argued, and vesting after 20 would increase cost and cause too much retention relative to post-20-YOS manpower requirements. Further, the existing structure of bonuses and severance pay were sufficient to compensate for service in the years before 20 YOS, and provided somewhat equitable treatment of members separated voluntarily or involuntarily before reaching 20 YOS. The Fifth QRMC considered a defined-contribution retirement system with contributions by both DoD and the service member, and felt it would increase accessions and decrease the size of the career force. As a result, a pay raise would be needed to restore the career force. That is, pay costs would have to increase to offset the incentive to leave created by adding a defined-contribution benefit. The Fifth QRMC therefore concluded that a defined-contribution plan would not be advisable. With respect to RC compensation, the Fifth QRMC “observed that [their] compensation system . . . must be an integral part of the overall system by which manpower is managed” but offered no proposal (Hudson, 2007).

In line with other studies, the Fifth QRMC stressed the importance of ensuring that the compensation and personnel management systems were adequate to meet manning requirements. Reviewing private-sector pension systems, the Fifth QRMC concluded that the military retirement benefit was generous by comparison. Its total benefit was estimated to be 15–30 percent higher than the retirement benefit of a civilian worker retiring with full benefits at age 62 or 65 at the 90th percentile of the civilian retirement benefit distribution. Government costs of the military system were 20–100 percent higher “than the average of a large sample of private firms” (Hudson, 2007).

The Fifth QRMC sought ways to control cost while maintaining the capability to man the force. It recommended four alternatives for adjusting retired pay, which in retrospect share

the underlying idea of bringing deferred compensation forward in the career. The first alternative allowed the real value of retired pay to fall during the second career by adjusting it for half the increase in the cost of living. At the same time, the member would receive a cash payment (an “early withdrawal”) from his or her retirement estate (the amount notionally accumulated to cover the member’s retirement benefit stream) equal to 1.6 times annual basic pay at 20 YOS, 0.4 at 23 YOS, and 0.5 at 27 YOS. In this alternative and the other alternatives, the cash payment would be paid regardless of whether the member stayed or retired. The Fifth QRMC realized that setting specific years for the payment, i.e., YOS 20, 23, and 27, created incentives to stay until those points and then leave. It also realized that moving retirement pay forward in the form of a cash payment was necessary to sustain retention given the decrease in the real value of the second-career retirement benefit from the less-than-full cost-of-living allowance (COLA) adjustment.

The second alternative decreased the retirement benefit multiplier from 2.5 percent to 1.75 percent. The retirement benefit would be 35 percent of basic pay at 20 YOS and 52.5 percent at YOS 30, not 50 and 75 percent, respectively. This alternative provided a cash payment of 2.1 times basic pay at 20 YOS, 0.6 at 23 YOS, and 1.0 at 27 YOS. The third alternative altered the retirement benefit formula so the benefit was 35 percent of basic pay at 20 YOS but stayed at 75 percent at 30 YOS. The early withdrawal amount was 2.1 times annual basic pay at YOS 20. The fourth alternative decreased the COLA to 75 percent of full adjustment until age 62, used the retirement benefit formula of the third alternative, and provided an early withdrawal of two times annual basic pay for officers and three times for enlisted personnel.

The Fifth QRMC recommendations highlighted the concept of moving pay forward toward current compensation, thereby helping to lay the groundwork for the working group proposal. It also reintroduced the concepts of (1) a two-tiered retirement system with reduced benefits during the second career and (2) a system with an overall lower multiplier than 2.5 percent. These two concepts are incorporated into the two design concepts adopted by the working group.

Sixth Quadrennial Review of Military Compensation (1988)

The Sixth QRMC focused on the reserve retirement system. This review took place in the years immediately following passage of the Military Retirement Reform Act of 1986 and the “Redux” retirement system. The act made the benefit for 20 YOS equal to 40 percent of basic pay, down from 50 percent, and the benefit ramped up to 75 percent at 30 YOS, its previous level. The act mandated a less-than-full COLA—the Consumer Price Index [CPI] minus 1 percent to age 62—a catch-up at age 62 to what the benefit would have been under the pre-Redux system (including full COLA to that age), and a CPI-minus-1-percent adjustment thereafter. The National Defense Authorization Act of 2000 largely counteracted Redux by allowing members who entered the military on or after August 1, 1986, the choice between the pre-Redux system and the Redux system plus a \$30,000 cash payment called the Career Status Bonus. The bonus is paid at YOS 15 and requires a commitment to stay to 20 YOS. Of concern to the reserves (as well as the AC), Redux decreased the value of retirement benefits and potentially threatened reserve retention.

In addition, legislation passed in 1984 put the funding for military retirement on an accrual basis; it had been on a pay-as-you-go basis. This change, along with increased longevity

in general and the relatively large number of members with 20 or more YOS, many of whom had served in the Vietnam war era, implied a future of increasing accrual charges to fund the reserves' retirement liability. The Sixth QRMC was thus also concerned with ways to slow the accrual cost increase and yet meet reserve manning requirements.

The Sixth QRMC concluded that the reserve retirement benefit was a necessary retention incentive in general but would generate too much senior reserve retention and too much officer retention relative to enlisted retention, once the Vietnam-era group had ended its participation in the reserve. In considering possible changes to the reserve retirement system, the Sixth QRMC wanted to encourage pre-20 YOS retention and strengthen the incentive for senior reserves to separate, but not create incentives adversely affecting AC retention.

The Sixth QRMC arrived at a two-tier proposal for reserve retirement reform. Instead of paying benefits at age 60, first-tier benefits would be payable after completion of 20 YOS and would be a flat percentage of high-3 basic pay. At age 62, the start of tier two, the benefit amount would be adjusted to what it would have been under the existing system, including full COLA. Apart from this one-time adjustment, the benefit would be adjusted by CPI minus 1 percent during both tiers. Another feature of the Sixth QRMC's proposal was that current reservists could choose between the two systems; they were grandfathered under the existing system but could opt for the new system. Newly entering reservists would be under the new system. Like the PCMC, the Sixth QRMC projected the effect of the proposal on future year outlays and found that the two-tier proposal would increase outlays in the near-term (15 years or so) and then decrease outlays, producing eventual cost savings.

The working group proposal also incorporates an opt-in feature for currently serving members. As for reservists, the first design concept would provide an immediate but reduced annuity in the second career, and a full annuity in old age. Thus, the Sixth QRMC's recommendations were a precedent to the working group proposals.

Defense Advisory Committee on Military Compensation (2006)

The Defense Advisory Committee on Military Compensation (DACMC) issued its report in 2006. It worked under the charter of reviewing the structure of military compensation and benefits to improve DoD's capacity to meet manning requirements, sustain a high-quality force, and do so more cost-effectively. The DACMC built on the recommendations of the 2000 Defense Science Board Task Force on Human Resources Strategy (U.S. Defense Science Board, 2000), the 2000 Officer Management Study Group, and the 2001 Quality of Life Panel.² The DACMC's critique of the compensation system reiterated the critiques in these and other previous studies—the system was inefficient, inflexible, and inequitable. Too much compensation was deferred, and moving some of it forward to current pay would increase efficiency. Cliff vesting of a generous retirement benefit created strong incentives to stay until 20 YOS and to leave after 20, prompting manpower managers to adapt career structures to the retention profile generated by the compensation system rather than developing career structures on the basis of productivity and experience, replacement cost, retention of high perform-

² As discussed in Warner (2006), the deliberations of the Quality of Life Panel and the Officer Management Study Group were summarized in briefings or an internal DoD memorandum. See Warner (2006) for a more detailed description of those panel's conclusions.

ers, the need for an adequate supply of qualified personnel for selecting senior leadership, and other factors related to capability and readiness. Further, most service members received no retirement benefit.

In response to these concerns, the DACMC proposed a hybrid system with defined benefit, as currently exists, and defined-contribution elements. The defined benefit would use the same formula as the current retirement system, vest at 10 YOS, and be payable at age 60, a major change from the current system. The defined-contribution element would be funded by DoD contributions of perhaps 5 percent of basic pay and would vest at a time to be determined, but after 5 YOS and before 10 YOS. Once vested, the member could opt to receive the DoD contribution in cash. The proposal also included retention incentives called “gate pays” for the completion of a given number of years of service, regardless of whether the member stayed or left at that point, and a separation payment to induce those with more than 20 YOS to stay beyond the 20th year and to separate later, at a time suiting the service, though the separation decision itself would be voluntary. The retention bonuses and separation pay could vary by service, by occupation within a service, or by criteria established by a service. Finally, current members would be grandfathered under the current system but could elect to enter the new system.

The DACMC proposal addressed the three major criticisms of the current compensation system. It would be more efficient by bringing compensation forward through gate pays and separation pays. It would be more flexible by allowing the services to target gate pays and separation pays to induce retention profiles to suit the needs of the service. It would be more equitable because a much higher percentage of service members would qualify for at least some retirement benefit through the earlier vesting of both the defined benefit and the defined-contribution components.

The DACMC's hybrid proposal—combining elements of defined-benefit and defined-contribution retirement plans as well as immediate cash compensation—was a cousin of the DODWG's two broad retirement reform concepts which also contain these three elements.

Tenth Quadrennial Review of Military Compensation (2008)

The Tenth QRMC's proposal for retirement reform had much in common with the DACMC proposal and was motivated by the same reasons. The Tenth QRMC recommended a hybrid approach that included a defined-benefit plan, a defined-contribution plan, gate pays, and separation pay. The defined-benefit portion of the plan would use the same formula as today, though vesting would be at 10 YOS and benefit payments would start at age 57 for those with 20 YOS and at age 60 for those with fewer than 20. Members could elect to receive the defined benefit immediately although at a reduced level. The defined-contribution part would be funded by DoD contributions of up to 5 percent of basic pay, with the percentage varying by years of service (0 percent if less than 1 YOS, 2 percent up to 2 YOS, 3 percent up to 4 YOS, 4 percent up to 5 YOS, and 5 percent thereafter), and would also vest at 10 YOS but begin payments at age 60. Gate pays would allow the services to shape retention profiles by occupation or community, and separation pay would encourage both retention after 20 YOS and voluntary exit when the service preferred. The proposed retirement system would have the same parameters for RC and AC members. However, benefits for reservists would typically be lower because of their fewer effective years of service upon retirement.

Eleventh Quadrennial Review of Military Compensation (2012)

The Eleventh QRMC's point of departure was the reserve compensation system. The Eleventh QRMC sought a reserve compensation system that would enable the reserve components to be more seamlessly integrated with the active components. Active duty personnel had a single duty status, active duty, but reservists had many different duty statuses. The Eleventh QRMC proposed six duty statuses: three statuses under Title 10, U.S. Code, Armed Forces, namely, active duty, inactive reserve service, and federal service; two statuses under Title 32, U.S. Code, National Guard, namely, full-time National Guard duty and inactive National Guard service duty; and one status under Title 14, U.S. Code, Coast Guard, namely active duty. Along with simplifying duty status, the Eleventh QRMC proposed paying reservists the same way as actives.

A reservist would receive a "day's pay" for a day of service regardless of duty status, where a day's pay was 1/30 of the monthly compensation an active component member would receive from basic pay, basic allowance for subsistence, and basic allowance for housing. Under the current system, an inactive reservist receives a day's worth of basic pay (1/30 of monthly basic pay) for each training period, with two training periods a day during weekend training once a month. As a result, reservists "are paid more for a day of weekend training than for a day serving in combat" (DoD OSD, 2012). The day's pay approach would pay reservists and actives the same way for a day of service, but would decrease reserve compensation and retirement benefits. To maintain retention, this decrease would need to be offset by increases in reserve current or deferred compensation. Thus, the Eleventh QRMC proposed a package including the day's pay system, an incentive pay (a targetable incentive pay that would increase current compensation), and—after exploring many alternatives—a specific retirement reform. Under the retirement reform, a reservist could receive benefits by age 60, the current start age, or after 30 YOS, which for most reservists would be earlier. Retirement points would accumulate at the rate of a point for each day of service rather than for each training period. Analysis found that this approach with carefully chosen incentive pay could sustain the strength and retention profile of the reserve forces. Also, it would have a negligible impact on active component retention and would be slightly less expensive (around \$200 million per year) than the current system.

The work of the Eleventh QRMC informed the working group's proposal by providing an alternative to the current reserve component compensation system that might be seen as being more in harmony with the retirement system for AC members, namely by providing reservists the ability to receive an annuity before age 60. This idea—allowing reservists to claim retirement benefits before age 60—is included in one of the two broad concepts put forth by the working group. The Eleventh QRMC recommended retirement eligibility after 30 YOS. For example, reservists who attain 20 YOS can begin receiving benefits on accumulating 10 additional years while reservists who attain 30 YOS can begin receiving benefits immediately, regardless of age. The recommendation of 30-year retirement eligibility is part of a larger four-part proposal that constituted a "total force" compensation approach. The other three elements included 53 retirement points, one for each day of service, regardless of duty status; regular military compensation based on days of service, regardless of duty status; and supplemental pay for reservists to sustain retention. One of the working group design concepts included an immediate annuity for reservists—albeit a reduced annuity before old age. Furthermore, while the working group did not include all of the elements of the total force approach, it did design proposals with these elements in mind.

Conclusion

The studies reviewed above differ in their charter and time period but share concerns about the current retirement system's efficiency, flexibility, and equitability. The studies argue that the motivation to reform the system comes not from an inability to meet manning requirements but from the expectation that a reformed system can do so at less cost, add flexibility to man-power management, and be of greater value to more service members.

The broad elements of reform emerging from the history of past studies revolve around adopting a hybrid system that would include a defined benefit but decrease its value, add a defined-contribution benefit, allow earlier vesting in the retirement system, and increase current compensation through incentive pays to provide tools for sustaining retention and shaping it by occupation. Approaches to decreasing the value of the defined benefit have included decreasing the multiplier, decreasing the COLA, creating a two-tier system with a smaller benefit in the second career, and starting the payment of benefits around age 60 rather than immediately upon retirement. The defined-contribution benefit is generally construed to be a Thrift Savings Plan (TSP)-like benefit with contributions by DoD of some percentage of basic pay, perhaps with a graduated contribution rate, and payable at age 60 or so, as an annuity with a payout window as short as two years. Several proposals would move vesting from 20 to 10 YOS. The incentive pays could be retention bonuses, gate pays (cash pay upon the completion of given year of service and without obligation to stay), and, especially after 20 YOS, separation pays, all of which could be designed to work as a system to shape retention profiles—experience mixes—over the entire career in a given occupational area.

Added to these elements are the concepts of grandfathering current members but giving them the option to enter the reformed system, and of ensuring that a reformed system supports both active and reserve components and avoids advantaging either to the detriment of the other. Finally, many of the studies projected both the steady state cost savings and the impact on outlays as the system moved toward the steady state.

These elements form the backbone of the design concepts adopted by the working group. The design concepts involve a hybrid approach that includes a less generous defined benefit, a defined-contribution plan, and higher current compensation. They also allow currently serving members to opt in to the new system.

The studies imply further that the analysis of retirement reforms requires significant analytical capability. The analytical infrastructure should be able to reveal how deferred compensation affects current retention, handle different elements of compensation (defined benefit, defined contribution, gate pay, separation pay, vesting date, payout age), incorporate active and reserve service within a unified framework, and project both steady-state and transitional impacts on retention, cost, and outlays.

A Brief Description of the Dynamic Retention Model

Our analysis of alternative military compensation systems employs RAND's dynamic retention model (DRM) and its capability for the policy simulation of alternative structures of military compensation. This chapter provides an overview of the model, while full descriptions appear in Asch et al. (2008) and Asch, Hosek, and Mattock (2013). It also describes the simulation capability, indicating that it corresponds well to the policy analysis requirements discussed in the conclusion to Chapter Two.

The Decision Model

At the core of the DRM is a dynamic programming model of individual decisionmaking. The model considers individual decisions over a finite horizon consisting of discrete periods (years) and takes into account the uncertainty associated with making decisions that impact one's future career based on the knowledge in hand at the time. In any year, the individual faces a choice among alternatives and must decide on one. These alternatives are to (1) stay in the active component, (2) leave the active component to join the reserves, or (3) leave the active component to become a nonserving civilian.¹

The current choice depends on both current returns and the value of future opportunities. To evaluate future opportunities, the individual reasons forward to consider all possible future paths that can feasibly be reached given a choice to be made in the current state, and then reasons backward along each path assuming the best choice will be made in the last period, then the second to last, and so on to the current period. This reasoning provides information on the payoff to the choices facing the individual today.

This calculation is complicated—but realistic—in allowing for uncertainty about outcomes in each future period and state. This is handled by assuming the individual will make the best choice given the conditions realized in that period and state; depending on the realizations, one choice will be better than another, or vice versa. In the current period the individual cannot know what the future realizations will be (they are uncertain) but can compute the expected value of being allowed to choose among alternatives and make the best choice. That is, one alternative will be the best, the maximum, and although the individual cannot know which one it will be, the individual can compute the expected value of the maximum.

¹ With appropriate data, the DRM could be expanded to include not just the retention decision but also the military accession decision. At this point, the DRM focuses on the retention decision, conditional on military accession. The model assumes the taste distribution is the same across different entering cohorts.

Transplanting the model to the field of military retention permits the introduction of elements relevant to military retention behavior. These elements cover seven areas:

1. *Military and civilian pay.* The DRM includes information about AC and RC military pay by YOS; the vesting point, eligibility point, and benefit formula for military retirement benefits; and information about civilian pay.²
2. *Individual differences (or heterogeneity) in taste for military service.* Individuals may differ in their intrinsic satisfaction from AC and RC service and might have higher or lower military and civilian wages than indicated by the wage lines. The net value of these persistent differences in satisfaction and wages are referred to as the individual's "taste" for the military, an idiosyncratic component of returns from service that is constant over time for a given individual. The taste factors in the model capture nonmonetary aspects of service that are of intrinsic value to the individual, including the value of public service, the camaraderie of military service, and so forth, as well as "quality-of-life" aspects of military service. The model allows each individual to have his or her own taste for the AC and the RC, where the tastes are relative to the taste for a civilian job (C).
3. *The current state, which covers an individual's military and civilian experience and current status.* The state in a period includes years of AC service, years of RC service, and years since entering military service, as well as the individual's current status, which is AC, RC, or C. The state could also be defined to include officer/enlisted, branch of service, and prior/non-prior service, but we omit these attributes for brevity because the model is estimated separately for each of these groups.
4. *The active retention or reserve participation choices available to the individual.* For someone in the AC, the choice set is to stay in the AC, transition to an RC and hold a civilian job, or transition to C without participation in the RC. For someone in the RC the choice set is RC and C, and for someone in C the choice set is RC and C.
5. *The value an individual assigns to different choices.* For someone in the AC, staying in the AC brings a current-period return of AC pay at that year of service, plus the discounted expected value of the maximum among AC, RC, and C in the next period, which, as mentioned, depends on reasoning forward and then reasoning backward. Transitioning to the RC brings a current-period return of RC pay plus a civilian wage, plus the discounted expected value of the maximum between RC and C in the next period. AC is not included in this choice because the model assumes the AC cannot be reentered once it has been left. Transitioning to C brings a civilian wage plus the discounted expected value of the maximum between RC and C in the next period. The values of the alternatives for someone currently in the RC, or alternatively currently in C, are defined similarly.
6. *A "finite horizon" (i.e., a maximum career length or maximum age limit) for active retention or reserve participation.* The final period is at age 60, the age at which no more decisions

² Since 1957, military personnel have been covered by the Social Security system. However, because civilian employment is also covered by Social Security, there is no net effect of Social Security benefits on the retention decision. Thus, we exclude Social Security in the model.

are required of the individual. AC or RC retirement benefits may of course be received after age 60, and the present value of these benefits is entered as a return at age 60.³

7. *Uncertainty.* Individual uncertainty over future events may cause an individual to raise or lower the relative values of the active, reserve, or civilian alternatives available. Uncertainty is characterized by random draws from distributions. The draws are annual shocks of uncertainty to the value of each choice (AC, RC, or pure civilian) that can be positive or negative. A positive draw adds value to an alternative, while a negative draw detracts. For instance, a positive AC draw might represent a favored assignment, and a positive C draw might represent an interesting new task. Most reservists hold civilian jobs and might keep the same job whether or not they participate in the reserves. For this and related reasons, the model allows for a common shock to RC and C as well as individual shocks. There is also an AC shock.

Basing the Model on Actual Retention Data

The decisionmaking model provides a rich framework for understanding retention behavior over a military career in the presence of uncertainty and allowing for different tastes among individuals. But for policy analysis, the model's credibility depends on whether it can accurately describe AC and RC retention behavior. The model structures retention decisionmaking in a dynamic program in which the individual wants to choose the best path. The model is tied to reality because the model's parameters are estimated using actual retention data and then examined to see how well the estimates match actual retention decisions.

To estimate the model, we use its mathematical structure along with assumptions about types of distributions for taste and shocks to derive expressions for transition probabilities given one's state. That is, as analysts, we cannot observe individual members' motivations and taste for service, or the random shocks they face, but we make an assumption about the distributions of tastes across members and the distribution of the shocks, and estimate the parameters of those distributions using data on actual retention behavior. A transition probability is the probability of choosing a particular alternative, e.g., active, reserve, or pure civilian, given one's current state. We assume that tastes have a bivariate normal distribution, which has the attractive property that AC and RC tastes, though different from one another, may be correlated. We assume that shocks have extreme value distributions, which leads to closed form (logistic) expressions for each transition probability, an aid to estimation. So, for each period and state we derive an expression for the probability of each possible choice. For an AC member in YOS 5, for example, there are expressions for the probabilities of staying in the AC, transitioning to the RC, and transitioning to a civilian job. Since the transition probabilities in different periods are independent of one another—the model is Markov—the transition probabilities for each period can be multiplied together to obtain a probability for any given sequence of transitions over a career, or in other words, a probability for any given AC, RC, or civilian career profile.

³ Also, the model assumes that individuals live until age 85 and then die. This is a simplification but not far off from the DoD Actuary's assumptions (DoD Actuary, 2012). For instance, life expectancy at age 40 is age 83.4 for male officers, 85.1 for female officers, 78.9 for male enlisted, and 81.8 for female enlisted. The expectancy at age 60 is, respectively, 85.0, 85.9, 81.1, and 83.5.

We have longitudinal data on members entering the military in 1990 and 1991, with observations to 2010. Perhaps a member served eight years in the AC, became a civilian for two years, participated in the RC for six years, left, then spent two additional years as a civilian, and then subsequently served six more years in the RC. The model provides a probability expression for this career profile, and for those of every 1990/1991 entrant. Multiplying the career profile probabilities together gives an expression for the sample likelihood, which we use in estimating the model parameters.

Each probability, hence each career profile and the entire likelihood, depends on the same set of the model's underlying parameters, and these are the objects of estimation. The parameters include the mean and variance of AC taste and of RC taste, their covariance (or correlation), the variances of the two shock distributions, and the personal discount factor. In addition, the parameters to be estimated include switching costs representing the implicit cost of leaving active service in the first two years, leaving active service after the first two years, and leaving a civilian career to enter the reserves. Appendix E contains the parameter estimates. The model fit is quite good, as seen in graphics for active and reserve, officers and enlisted, by branch of service, in Asch, Mattock, and Hosek (2013). Thus, the model represents the global behavior of the force well, deriving that behavior from the decisions made by individual members.

Policy Simulation Capability

The model's mathematical structure and estimated parameters provide a foundation for simulating the effect of alternative compensation systems on AC and RC retention. The parameters pertain to the tastes of the population entering the military and the distributions generating the shocks occurring in each period and state. The parameters are the primitives of the model and are not functions of the compensation system but rather are conceptually independent of it. Thus the model can be coded to simulate the effects of alternative compensation systems. For simulation, we assume that the estimates of the underlying parameters remain independent of the alternative systems to be considered.

Key attributes of the current compensation system include a military pay line (average regular military compensation by year of service) and a wholly defined-benefit retirement plan that has vesting at 20 years of creditable service, eligibility to receive benefits immediately upon AC retirement and at age 60 if retired from the RC (or somewhat sooner depending on the amount of deployment), and a retirement benefit formula. Attributes of alternative systems might include a defined benefit (vesting year of service, year of service or age of eligibility for start of benefits, formulas for AC and RC), a defined contribution based on DoD contributions (minimum years in the plan before contributions begin, year of service at which contributions end, vesting, contribution percentage schedule), supplemental current compensation (e.g., a bonus for completing a certain number of years of service, or a bonus conditional on continuation), and a transition payment (a payment conditional on separation after some number of years of service).

Although the specific values of system attributes could be specified beforehand, that would not assure they would be sufficient to meet manning objectives. But an important objective of the current analysis is for the compensation system to support a service's current force size and structure, even if they might be changed in the future. To achieve this, our simulation

can compute optimized values of continuation and transition payments, given a system's retirement benefit formulas and vesting and eligibility conditions. Thus, the simulation capability can help tune the compensation system to meet manning objectives.

Simulations can be done for the steady state and for the transition to the steady state. In the steady state all individuals are under the new compensation system, and their outcomes can be compared with those from a simulation of the baseline (current) compensation system. Steady state comparisons show how one system performs relative to another in the long term. But the transition to steady state is also of great interest. When a new system is introduced, how will it affect members currently in service, and will they be allowed to enter the new system if they choose to do so?

Simulations use a large number (e.g., 25,000 or 50,000) of synthetic individuals for a given service and for enlisted and for officers. A synthetic individual consists of draws from the taste distribution for active taste and reserve taste, and draws from the shock distributions for shocks for each period, over a 40-year career from age 20 to age 60.

A steady state simulation starts with individuals at the beginning of military service and follows them over 40 years. Decisionmaking moves forward in time, with shocks revealed to the individual only in the year in which they occur, not before. Based on the individual's current state and period, the model computes the probability of choosing AC, RC, or C, and a choice is drawn from a uniform distribution whose support represents the relative size of these probabilities, e.g., stay in AC. The state vector is then updated for the next period. Here, the state in the next period has one more year of AC service, no years of RC service, one more year of age, and the status is AC. Another choice is then made, and so on for future periods. The string of choices over the 40-year period provides a year-by-year record of the individual's retention in AC, participation in RC, and civilian employment C—a simulated career profile.

For a simulation of the transitional effects of the introduction of a new policy, the logic is similar, but the simulation must track the behavior of each cohort of currently serving members as well as new entrants, and do so in calendar time (Asch, Mattock, and Hosek, 2013). All new entrants in a transitional simulation—those who enter once the new system is implemented—are handled the same as in a steady-state simulation. Currently serving members, however, are under the baseline system in the past and under the new system in the year it is implemented. Their decisions fall under the old system if they are grandfathered, but can fall under the new system if they are permitted to opt in to the new system and choose to do so. Thus, their year of service at the year of implementation defines their cohort under the new system, and the number of individuals in that cohort who opt in to the new system, if allowed, depends on policy and personal choice, which the simulation also handles. The simulation keeps track of each individual's retention experience under the baseline system and going forward under the new system, given its rules for opting in and the individual's opt-in decision. Grandfathering and the rules for opting in are features of implementation policy and can be coded into the simulation; for instance, opting in could be limited to members with 5–10 YOS, and the opt-in window could be open for two years.

The transitional simulation keeps track of individuals in each cohort (where, as mentioned, cohort is defined by the member's year of service at the time the new policy is implemented) as they move through their military career and afterward. The simulation also keeps track of calendar time, so in any calendar year the simulation knows the retention of cohort members under the old system and under the new system and can aggregate across individuals for a service-level retention profile by year of service for a given calendar year, and of course

do so for a sequence of calendar years. Such a sequence shows how the retention profile of service members present in each calendar year evolves over time, in effect forming a movie of the impact of the new compensation system on the retention structure of the force. The structure moves toward its steady state as cohorts of members serving when the new system was implemented gradually flow out of the force and the force becomes wholly populated by members who entered after the year of implementation.

Several types of output are produced for steady-state simulations. These include, for the AC and RC separately, graphics of the retention profile (cumulative retention by year of service) and tables of the cost of current compensation, the cost of deferred compensation, and their sum, the total cost of compensation. The cost of deferred compensation is computed under the entry-age normal system, the accounting procedure used by the Office of the Actuary in the Department of Defense.

Conclusion

The DRM is well suited to analyze alternative military compensation systems with respect to their effect on retention, cost, and outlays in the steady state and during the transition to the steady state. The DRM incorporates forward-looking behavior, thereby allowing future as well as current compensation to enter current decisions, and the model provides a logically consistent framework for inter-temporal decisionmaking. Importantly, the model allows for individual preferences toward active and reserve military service—the “nontangibles” of service—and for uncertainty.

In applying the DRM to policy analysis, we estimate its parameters on retention data for the military services, affording a solid empirical grounding. The model has been estimated for each of the military services, for officers and enlisted personnel, for members who begin their career in the AC, and for members who begin in the RC without any prior service. The estimated model fits the data well; that is, when the estimated model is used to simulate retention behavior under the current compensation system, the retention behavior, when aggregated across the simulated individuals, comes quite close to the retention profile seen in the data. Thus, the model does a good job of capturing global behavior of the force, by modeling individual decisionmaking and aggregating up.

A wide variety of alternative compensation structures can be analyzed using the DRM. It accommodates defined-benefit and defined-contribution retirement plans with various vesting, eligibility, contribution rates, and benefit formulas, as well as incentive pays, such as continuation pay and separation pay. It allows these features to differ between the AC and RC. Extensive simulation capabilities have been developed for the DRM. These include steady-state and transitional simulations, with outputs including AC retention, RC participation, current and deferred cost, and outlays, shown in the steady state and, for transitional simulations, over time. Thus, the DRM and its simulation routines address many of the requirements for policy analysis outlined in this report.

Alternatives Considered by the Department of Defense Working Group

The DODWG on military compensation drew from the findings of past studies and commissions, as described in Chapter Two, to develop a broad range of retirement alternatives to consider. In the process, it also considered two external proposals, one made by the Defense Business Board in 2011 and another by the Army. Eventually, after much analysis and deliberation, the group settled on two design concepts. This chapter begins with an overview of the roles of the military retirement system. It then turns to analyses of alternative retirement systems: the Defense Business Board proposal, the Army 10-15-55 proposal, and a wide range of hybrid alternatives. Readers interested in only the alternatives that were included in the two design concepts developed and analyzed by the DODWG can skip to Chapter Five. The remainder of this chapter will be of interest to those who want to know what other alternatives were evaluated and why they were not considered for potential implementation.

Roles of the Military Retirement System

Military compensation, and the retirement system in particular, has multiple roles. On one hand, compensation rewards members for service to their country and is a key determinant of financial status and standard of living after leaving the military. Thus, any reform to military retirement must consider how proposed changes to the system could affect the financial well-being of members who are currently serving as well as military retirees. On the other hand, military compensation and the retirement system also affect the size, skill, ability, and experience mix of military forces. Consequently, compensation reform must also consider the role of military retirement and compensation as a human resource management tool and how changes to the system will affect force management goals. Both of these roles were considered in past discussions of military compensation reform, as the discussion in Chapter Two makes clear.

From the members' perspective, perhaps the most desirable feature of a retirement system is that it provides for old age. Also desirable is that the income they receive is low-risk and predictable, so that they have the assurance of receiving a known stream of income until they and their spouses die. Since defined-benefit plans explicitly define the benefit by a formula—and in the case of U.S. government employment, there is virtually no risk of default, so the receipt of the benefit is guaranteed—a defined-benefit retirement plan is highly desirable from the perspective of the service member.

Because of changes in federal laws governing private-sector pension plans in the 1970s, early vesting of retirement benefits is the rule among private-sector pension systems and even

commonplace among government plans, including the federal government. Early vesting allows members to become vested for retirement benefits earlier in their career. Because private plans have earlier vesting, early vesting of the military retirement system could increase perceptions that military compensation has comparable features to civilian compensation.

Portable benefits, as found in defined-contribution plans, would allow members to transfer their benefit when they leave the military. Under a defined-contribution plan, the contributions are defined by a formula, and the value of the individual's retirement fund depends on the level and timing of contributions to the fund, the investment allocations, and the performance of those investments over time. Defined-contribution plans also have the desirable feature, from the member's standpoint, of individual choice and flexibility regarding how the fund is invested.

Insofar as members leave the military before they exit the labor force, another desirable characteristic is that the compensation system eases the transition from military service to civilian employment, an important issue first considered by the First QRMC in 1969. Because the current military retirement system vests members at 20 YOS in an immediate annuity, most military retirees have a second career in the civilian sector before leaving the labor force. The current military retirement system both provides for old age and acts to smooth the transition to civilian employment. While a transition benefit is a desirable characteristic from the standpoint of the member, it does not necessarily need to be incorporated into the retirement benefit. The transition benefit could be explicit and separate from the military retirement formula.

From the standpoint of the services, a desirable feature of the retirement system is its role as a force management tool. Depending on how retired pay is computed, on how eligibility criteria are defined, and on when payouts are made, the system can be designed to induce members to stay until certain career points and then influence them to voluntarily leave when desired. For example, if longer careers are desired in some communities, the system could be designed to induce longer retention in those occupations. Similarly, it could be designed to induce shorter careers where desired. Designing the system in such a way would require expertise on the part of the services.

In addition, funding for the system must be predictable and not subject to unanticipated cuts. The services predict the future force size and experience mix for planning purposes, and if the aspects of compensation are uncertain or subject to cuts, this can hamper effective planning and subsequently whether plans are fulfilled. Finally, the retirement system must work in concert with other force management tools, including other elements of compensation, and it must meet the objectives of military compensation, including efficiency, robustness, and flexibility.

The Defense Business Board Proposal

In July 2011, the Defense Business Board (DBB) task group on modernizing the military retirement system issued a report that outlined major reforms to the military retirement system. The DBB sought to provide recommendations that would enable "the system to be fiscally sustainable, and recruit and retain the highest personnel required for our nation's defense." The DBB argued that private-sector plans have shifted away from defined-benefit toward defined-contribution structures "to address longer life spans and unaffordable costs," while the military system has remained by and large the same for more than 70 years. It also argued that military

retirement benefits are more generous and expensive compared with private-sector benefits, that the military retirement system is unfair to members who do not reach the 20-year vesting point, and that the “one-size-fits-all” structure of the system is inflexible.

The DBB recommended a comprehensive reform to the system that would replace the current defined-benefit plan with a defined-contribution plan. The plan could be based on the current federal TSP for military members, with the government providing annual contributions. While the DBB did not recommend specific features of a new retirement system, the broad elements of their recommended plan would cover both AC and RC personnel. It would establish a mandatory TSP for all military personnel with government contributions equal to 16.5 percent of “total pay,” i.e., not just basic pay but also special and incentive pays and allowances.

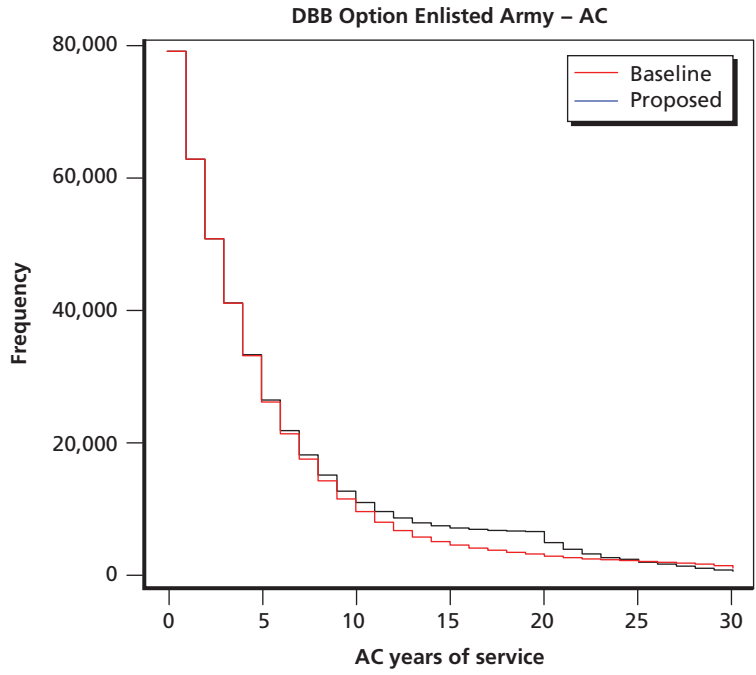
The plan would vest after three to five years, be payable between ages 60 and 65 or the Social Security age, and the payout options could include a lump sum or an annuity. The plan would allow partial withdrawals for eligible expenses, such as to cover education or health care. It also would recognize combat roles and other unusual duties by making double contributions for years in which members serve in combat zones or high-risk positions. (Recall from Chapter Two that the Defense Manpower Commission [DoD, 1976] recommended placing greater weight on years in combat occupations.) Furthermore, the DBB suggested consideration of a transition payment to facilitate the transition to a new career. The DBB argued that the new plan would enhance fairness, add flexibility, and be more affordable.

At the request of the DODWG, RAND analyzed the DBB proposal, including an evaluation of its force management and cost effects. In terms of advantages, some aspects of the DBB proposal are consistent with recommendations of past studies. For example, vesting at YOS 3–5 would enable more members to become vested in the military retirement benefit, and might enhance force management if a downsizing occurred, because most members would have a retirement account when they left. Furthermore, the structure of the defined-contribution plan would provide portability of benefits and allow members to own and have choice in the management of their retirement asset. The services could potentially target their contributions, which would offer some flexibility to shape retention.

The DBB plan has some distinct limitations. Foremost, it would hurt mid-career retention, especially among the officer corps, while at the same time inducing those who do stay to 20 years to stay far longer than 20 years. The simulated effects on AC enlisted retention are shown in Figure 4.1, and the effects on officer retention are shown in Figure 4.2. We conducted some additional analyses (not shown) where we nearly doubled the government contribution rate from 16.5 percent to 33 percent, and found little effect on retention. Because the benefit is paid out late in a member’s career—beginning at age 60 in our analysis—members, who are generally quite young, heavily discount the benefit. Consequently, fewer opt to stay for a 20-year career, even when contribution rates are 33 percent rather than 16.5 percent, and members who previously left at YOS 20 opt to stay.

While targeting contribution rates to those in high-deployment areas, such as combat arms, might possibly increase management flexibility in different occupational areas (e.g., address the so-called one-size-fits-all issue), the analysis indicated that targeting contribution rates has little effect on career lengths. Again, because members heavily discount benefits payable at age 60, doubling contributions has relatively little effect on retention, especially compared with other types of pay increases, such as an increase in cash compensation, e.g., basic pay or incentive pays. Finally, the DBB plan would expose the members to increased finan-

Figure 4.1
Simulated Steady-State Effect of DBB Proposal on Army AC Enlisted Retention



RAND RR501-4.1

Figure 4.2
Simulated Steady-State Effect of DBB Proposal on Army AC Officer Retention



RAND RR501-4.2

cial risk that could affect the value of their retirement benefits. While the added risk might translate to a larger retirement benefit, it could also lead to losses resulting in a lower benefit. The value of the retirement fund in a defined-contribution plan depends on how the fund is invested and the performance of those investments over time.

As shown in Figures 4.1 and 4.2, the DBB plan would change the experience mix of the force. To avoid this, the DBB plan could be supplemented with a transition pay to induce more members to stay until 20 YOS and then leave. Indeed, the DBB recommended that transition pay be considered as an element of its plan. Therefore, we analyzed a variant of the DBB proposal—we called it “DBB Plus”—that would alter the DBB plan by adding elements that would result in the same force size and experience mix as the current military compensation system. That is, we considered changes to the DBB plan to make it more like the hybrid structure recommended by past studies and commissions including the Defense Advisory Committee on Military Compensation and the Tenth QRMC. Specifically, DBB Plus¹ consisted of the following elements:

1. a transition payment of 3.26 times annual pay for Army enlisted personnel who left after reaching 20 YOS
2. a continuation pay equal to 1.4 monthly basic pay (i.e., nearly 1.5 times monthly pay) for those who reach 12 YOS and stay
3. a TSP with DoD contributions equal to 16.5 percent of basic pay.

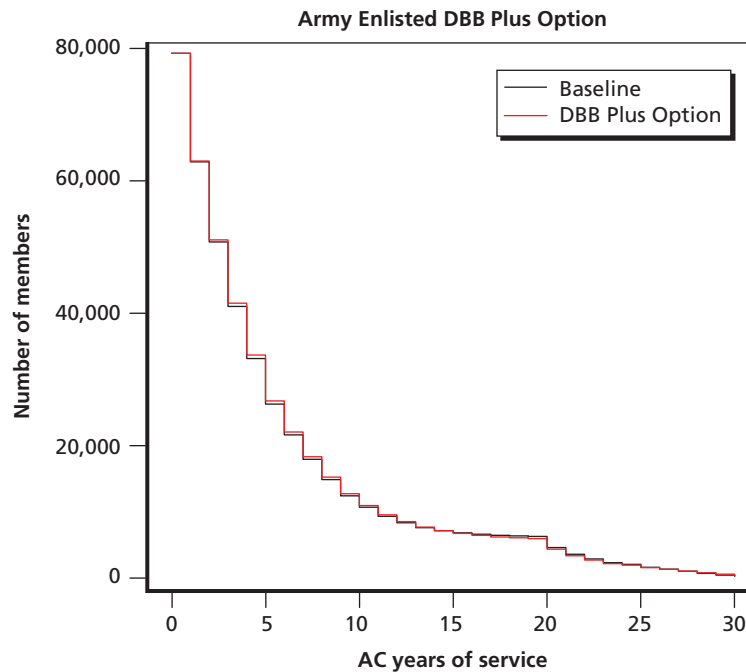
Elements 1 and 2 were calculated by embedding the DRM in a mathematical program to solve for the amount of continuation pay and transition pay that most closely matches the retention behavior seen in the baseline force. The purpose of the transition pay is to induce more people to stay until 20 YOS and then leave, and the purpose of the continuation pay is to fine-tune mid-career retention so that the force retention profile under DBB Plus replicates the force profile under the baseline.

Figure 4.3 shows the simulated retention results for the Army AC enlisted force for both the DBB Plus plan and the baseline, which is the current retirement system. Altering the DBB proposal by adding cash compensation in the form of continuation pay and transition pay can lead to retention results that are virtually identical to the baseline. Furthermore, DBB Plus costs less than the current system, saving \$0.5 billion for the Army enlisted force in the steady state. It is important to note that the cost savings produced by the DBB Plus plan depend on the specifics of the plan. We analyzed the cases when the government contribution to the TSP is 10 percent rather than 16.5 percent and when it is 30 percent. When the contribution rate is 10 percent, the cost savings are greater than \$0.5 billion for the Army enlisted force, but when the contribution rate is as high as 30 percent, cost savings are negative—that is, DBB Plus costs more.

This example shows how a hybrid structure, in this case based on the DBB plan, can sustain retention if it has the right elements. The DODWG rejected the DBB plan and opted instead to consider alternatives based on a hybrid structure that also included a defined-benefit

¹ DBB Plus is not quite the hybrid plan recommended by past studies and commissions, because it includes only two elements—a defined-contribution plan and higher cash compensation, rather than three elements—a defined-benefit plan, a defined-contribution plan, and higher cash compensation. Later, we discuss alternatives considered by the working group that included all three elements.

Figure 4.3
Simulated Steady-State Effect of DBB-Plus Proposal on Army AC Enlisted Retention



RAND RR501-4.3

element. While the DBB Plus plan we analyzed can “buy back the force” and sustain retention relative to the baseline, and at less cost than the baseline, the lack of a defined benefit plan was felt by the DODWG to create too great a financial risk to service members, who would not be assured of a known stream of income when they begin drawing retirement benefits. Thus, other options were considered, all of which included a defined-benefit component, as described later in this chapter.

The 10-15-55 Plan

In September 2011, the Army’s Office of Economic and Manpower Analysis at the U.S. Military Academy presented a pension plan alternative. The proposal was published by the Army War College in July 2013 and dubbed by its authors as the “10-15-55” plan (Wallace, Lyle, and Smith, 2013). The plan was a response to the DBB plan and concerns that the DBB plan did not adequately consider the effects on personnel inventory, service member well-being, public perception, and overall program cost.

The 10-15-55 plan includes three major elements:

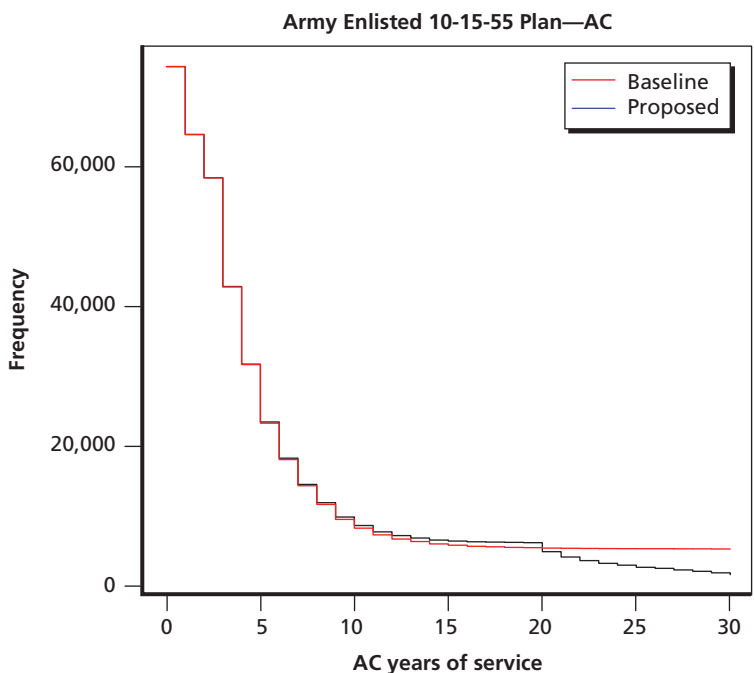
1. A defined-contribution plan that would vest members in 50 percent of their benefit at 10 YOS and 100 percent at 15 YOS. DoD contributions would equal 5 percent of basic pay beginning at entry, and would match optional member contributions dollar for dollar up to 5 percent of basic pay.

2. A defined-benefit plan with the same formula as today’s plan (e.g., 2.5 percent of high-3 basic pay times years of service, vested at 20 YOS) but members could not begin collecting the benefit until age 55. Unlike the current system, there would be no immediate annuity at 20 YOS during the member’s so-called second career in the civilian workforce. The name 10-15-55 stems from partial vesting of the defined-contribution plan at 10 YOS, full vesting at 15 YOS, and payout of the defined-benefit annuity beginning at age 55.
3. Higher current compensation in the form of a transition payment, equal to half a year of basic pay, made to those who leave after 20 YOS.

Proponents of the 10-15-55 proposal argue that it would be attractive to mid-career and career-minded service members, might increase the retention of high-quality personnel, would provide portable benefits, and recognizes the unique hardships of military service. They argue it largely preserves the traditional pension and is consistent with the evolution of private- and public-sector pension reform. Proponents also state that it would produce moderate cost savings overall as well as immediate savings in the form of a lower accrual cost. They argue that it achieves cost savings while maintaining the economic well-being of members. Although they do not present analyses of the retention effects of their proposal, proponents state that most importantly, it structures benefit receipts so that impacts on retention are minimal.

The DODWG asked for RAND’s assessment of the 10-15-55 proposal in terms of its effects on Army retention and costs, using the DRM. Figure 4.4 illustrates the retention effects for Army AC enlisted personnel in the steady state. We found that the 10-15-55 plan decreases retention among mid-career personnel with fewer than 20 YOS but increases retention among

Figure 4.4
Simulated Steady-State Effect of 10-15-55 Proposal on Army AC Enlisted Retention

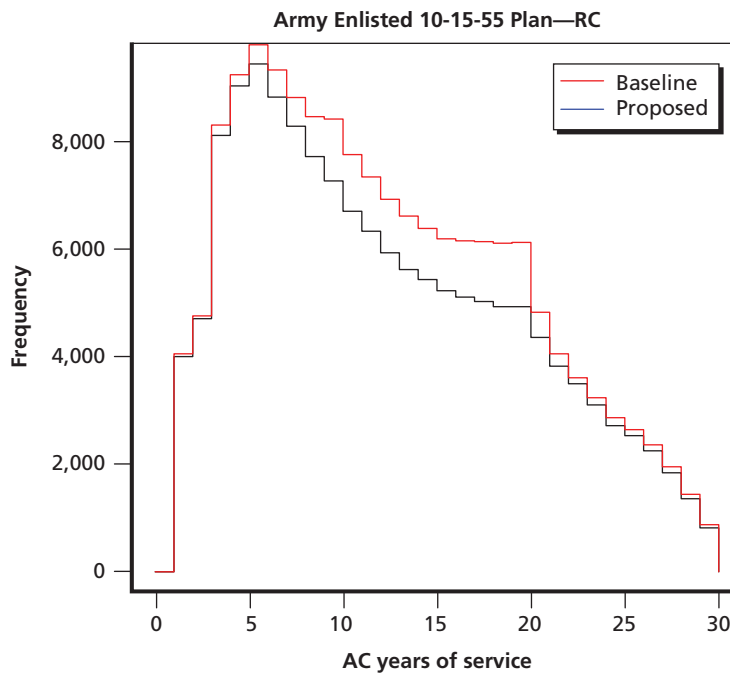


those with more than 20 YOS. That is, fewer people stay until YOS 20, but those who do stay do so for much longer careers. The Army enlisted force would become more senior, and this added seniority is costly. Specifically, personnel costs for Army enlisted personnel were estimated to increase by 10 percent in the steady state. The Army could act to limit the increase in seniority among its enlisted force by restricting the number of billets or imposing retention control restrictions for those with 20 or more YOS. Our model shows the voluntary retention response, not the effects of how the Army might respond to those retention changes. If the Army desired a force with an experience mix like the current one, the proposal would need to be altered in some way, such as by increasing the transition payment.

Figure 4.5 shows the simulated effect of the 10-15-55 plan on Army enlisted reserve participation among members with prior active service. Although AC retention prior to 20 YOS is lower in Figure 4.4, Figure 4.5 shows that RC participation increases in the mid-career. Thus, members who would have continued to serve in the AC in their mid-career now opt to serve in the RC. Participation after 20 YOS increases only slightly in the RC. Few of the additional reservists serving in their mid-career opt to stay longer, since, as in the current RC retirement system, members under the new system do not receive an immediate annuity. On net, the RC force experience mix becomes more heavily weighted toward those in their mid-career.

The assessment found that the 10-15-55 plan did not sustain the current AC force but produced a more senior one with a higher cost, and the DODWG decided to consider other alternatives.

Figure 4.5
Simulated Steady-State Effect of 10-15-55 Proposal on Army RC Enlisted Participation Among Those with Prior AC Service

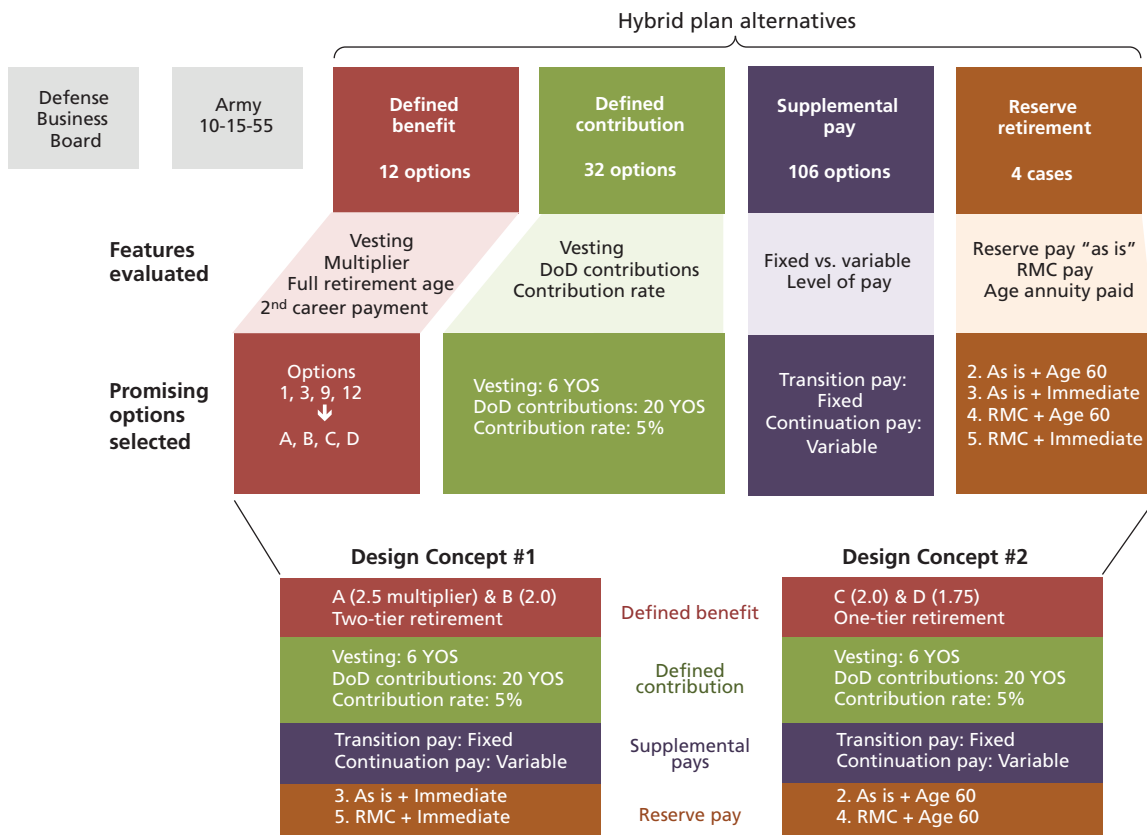


Hybrid Alternatives Considered

In addition to the DBB proposal and the Army’s 10-15-55 proposal, the DODWG also considered many reform alternatives based on the hybrid structure approach that emerged from past studies and commissions (Figure 4.6). As discussed in Chapter Two, the hybrid approach consists of three parts: a defined-benefit component, a defined-contribution component, and higher cash compensation (shown as supplemental pay in the figure). The group considered alternatives relevant for both the AC and the RC.

Initially, the DODWG considered 12 options that varied features of the *defined-benefit component* for AC members, the first element of the hybrid structure, and asked RAND to analyze the effects of these alternatives on retention, cost, and member financial well-being for each service, and for officers and enlisted personnel. For the second element—the *defined-contribution plan*—we were asked to evaluate 32 options for structuring the plan in terms of when members should be vested, over which years of service should DoD contribute to the plan, and what the DoD annual contribution should be. For the third element—higher cash compensation in the form of *supplemental pay*—we were also asked to evaluate the feasibility of a single, common transition pay multiplier (the same for all personnel, regardless of rank or service) versus a multiplier that would be fixed within service for officers and, separately, for enlisted personnel, but could vary by service for officers and for enlisted personnel.

Figure 4.6
A Framework for Evaluating Retirement Alternatives



Finally, we were asked to consider four cases for reserve retirement reform. The reforms for the AC would be the foundation of the reforms for the RC, but the cases for the RC involved two additional considerations. The first is whether RC members would receive an immediate annuity or an annuity generally beginning at age 60, as in the current system. The second is whether RC cash compensation would remain in its current form or be reformed along the lines recommended by the Eleventh QRMC. The QRMC recommended basing base RC cash compensation on a “day’s pay” approach, where RC members would receive regular military compensation, just like their AC counterparts, with additional incentive pay to sustain retention.

The large number of options, together with the need to conduct the analysis for each service, for the active and reserve components, and for officers and enlisted personnel, meant that RAND conducted thousands of simulations of retention and cost to support the group’s deliberations. These results were presented in more than two dozen briefings over a roughly 18-month period. We present the key analysis results here, starting with the 12 variants of the defined-benefit plan, assuming specific features of the defined-contribution plan, supplementary pay, and RC compensation. We discuss why some defined-benefit options were retained for further consideration and why most were eliminated. This discussion focuses on the AC results. We then turn to why specific features of the defined-contribution plan and supplementary pay were selected. Finally, the chapter concludes with the options considered for RC compensation and discusses why some were selected and others eliminated. In the end, the most promising options were combined into two broad design concepts described, which are analyzed in Chapter Five.

Defined-Benefit Alternatives

Table 4.1 summarizes the features of the 12 defined-benefit alternatives. The top part of the table shows the features of the defined-benefit component for each alternative. While vesting occurs at YOS 20 in all the alternatives except alternative 8, other features vary. The middle part of the table shows the features of the defined-contribution plan. The bottom part of the table notes the supplemental pays. The supplemental pays are optimized to sustain AC retention, and while the specific optimized values differ across the 12 alternatives (and across services in the case of continuation pay), the values have the common feature that they were selected to ensure that the AC force size and experience mix were sustained. We discuss the defined-contribution features later in this chapter.

The 12 defined-benefit alternatives in Table 4.1 maintain the current policy of vesting military personnel at 20 YOS and basing the defined-benefit annuity on high-3 annual basic pay, years of service, and a multiplier, but they vary three aspects of the defined-benefit plan in different ways. The first aspect is the percentage multiplier for those reaching their 60s, i.e., the end of their work life. Under the current system, the multiplier is 2.5 percent. The second aspect is whether retiring members receive a retirement annuity during their second “civilian” career. That is, they vary whether AC members receive an immediate annuity upon separation from the military before they reach their 60s. The third aspect is the second-career multiplier in those alternatives in which a second-career annuity is provided.

Initially, the DODWG only considered alternatives 1–8.

Table 4.1
Defined-Benefit Retirement Alternatives Initially Considered for AC Members

	Current System	1	2	3	4	5	6	7	8	9	10	11	12
Defined-benefit vesting	20	20	20	20	20	20	20	20		20	20	20	20
Defined-benefit multiplier in old age	2.5%	2.5%	2.5%	2.0%	2.0%	1.0%	1.0%	1.0%	NA ^a	2.0%	1.5%	1.0%	1.75%
Defined-benefit full retirement age	NA ^a	65	65	62	62	60	60	60	NA ^a	NA ^a	NA ^a	NA ^a	NA ^a
Defined-benefit payment in second career	Full	Partial	None	Partial	None	Partial	None	Partial	NA ^a	Full	Full	Full	Full
Defined-contribution vesting		6	6	6	6	6	6	6	6	6	6	6	6
Defined-contribution DoD contribution rate		5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Defined-contribution years of service over which DoD contributions are made		3–20	3–20	3–20	3–20	3–20	3–20	All	3–20	3–20	3–20	3–20	3–20
Transition payment		Fixed across services and for officers and for enlisted personnel											
Continuation pay		Varies across services and for officers and for enlisted personnel											

NOTE: The table also indicates features of the defined-contribution plan, transition pay, and continuation pay.

^a NA = Not applicable. Alternative 8 does not include a defined-benefit plan. Alternatives 9–12 make no distinction between the second career and old age. The annuity is the same during both periods under these alternatives.

- Alternative 1 provides the same multiplier of 2.5 percent as the current system, once members reach age 65, but a lower multiplier during the second career. Thus, during the second career, members receive a partial annuity.
- Alternative 2 is a variant of alternative 1; it also has the same 2.5 percent multiplier in old age, but no second-career annuity. Because the DRM optimizes the supplemental pays to sustain AC retention, the optimized values under alternative 2 differ from those for alternative 1, though those differences are not shown in the table.
- Alternatives 3 and 4 are also variants of one another. In this case, the old age annuity multiplier is 2.0 percent and would begin at age 62, rather than 2.5 percent at age 65, and again the optimized supplemental pays would differ to account for the different defined-benefit formula. Alternative 4 differs from Alternative 3 by eliminating the partial second-career annuity offered in alternative 3.
- Similarly, alternatives 5 and 6 are variants of one another. Here the old age multiplier is 1 percent and the old age annuity would begin at age 60, and alternative 6 omits the partial second-career annuity.
- Alternatives 5 and 7 are identical in terms of the structure of the defined-benefit plan, but alternative 7 has a different rule for DoD contributions to the defined-contribution

plan. Under alternative 7, DoD would contribute 5 percent of basic pay, regardless of a member's years of service. Under all of the other alternatives, DoD would make 5 percent contributions only for members in YOS 3–20. (We discuss defined-contribution plan features in more detail below.)

- Alternative 8 has no defined-benefit plan and consequently is the DBB Plus alternative discussed above. This alternative was included so that the DODWG could compare the DBB Plus results with the other alternatives.

RAND presented to the DODWG analysis of the force management and cost effects of these first eight alternatives. The DODWG opted to eliminate alternatives 2, 4, 6, and 7 and keep 1, 3, and 5, as well as keep alternative 8 (the DBB Plus plan) as a comparison case. Alternatives 2, 4, and 6 were eliminated because they had no second-career annuity; the DODWG felt that this created too great a financial risk to service members, especially those transitioning from military service to their civilian second career. The alternatives that were kept (1, 3, and 5) all included a second-career defined-benefit annuity, even though the annuity was a partial one. Again, alternative 8 was kept for comparison purposes.

The group then added four more alternatives—alternatives 9–12 in Table 4.1—to those it had kept (1, 3, 5, and 8) after the first elimination. The main difference between the newly added alternatives and *the current system* is that the new alternatives have a lower old age multiplier. Thus, alternative 9 has an old age multiplier of 2 percent rather than 2.5 percent. The main difference between the newly added alternatives and *the original ones* that were kept (alternatives 1, 3, and 5) is that all the new alternatives not only offered a second-career annuity, but the second-career annuity would be a full annuity, not a partial one, using the relevant old age multiplier. For example, alternative 9 includes a second-career annuity computed at the same 2 percent rate as the old age annuity.

Thus, alternatives 9–12 are similar to the current system in that they offer an immediate defined-benefit annuity to vested AC personnel, but at a lower multiplier. The lower multiplier ranges from 1 percent under alternative 11 to 2 percent under alternative 9. Alternative 10 sets the multiplier at 1.5 percent, while alternative 12 sets it at 1.75 percent. As before, the optimized values of the supplemental pays differ across these alternatives.

The DODWG eliminated alternatives 5, 8, 10, and 11. The remaining alternatives were 1, 3, 9, and 12. These alternatives were later named Options A, B, C, and D and formed the basis of the two design concepts that emerged from the group's deliberations, as described in Chapter Five (Concept I consists of Options A and B, and Concept II consists of Options C and D). Why were alternatives 5, 8, 10, and 11 eliminated? RAND conducted analyses of these alternatives for each service on the force management and cost effects, as well as their effects on military personnel. Table 4.2 presents a summary of the analysis, with detailed tables of results shown in Appendix A. For convenience, the top half of the table repeats information from Table 4.1 that describes the defined-benefit plan under each alternative, and the bottom half summarizes the analysis. (Table 4.2 shows the results only for the alternatives considered after the first elimination of alternatives, i.e., alternatives 1, 3, 5, 8, 9, 10, and 11. Alternative 12 was added after this analysis was conducted, but we have added the results here and in Appendix A for completeness.)

By design, all alternatives sustain AC force size and experience mix for each service, so the alternatives differed only in terms of their cost savings and impact on the member. All alternatives produced a cost savings to the government, though the amount of the cost savings

Table 4.2
Summary of Analysis of Defined-Benefit Retirement Alternatives 1, 3, 5, 8, 9, 10, 11, and 12

Alternative Number	1	3	5	8	9	10	11	12
Renamed Designation	A	B			C			D
Defined-benefit vesting	20	20	20	20	20	20	20	20
Defined-benefit multiplier in old age	2.5%	2.0%	1.0%	0.0%	2.0%	1.5%	1.0%	1.75%
Defined-benefit full retirement age	65	62	60	NA ^a	NA ^a	NA ^a	NA ^a	NA ^a
Defined-benefit payment in second career	Partial	Partial	Partial	NA ^a	Full	Full	Full	Full
Cost savings?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Impact on enlisted: Improvement in the value of a 20-year career for enlisted in all services?	Yes	Yes	No	No	No	No	No	No
Impact on officers: Improvement in the value of a 20-year career for officers in all services?	Yes	No	No	No	Yes	Yes	No	Yes

NOTE: Alternative 12 was added later and was not evaluated at this stage of the analysis.

^a Alternative 8 does not include a defined-benefit plan. Alternatives 9–12 make no distinction between the second career and old age. The annuity is the same during both periods under these alternatives.

differed. The area of concern was the impact on the member, and assessment of the impact led to elimination of alternatives.

For each alternative, we computed the discounted present value (DPV) of the value of a 20-year military career for enlisted personnel and for officers, in each service, using the personal discount rates we estimated as part of the DRM. Note that this computation assumes that a member would complete a 20-year career and then leave active duty for either the RC or the civilian labor market without RC participation. The value of a 20-year career in Table 4.1 and in the Appendix A tables is an indicator, but by no means a complete characterization, of the value of staying in the military. As the overview of the DRM discusses in Chapter Three, the value of staying depends on a number of factors, including the member’s current state, and the choice to stay in the military depends on, among other things, the value of all possible future paths, including but not exclusively the value of a 20-year career. Thus, one should not view the value of a 20-year career, as shown in Table 4.2 and in the tables in Appendix A, as the sole metric of how the alternatives affect service members’ well-being.

Because of differences in estimated personal discount rates and differences in the optimized supplemental pays required to sustain retention in each service for officers and for enlisted personnel, the impact on members differed across services and for officers and enlisted. Table 4.2 indicates “Yes” if the alternative led to an increase in the DPV of a 20-year military career for military personnel in each service, and “No” if the alternative decreased it for at least one service. Alternatives 5, 8, and 11 were eliminated by the DODWG because they did not

uniformly produce an improvement in the value of a 20-year military career across services. Alternative 3 and 9 also did not produce a uniform improvement, but because their improvements were close, these alternatives were retained by the group. Alternative 10 was eliminated because the DODWG deemed a 1.5 percent multiplier too low for the defined-benefit element of the retirement package. In fact, alternative 12, with a multiplier of 1.75 percent, was added as a compromise to alternative 10, but because it was a late addition, it was not evaluated at this stage of the deliberations (though we have added the results in Table 4.2 for completeness).

The DODWG retained the remaining alternatives 1, 3, 9, and 12 (later redesignated as Options A, B, C, and D) for further assessment.

Defined-Contribution Elements Considered

The DODWG discussed many alternatives for designing a defined-contribution plan. While the group coalesced around the idea of using the design of the TSP for federal employees as a foundation for the defined-contribution plan for military personnel, especially since military members can already voluntarily participate in the TSP, a number of questions remained open for discussion and analysis:

1. When should military personnel vest in the defined-contribution plan?
2. Over which years of service should DoD contribute to the plan?
3. What should be the DoD contribution rate?

To assess these questions, RAND used the DRM to simulate the force management and cost effects of different vesting and contribution provisions for alternatives 1 and 9 (or A and C) in Tables 4.1 and 4.2. Since alternatives 1 and 9 are examples of the first and second design concepts, respectively, the analysis spanned the two concepts that eventually emerged from the deliberations. Specifically, we considered four alternatives as to when full TSP vesting should occur: YOS 2, YOS 6, YOS 8, and YOS 10. We also considered four alternatives for when DoD should make contributions to the plan: YOS 3–20, Vesting YOS – YOS 20, YOS 3–40, Vesting YOS – YOS 40. We also considered two contribution rates: a 5 percent DoD contribution rate and a 5 percent plus a match of members' contributions up to 5 percent between YOS 10 and 20.

Consider the first question, of when vesting should occur. Table 4.3 shows the percentage of new entrants that would achieve vesting in the TSP at different years of service for officers and enlisted, by service, from the DRM baseline simulation. As can be seen, the percentage vested drops considerably when vesting moves from 2 to 6 YOS. For example, for Army enlisted personnel, the percentage vested drops from 79 percent to 24 percent, and for Air Force enlisted personnel the percentage vested drops from 88 percent to 45 percent. Still, the percentage vesting at 6 YOS is at least twice as large as the percentage of members vesting at 20 YOS in the current system. Cost savings are lower when vesting occurs earlier, though we found that the increase in costs associated with vesting at YOS 6 versus YOS 8 or 10 was not large.

Another factor weighed by the DODWG was the availability of other benefits to first-term members. The group felt that vesting at YOS 2 was too early and rewarded a group that would already qualify for a generous benefit, namely the Post-9/11 GI Bill. The group felt that the defined-contribution plan should be available only to members on their way to becoming part of the career force. Because of the longer enlistment obligation of six years in some

career fields, the group decided that vesting in the defined-contribution plan should occur after completion of YOS 6. At this point in a career, considerably more entrants would be vested, as shown in Table 4.3, relative to the current system, and although costs would be lower if vesting occurred even later, a vesting point after 6 YOS was deemed a sensible tradeoff between the cost to DoD versus the benefit to the member.

We found that ending DoD contributions at YOS 20 rather than at YOS 40 produced a discernable cost savings. For example, cost savings increased by about half a billion dollars for Army enlisted personnel when contributions ended at YOS 20 instead of 40. Furthermore, extending contributions through YOS 40 also increased retention after YOS 20, so that the ability of the services to replicate their current experience mix would be more challenging. The DODWG also considered other factors: (1) a defined-benefit component vesting at YOS 20 and (2) those separating after YOS 20 receive transition pay. Thus, members who reached YOS 20 would already be receiving benefits other than the defined-contribution plan. For these reasons, the range selected over which DoD would make contributions to the defined-contribution plan was YOS 3–20. YOS 3 was selected as a starting point so that DoD would have made some contributions for those members who left after YOS 6, and who would be vested in the TSP. That is, even minimally vested personnel would have a positive account balance.

Finally, the group decided to have a 5 percent automatic DoD contribution rate for all personnel with no requirement for matching contributions. Including a matching component could provide an incentive for greater contributions by military personnel to their own TSP funds, but the group chose to focus on compensation itself rather than adding an incentive to encourage a higher saving rate among personnel. We found that higher contribution rates by DoD, by either matching or automatic contributions, resulted in lower cost savings, with little effect on retention. The 5 percent rate is consistent with the maximum 5 percent federal contribution made to TSP on behalf of federal employees and was thought reasonable given that the retirement reform would also include a defined benefit and a transition payment.

Table 4.3
Percentage of AC Entrants Who Would Achieve Vesting

	Years of Service Completed to Vest	Army	Navy	Air Force	Marine Corps
Enlisted	2	79%	78%	88%	83%
	6	24%	28%	45%	22%
	8	16%	19%	34%	13%
	10	11%	14%	28%	9%
	20	7%	8%	16%	5%
Officer	2	97%	95%	96%	—
	6	69%	64%	72%	75%
	8	54%	47%	58%	58%
	10	45%	37%	50%	47%
	20	32%	23%	36%	31%

NOTE: Percentages are based on baseline retention predicted by DRM.

Reserve Compensation Alternatives

The DODWG also considered alternatives for changing reserve compensation. The alternatives for the RC needed to meet the broader objectives of military compensation, be well integrated and complementary with the recommended alternatives for the active compensation system, and address issues specific to the reserves and especially the increasingly greater use of reservists in an operational capacity.

For the most part, the features of each alternative considered for active compensation reform are also features extended to reserve compensation reform. Thus, the defined-benefit formula for the AC would also be the formula for the RC; if the multiplier was lower for the AC, it would be lower for the RC. The defined-contribution TSP for active members was extended to RC members; RC members would receive a DoD contribution of 5 percent of basic pay and vest after 6 YOS, like active members. Reservists in each alternative would receive reserve continuation pay, though the amounts would differ from the amounts received by the actives and reflect the amounts required to sustain reserve retention. But unlike the actives, reservists with more than 20 YOS would not receive transition pay upon separation under any alternative.

The group also considered RC compensation changes intended to address two differences between the active and reserve compensation systems that have received attention in recent years: reserve retirement and current cash reserve compensation. The current reserve retirement system vests at 20 YOS, like the active system, but unlike active members, reservists must generally wait until age 60 to begin claiming benefits. Regarding cash compensation, currently drilling reservists who perform duty one weekend each month receive two days of basic pay (and two retirement points) for each day of weekend service, but do not receive allowances for housing or subsistence (or the tax advantage associated with those allowances) for service on those days.

Recent studies and groups have questioned whether these differences support seamless total force management, and whether elimination of these differences would better recognize the increased operational roles for the reserves. Many have called for allowing RC members to receive retirement benefits immediately upon separation after 20 YOS, rather than wait until age 60, and several congressional bills sought to make this happen. Ultimately, Congress opted to allow reservists with extensive deployments to retire earlier than age 60—as early as age 54—and deferred the question of allowing immediate retirement receipt for all reservists.

As discussed in Chapter Two, the Eleventh QRMC recommended a four-part change to reserve compensation: regular military compensation (RMC) paid for each day of reserve service; 53 RC retirement points, one for each day of service plus 15 annual gratuity points for participation in the reserves; retirement eligibility after 30 YOS; and supplemental pay. That is, reserve members would receive one day of RMC for each day of service, even for drill days, that would include a day of basic pay and pro-rated allowances for housing and subsistence, computed in the same fashion as their AC counterparts. Under this “day’s pay” approach (also referred to as RMC approach), reserve members would earn one day of RMC for each day of service, regardless of duty status, and reservists would receive only one retirement point per day of service (plus 15 annual participation points). Because the day’s pay approach with the associated change in retirement points would result in a cut to cash compensation, the other two elements of the proposal—retirement eligibility after 30 YOS and supplemental current pay—were designed to offset the reduction in cash compensation. RAND analysis showed that the Eleventh QRMC approach would indeed sustain RC retention.

The DODWG considered subcases of the alternatives under consideration that focused on these two different approaches to RC compensation and that built on the Eleventh QRMC work, as shown in Table 4.4. In case 5, RC members would receive an immediate defined-benefit annuity upon separation after 20 YOS, exactly like their AC counterparts. Under case 4, RC members would generally begin receiving retirement benefits at age 60. In both cases 4 and 5, reserve members would be paid according to the day’s pay approach.

Cases 2 and 3 do not incorporate the day’s pay approach. These cases would leave RC compensation as is, with two days of basic pay for one day of drilling. Case 3 would allow an immediate annuity for reserve members upon separation after 20 YOS, like case 5, and case 2 would retain retirement benefit eligibility at age 60. Thus, case 2 would simply involve extending the features of the active compensation alternative to the reserves, such as a lower retirement annuity multiplier and TSP, but would neither provide an immediate annuity nor incorporate the RMC approach. (Case 1 would be to keep the RC compensation system as it is, and is excluded from the table.)

The four reserve compensation subcases, together with the four retirement reform alternatives (Options A, B, C, and D), led to 16 different possibilities. The DODWG narrowed these to eight by pairing cases 3 and 5, which offer an immediate but partial annuity for RC members, with Options A and B, which offer an immediate, partial annuity to AC members, and pairing cases 2 and 4 (eligibility for retirement benefits remains at age 60) with Options C and D (AC eligibility remains immediate upon separation after 20 YOS). Cases A and B provide a reduced second-career annuity for AC members. Since the annuity is a partial one, extending this feature to the reserves would be relatively less costly in Options A and B than in the options where a full annuity is paid in the second career, i.e., alternatives C and D. Thus, Options C and D retained the current feature of the reserve retirement system of requiring RC members to wait until age 60 to begin retirement benefits, while Options A and B provide an immediate annuity, albeit a partial one, to RC members.

These eight alternatives map to the two broad design concepts shown in Table 4.5 and described in detail in the next subsection. Options A and B represent variants of one concept, and Options C and D represent variants of the second. Each design concept can be pursued without any change to the RC pay system (cases 2 and 3 for the RC) or with the RMC approach (cases 4 and 5 for the RC). The DODWG left open whether the RMC approach should be adopted but wanted to ensure that the design concepts could work with or without

Table 4.4
Summary of Cases Considered for Extending
Compensation Reform to the RC

		Change in RC Pay System	
		No Change to RC Pay System	RMC Approach
Change in RC Retirement System	No Immediate Annuity	Case 2	Case 4
	Immediate Annuity	Case 3	Case 5

NOTE: Case 1 is excluded.

Table 4.5
Eight Retirement Reform Alternatives

	Concept I				Concept II			
	Option A		Option B		Option C		Option D	
	Case 3	Case 5	Case 3	Case 5	Case 2	Case 4	Case 2	Case 4
Defined-benefit vesting	20	20	20	20	20	20	20	20
Defined-benefit multiplier in old age	2.5%	2.5%	2.0%	2.0%	2.0%	2.0%	1.75%	1.75%
Defined-benefit full retirement age	65	65	62	62	NA ^a	NA ^a	NA ^a	NA ^a
Defined-benefit payment in second career	Capped at 25% of high-3 pay	Capped at 25% of high-3 pay	Capped at 16% of high-3 pay	Capped at 16% of high-3 pay	Full	Full	Full	Full
Defined-contribution vesting	6	6	6	6	6	6	6	6
Defined-contribution DoD contribution rate	5%	5%	5%	5%	5%	5%	5%	5%
Defined-contribution years of service over which DoD contributions are made	3–20	3–20	3–20	3–20	3–20	3–20	3–20	3–20
Transition pay multiplier	2.5	2.5	3.0	3.0	0.5	0.5	0.75	0.75
Continuation pay multiplier ^b	Varies by service							
RC retirement	Partial second career; full at age 65				None until age 60			
RC drill pay and points	"As is"	RMC	"As is"	RMC	"As is"	RMC	"As is"	RMC
Disability eligibility: unfitting conditions (plus minimum of YOS or DoD rating)	12 YOS or 30%	12 YOS or 30%	12 YOS or 30%	12 YOS or 30%	12 YOS or 30%	12 YOS or 30%	12 YOS or 30%	12 YOS or 30%
Disability retired pay multiplier (use only YOS, no VA offset)	2.5%	2.5%	2.0%	2.0%	2.0%	2.0%	1.75%	1.75%
Survivor Benefit Plan annuity (50% annuity for 10% of cost 25% for 5%, no VA offset)	Full	Full	Full	Full	Full	Full	Full	Full

NOTE: Options A, B, C, and D correspond to alternatives 1, 3, 9, and 12 in Tables 4.1 and 4.2.

^a No distinction between the second career and old age. The annuity is the same during both periods under these alternatives.

^b Optimized continuation pay multipliers are provided in Chapter Five.

the RMC approach. In the next chapter, we summarize the two design concepts, without additional description of the RMC approach, though it should be understood that the design concepts could include the RMC approach, and RAND conducted extensive analysis of the concepts with this approach included as well as without it. The results of the analysis are presented in the next chapter as well. The specific elements of the eight proposals are shown in Table 4.5, while their translation to the two broad design concepts is shown in Chapter Five, Table 5.1.

To support the development of the two concepts, RAND used the DRM to assess the effects of the alternatives, including the subcases in Table 4.4, on active retention and reserve participation. Early analysis made it clear that RC participation and force size would not be sustained under the alternatives being considered—reserve retention would fall—in the absence of supplemental pay for RC members. Thus, RC continuation pay was added to all of the alternatives. As discussed previously, the DRM optimizes on AC continuation pay and transition pay to find the level of these pays that sustain AC force size and shape. We extended the DRM to find the optimal pays to sustain both AC and RC retention. Because the RMC approach entailed a substantial change to RC compensation, the cases with the RMC pay approach (cases 4 and 5) required a larger increase in continuation pay than the cases without it (cases 2 and 3).

Specifically, in cases 2 and 3, continuation pay for RC members was modeled as a multiple of monthly basic pay, targeted to 12 YOS for enlisted personnel and 16 YOS for officers, where half of the payment is made at that year of service (“up front”) and the remainder is paid on anniversaries over the next four years. In cases 4 and 5, continuation pay is a two-part bonus in each year of service. The first part is a cash lump-sum amount, which is the same in each year of service, and the second part is an amount equal to a percentage of annual RMC for reservists. The DRM optimizes the RC continuation pay multiplier for cases 2 and 3 and optimizes the lump-sum amount and percentage amount in the two-part pay in cases 4 and 5. The continuation pay multipliers for active and reserve component members are discussed in Chapter Five.

Retirement Reform Design Concepts and Steady-State Results

Based on the analysis described in the previous chapter, the DODWG developed two broad design concepts for a hybrid retirement system. This chapter begins with a description of the two design concepts, covering why these two concepts were selected and an overview of their key elements. It then turns to the results of our analysis of the two concepts, which includes effects on active retention and reserve participation for officers and enlisted personnel, continuation and transition pay multipliers, cost and cost savings to DoD and the U.S. Treasury, and the effect of these modernization concepts on the retirement earnings of individual service members.

Two Design Concepts for a Hybrid Retirement System

The eight retirement alternatives described in the previous chapter can be characterized in two broad design concepts, as shown in Table 5.1. Broadly speaking, the two design concepts have three key elements. The proposed retirement system would include a defined-benefit plan similar to the current system, a defined-contribution component, and supplemental pays. It would also incorporate a revised disability retirement benefit and Survivor Benefit Plan. Under both concepts, the defined-contribution, disability, and survivor annuity are the same. The concepts differ in how the defined-benefit component is structured and in the supplemental pays.

Defined-Benefit Plan

Both concepts include a defined-benefit element similar to the current plan that vests at 20 YOS with an immediate payout for AC members upon separation. The benefit formula is based on high-3 annual pay, a multiplier, and years of service. Concept I has a two-tiered retirement benefit for both the AC and RC. The first tier gives a partial retirement benefit during the member's second career. Since members can retire after 20 YOS, many members go on to establish a second career in the civilian sector before leaving the labor force altogether. Notably, Concept I provides RC members a partial benefit during the second career, unlike the current RC system in which eligible members generally receive benefits only upon reaching age 60. Concept I's second tier begins when members are in their early 60s and pays full military retirement benefits. Concept II offers a single tier of benefits for both the AC and RC, with a multiplier less than the current 2.5 percent multiplier. Eligible RC members begin receiving benefits at age 60, as they do under the current system

Table 5.1
Two Retirement Reform Concepts

	Concept I	Concept II
Defined benefit	Two-tier retirement benefit for both active and reserve components Partial benefit during member's second-career years (for both active and reserve) Full benefit in old age Vests at 20 YOS	Single-tier retirement benefit with lower multiplier Active: full benefit during second-career years and in old age Reserve: benefit starts at age 60 Vests at 20 YOS
Supplemental pay	Continuation pay to sustain force Larger AC transition pay upon retirement to ease transition and encourage separation	Continuation pay to sustain force Smaller AC transition pay upon retirement to ease transition and encourage separation
Defined contribution	Thrift savings plan: Automatic DoD contributions, early vesting (e.g., after 6 YOS) with payout available at age 59½	
Disability	Disability: eligibility based on finding of unfitness and DoD disability rating of 30% or higher or at least 12 YOS	
Survivor benefit	Survivor annuity: 50% annuity for 10% cost or 25% annuity for 5% cost, no VA offset	

NOTE: VA = Department of Veterans Affairs.

Defined-Contribution Plan

Both concepts include a defined-contribution plan, specifically the TSP. Today, service members can voluntarily participate in the TSP. However, unlike the current TSP coverage for military members, DoD would make automatic contributions on behalf of military members equal to 5 percent of their annual basic pay. Members vest after 6 YOS, and the payout of benefits begins as early as age 59½. Members could manage their TSP accounts and allocate their funds across the various investment options offered by the TSP.

Supplemental Pays: Increases in Current Cash Compensation

Concepts I and II both offer supplemental pays, but the amount of those pays differs between the two concepts. The purpose of these pays is to sustain the size and experience mix of the force. While there is no presumption that the desired force of the future is the same as the present, it was deemed important by the group that any alternative under consideration be able to achieve the current force in terms of size and mix. Both concepts offer a lump-sum separation or transition benefit for those with at least 20 YOS that is equal to a multiple of final annual basic pay. The transition multiplier required to sustain the force is larger under Concept I than Concept II. To protect the funding for transition pay, the group wanted the multiplier to be the same across services and across enlisted and officer personnel; the funding for transition pay is rolled into the retirement accrual charge. Both concepts also include continuation pay, which is in addition to any continuation (e.g., special and incentive) pays currently offered to service members. Continuation pay is a multiple of monthly basic pay and is targeted to specific years of service to sustain retention; the continuation pay multiplier would vary by service, by officer and enlisted personnel, for the active and reserve component, and possibly by occupational area. For the purposes of the group's deliberations, continuation pay did not vary by occupation (but did vary along the other dimensions) and was targeted to 12 YOS for enlisted personnel and 16 YOS for officers. Continuation pay multipliers were determined during policy

simulations as the value producing the best fit to active and reserve force size and shape, given the other elements of the reform. The multipliers are reported later in this chapter.

Disability Retirement and Survivor Benefit Plan

In addition to the defined-contribution and defined-benefit elements, both concepts include a revised disability retirement benefit (described in greater detail in Chapter Seven) and a revised Survivor Benefit Plan. Members deemed unfit to continue in service and with a DoD disability rating of at least 30 percent or with at least 12 YOS receive a disability retirement benefit. The benefit is based solely on years of service, not on rating, and equals high-3 pay times years of service times a multiplier, where the multiplier is the relevant multiplier under Concept I versus II. Under Concept I, the multiplier would be the multiplier for the full retirement benefit, not the partial benefit.

Importantly, the revised disability retirement system eliminates the offset for receipt of VA disability compensation, and the defined-contribution element of the retirement plan would vest immediately. Members placed on the Temporary Disability Retirement List (TDRL), to be renamed the Interim Disability Retirement List (IDRL), would receive a benefit with a floor of 70 percent, which compares with a floor of 50 percent in the current system. Members found unfit but with a DoD disability rating of less than 30 percent or with fewer than 12 YOS would receive a lump-sum disability severance payment computed as it is in the current system. The formula for severance pay is two times years of service times current monthly basic pay, with a floor of 6 years of service.

Under the revised Survivor Benefit Plan, members who are retiring would have an option of either a 50 percent annuity for 10 percent of retired pay (either partial or full benefit) or a 25 percent annuity for 5 percent of retired pay. Furthermore, the revised Survivor Benefit Plan would eliminate the offset for receipt of VA Dependency and Indemnity Compensation (DIC) and, consequently, the need for the Special Survivor Indemnity Allowance (SSIA). Also, survivor benefits would be provided if the member died on active or reserve duty.

Steady-State Results

Using the DRM, we analyzed the plans under Concept I (Options A and B) and Concept II (Options C and D) described in the previous chapter. The steady-state policy simulations for each option and case provided output on AC and RC status by year over a 40-year work life-span for each simulated individual. We processed this information to generate force-level AC retention and RC participation by year of service and computed the cost of continuation pay. The DoD Actuary provided estimates of AC and RC retirement accrual cost under each plan, where this cost included the defined benefit, the defined contribution, the transition payment, and DoD disability compensation under the proposed, reformed disability system (Chapter Seven). The cost of a plan was the sum of the AC and RC retirement accrual and continuation costs.¹ The difference between these costs and those under the current system were an estimate

¹ There were also differences in the cost of current compensation under a plan relative to the cost under the current system, but because the retention profiles were so close the working group deemed these cost differences to be negligible. Also, an advantage of having Actuary estimates of the accrual cost was that the estimates were based on the official method.

of cost savings under a plan. We also compared payouts over time to members with those of the current system.

The main findings from the analysis were as follows:

- Both concepts sustain AC force size and shape.
- The concepts differ in their effect on RC participation:
 - The partial benefit provided under Concept I increases pre-20-YOS participation and decreases post-20 participation relative to the current system.
 - Concept II maintains RC force size and shape.
- Both concepts achieve steady-state cost savings, and the savings are higher when retirement multipliers are lower and transition payments are higher.
- Vesting in the TSP increases the percentage who leave the military with some retirement benefit.
- Both concepts change the timing and amounts of some components of compensation, but the payouts sustain retention and from the member's perspective are generally at least as valuable as those of the current system.

We first discuss the retention results. Because the results are qualitatively similar across the services for AC retention and RC participation for officer and for enlisted personnel, we focus on the results for the Army, while Appendix B contains the results for the Navy, Marine Corps, and Air Force. We then discuss the continuation and transition pay multipliers, the cost and cost savings for each option/case, and the notional payouts to AC and RC members under Concepts I and II.

AC Retention and RC Participation

Enlisted Personnel

Figures 5.1a–5.1c show results for Army enlisted personnel under Option A, with case 3 on the top of each figure and case 5 on the bottom. In all of the graphics, the black line is the current system and the red line is the proposal. Figure 5.1a is for AC retention, Figure 5.1b for prior active service RC participation, and Figure 5.1c for non-prior service RC participation. Figures 5.2a–5.2c are for Option B, and Figures 5.3a–5.3c and 5.4a–5.4c are for Options C and D, respectively, with case 2 on the top and case 4 on the bottom of each figure.

Under Option A, AC retention is extremely close to baseline retention in both cases 3 and 5 up to 20 YOS. Since continuation pay is one of four elements working simultaneously—the defined-contribution plan, the defined-benefit plan, continuation pay, and transition pay—it is more accurate to say that, given the parameters of the defined-contribution and defined-benefit plans (multipliers, vesting, age of benefit receipt) and the parameters of continuation and transition pay (formula, when paid), the optimized multipliers for continuation and transition pay perform well to sustain pre-20-YOS retention.

After 20 YOS, retention is a bit lower under A than baseline. The lower retention after 20 YOS results from a set of forces affecting retention after 20 YOS given that the member has reached 20 YOS. First, no contributions to the defined-contribution plan are made after 20 YOS, so the defined-contribution plan offers no marginal incentive to stay in service at that point in a member's career. Second, second-career benefits are lower under A than under

Figure 5.1a
Army Enlisted Retention, Option A, Active Component

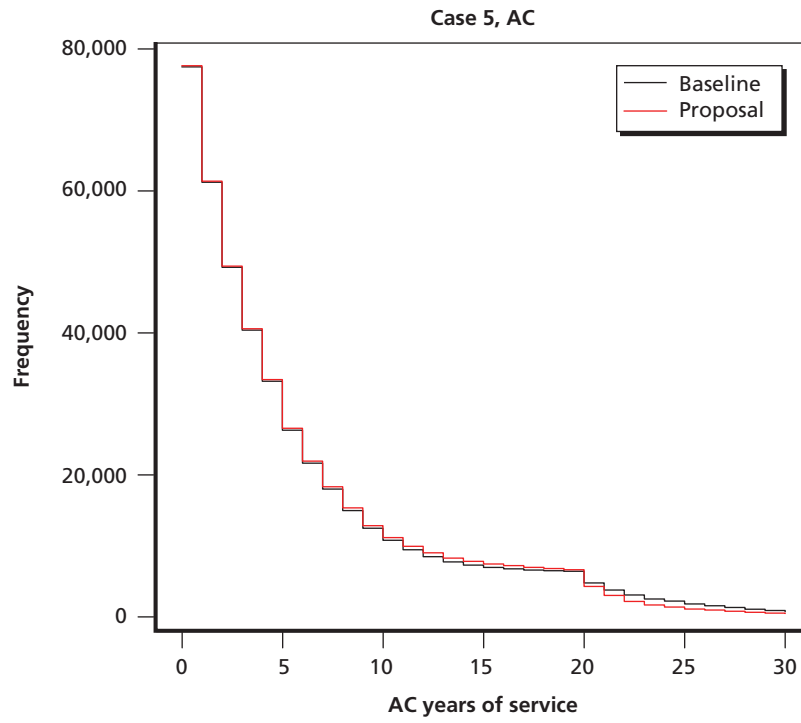
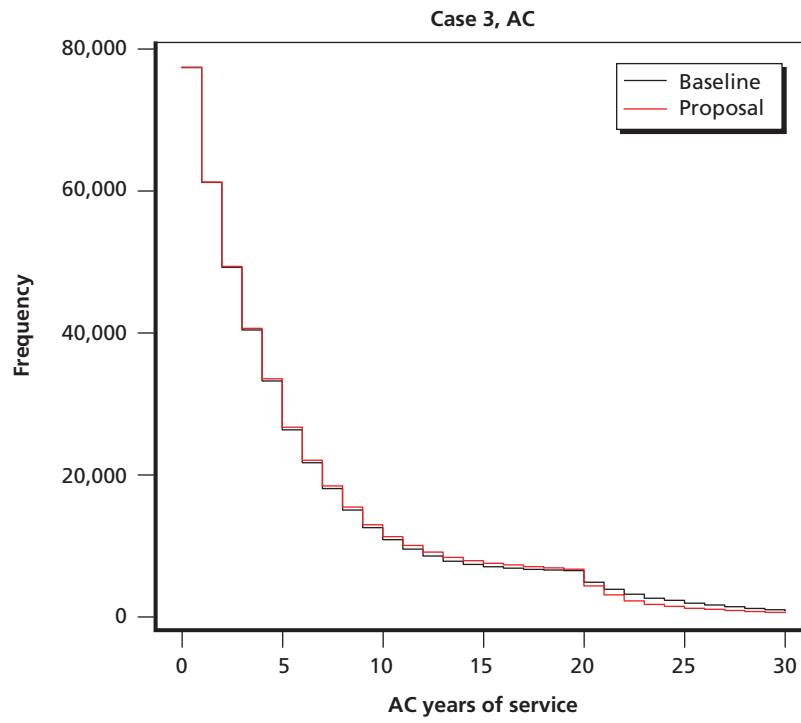


Figure 5.1b
Army Enlisted Retention, Option A, Reserve Component, Prior Service

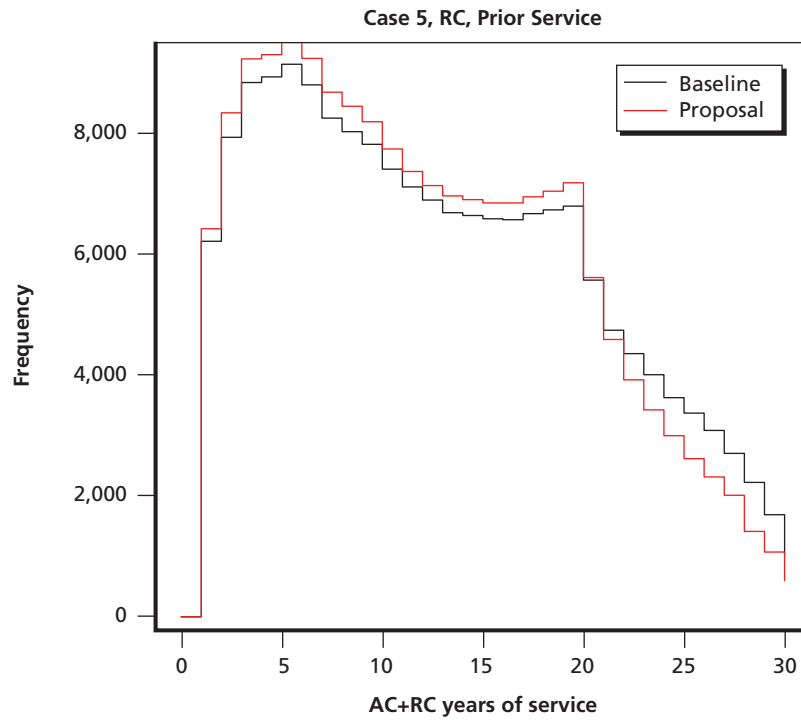
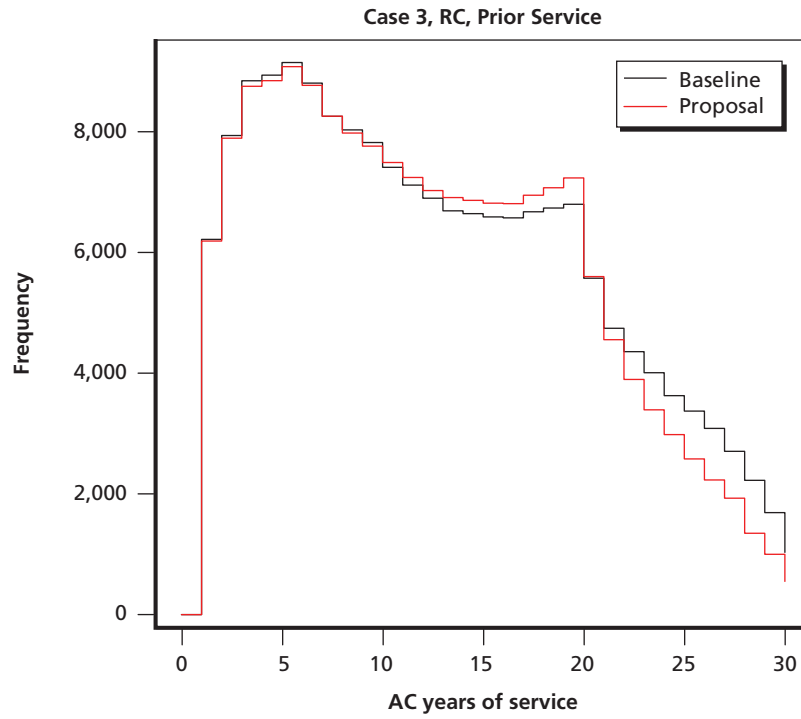


Figure 5.1c
Army Enlisted Retention, Option A, Reserve Component, Non-Prior Service

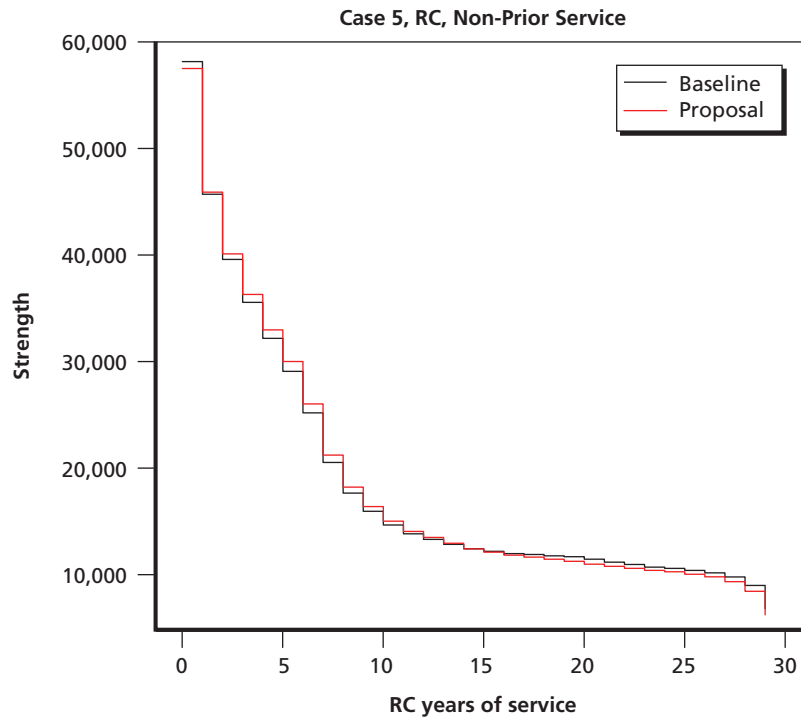
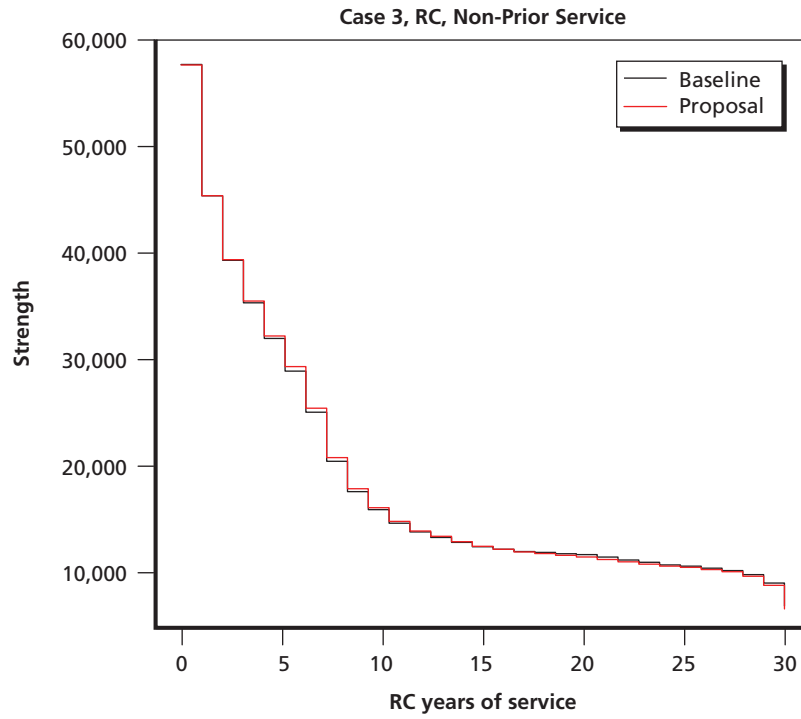


Figure 5.2a
Army Enlisted Retention, Option B, Active Component

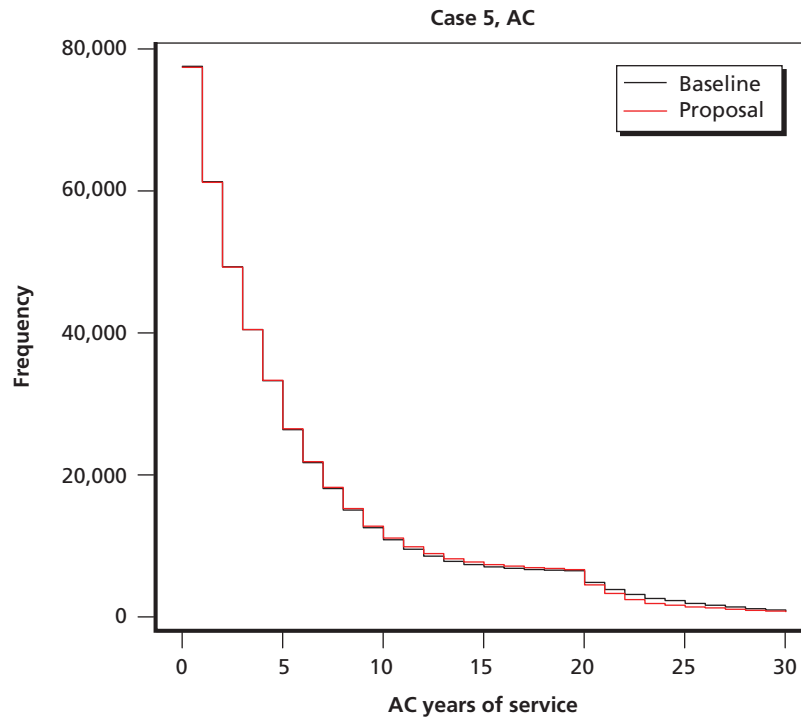
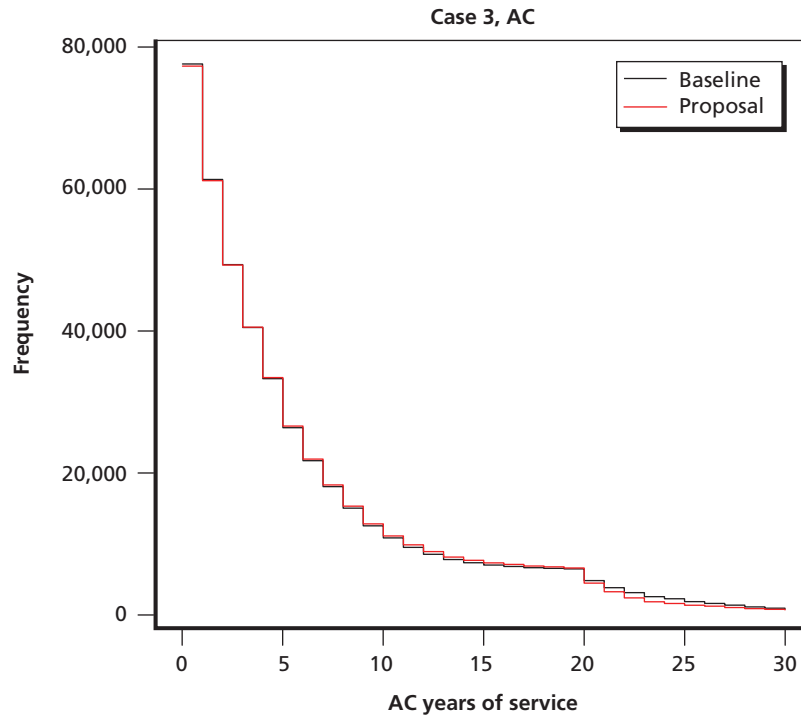


Figure 5.2b
Army Enlisted Retention, Option B, Reserve Component, Prior Service

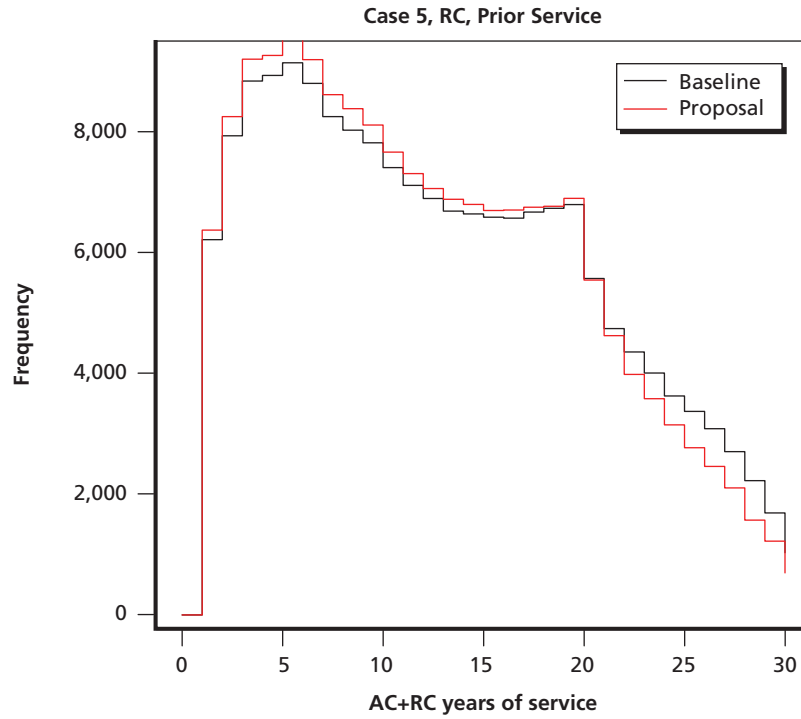
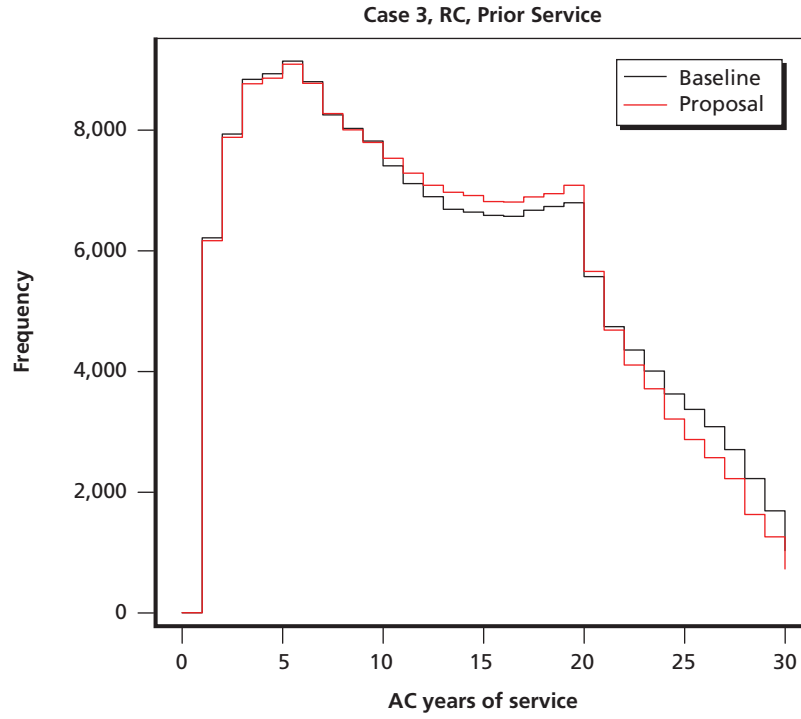


Figure 5.2c
Army Enlisted Retention, Option B, Reserve Component, Non-Prior Service

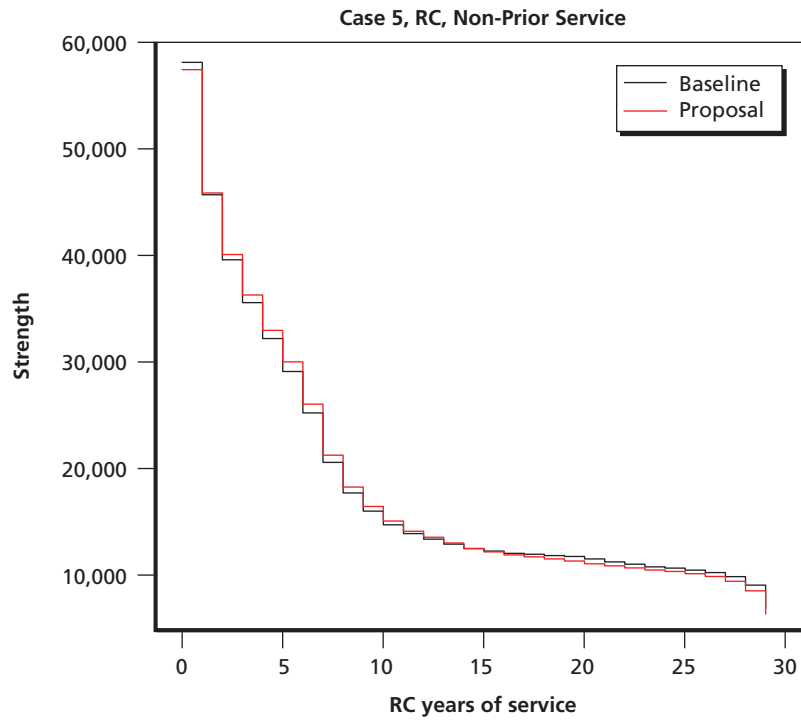
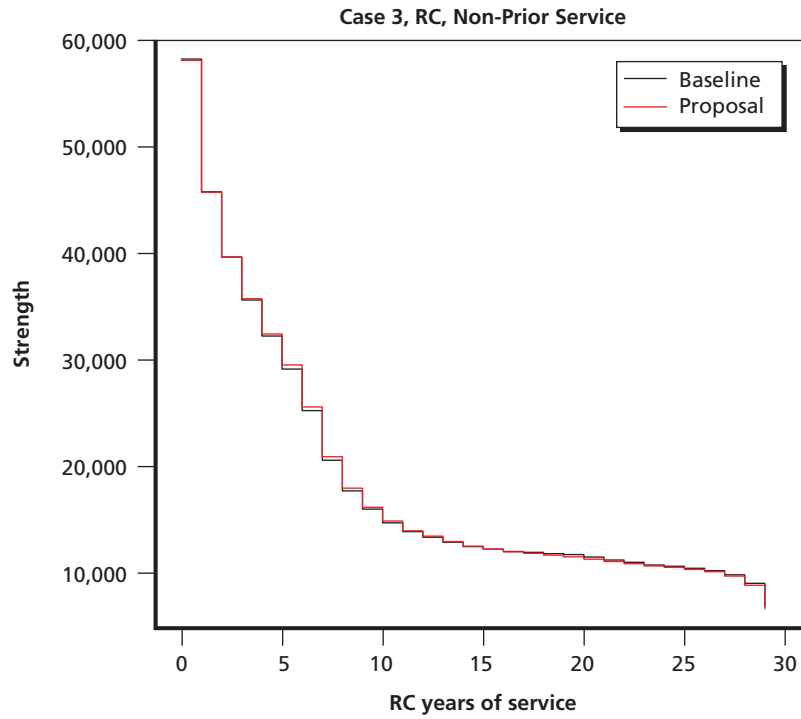


Figure 5.3a
Army Enlisted Retention, Option C, Active Component

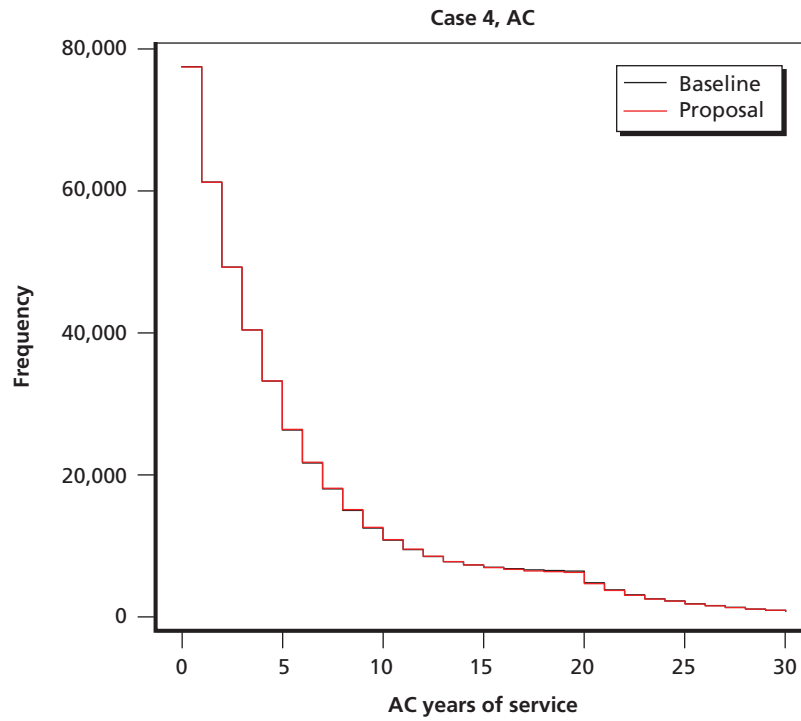
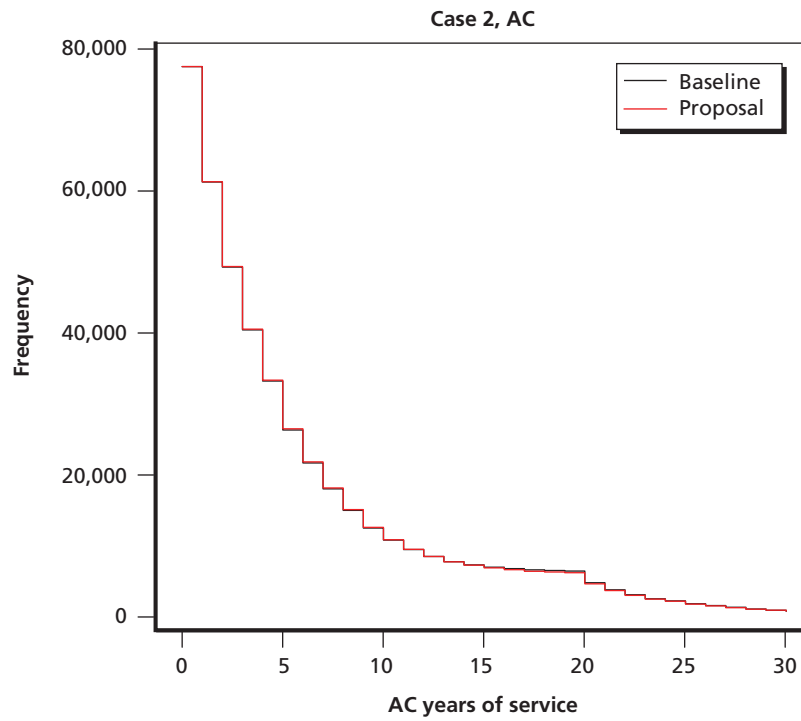


Figure 5.3b
Army Enlisted Retention, Option C, Reserve Component, Prior Service

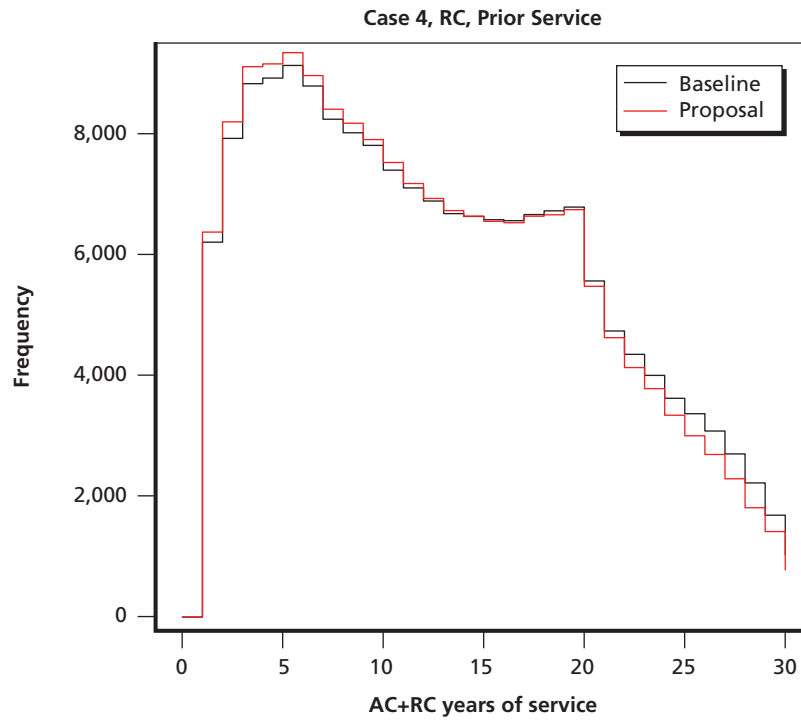
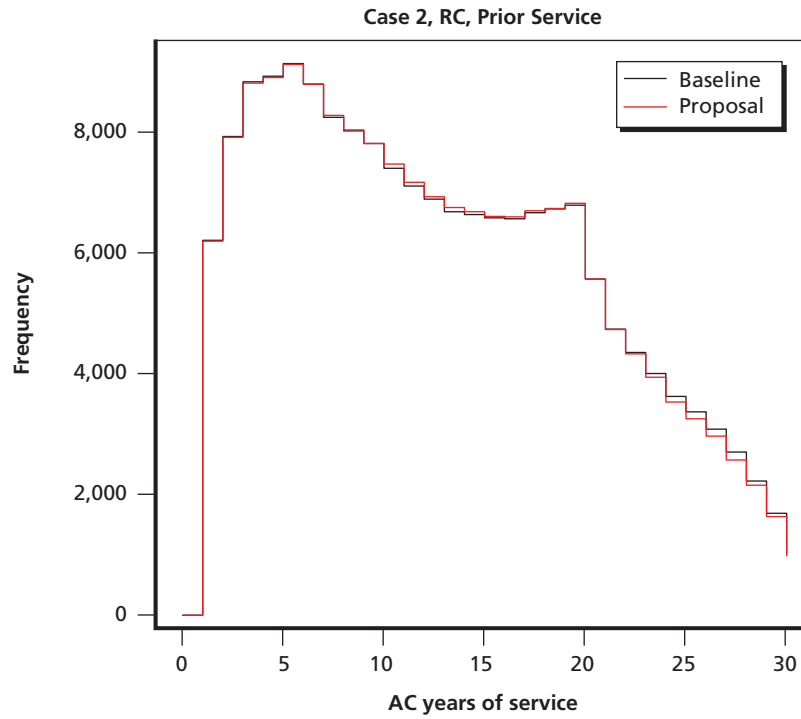


Figure 5.3c
Army Enlisted Retention, Option C, Reserve Component, Non-Prior Service

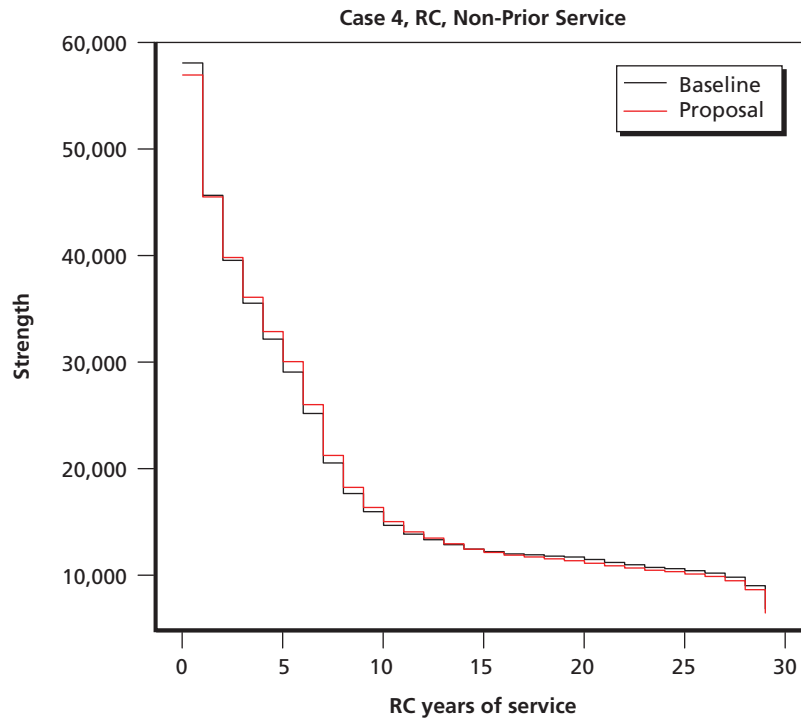
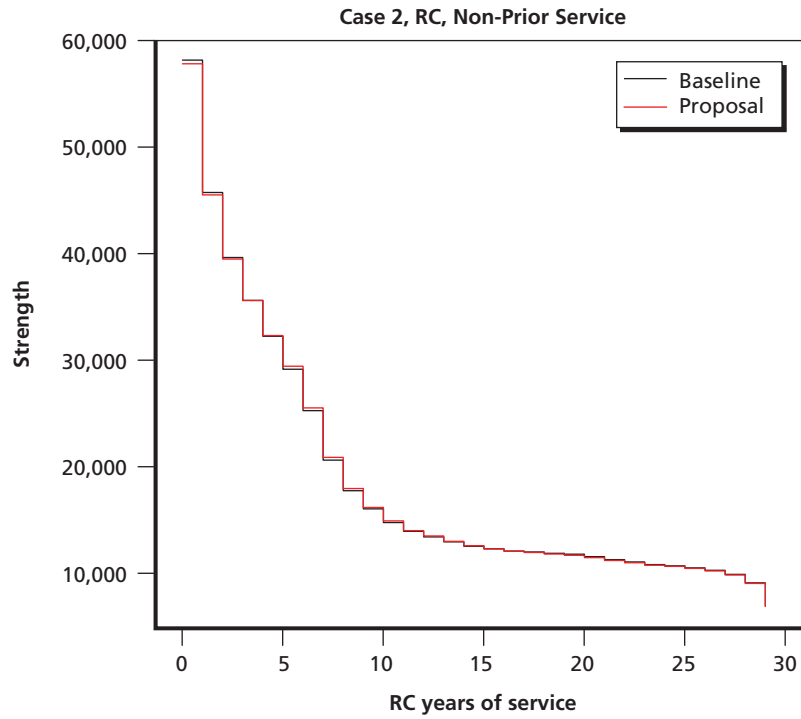


Figure 5.4a
Army Enlisted Retention, Option D, Active Component

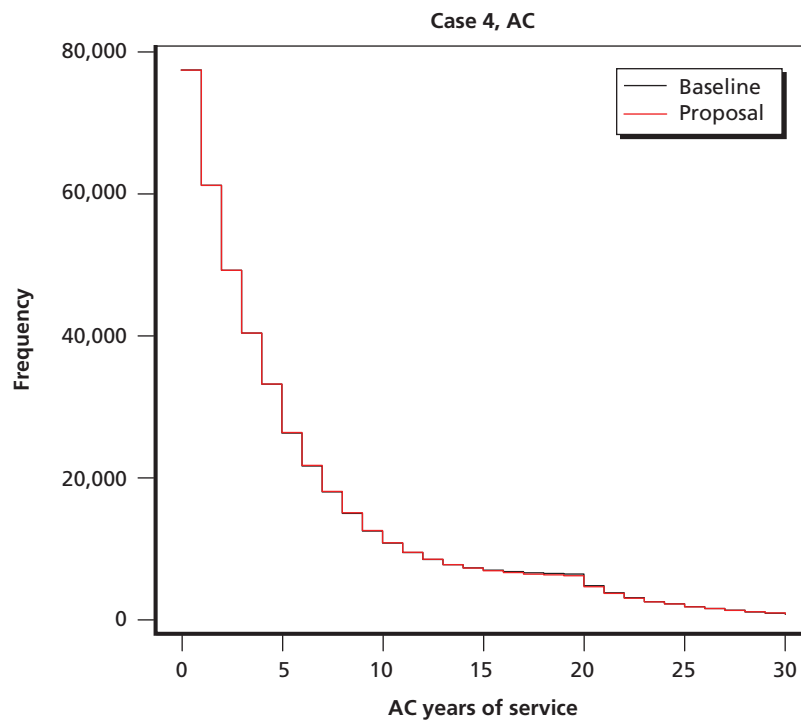
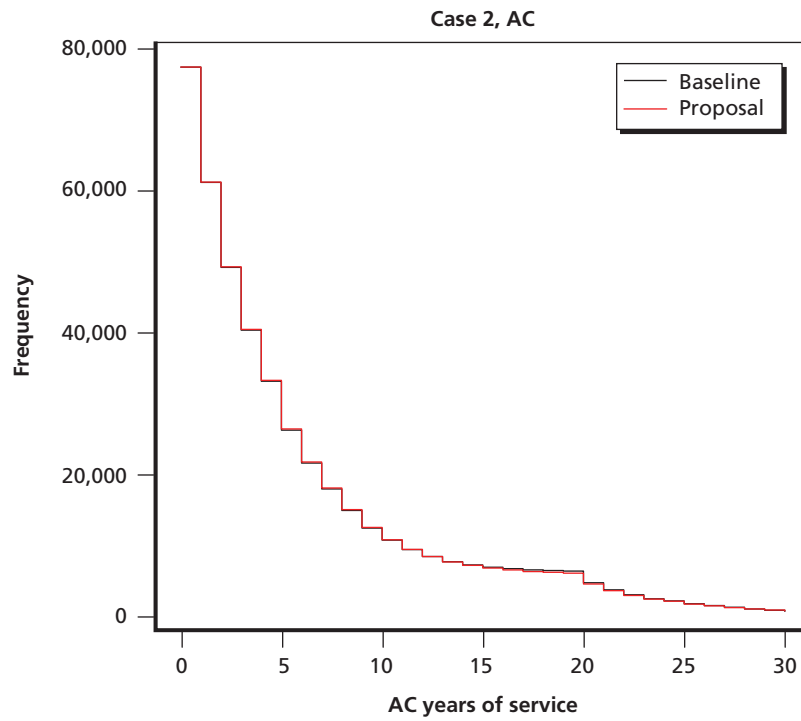


Figure 5.4b
Army Enlisted Retention, Option D, Reserve Component, Prior Service

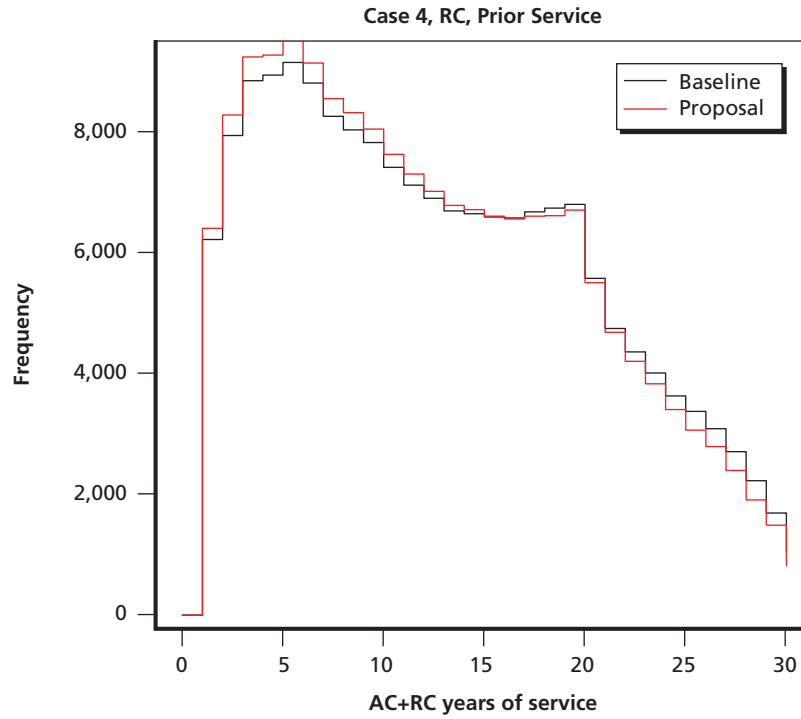
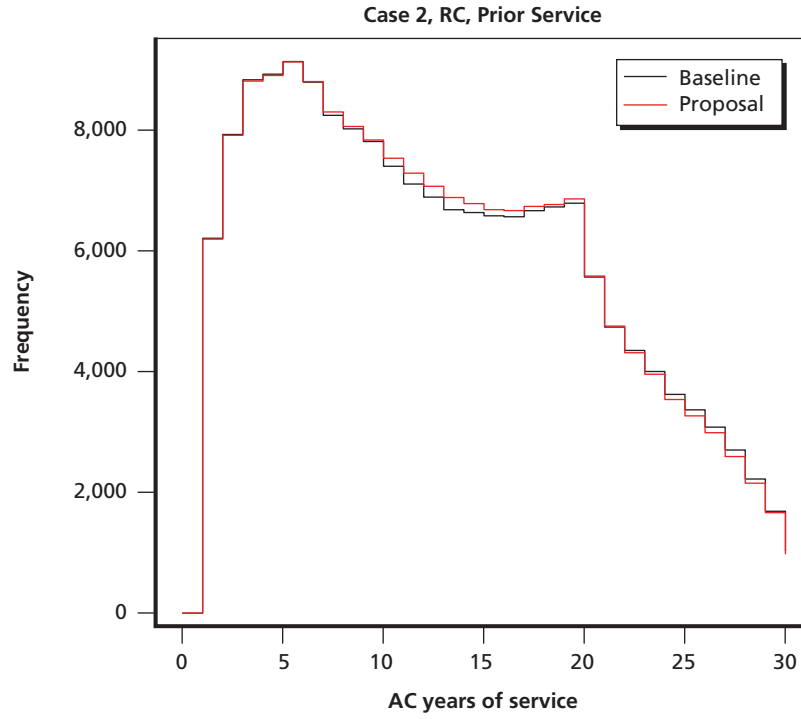
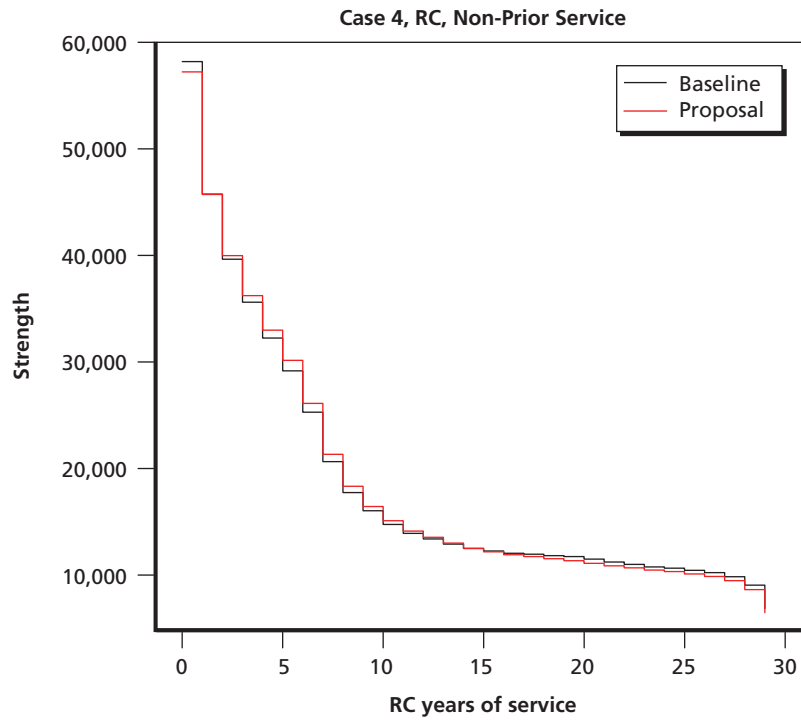
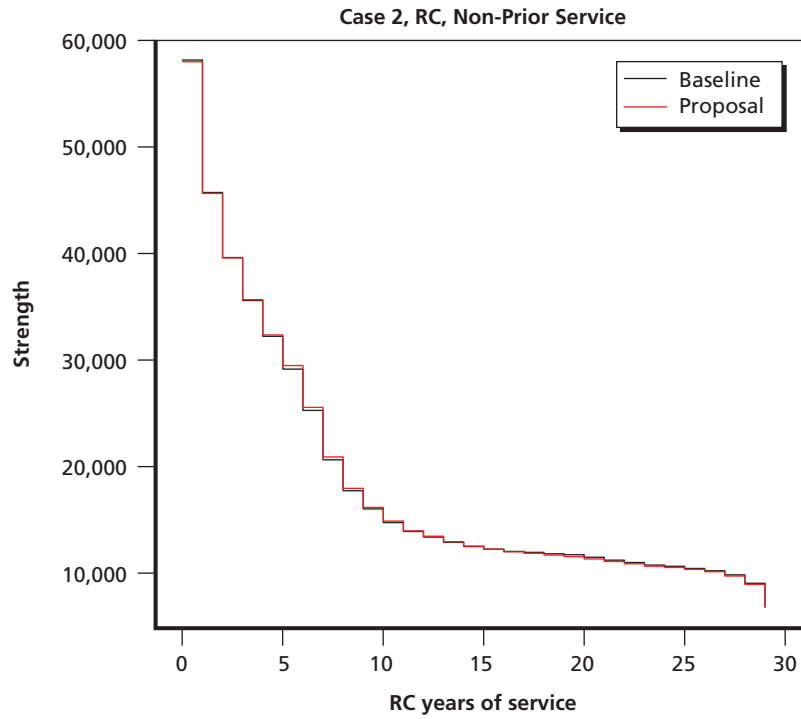


Figure 5.4c
Army Enlisted Retention, Option D, Reserve Component, Non-Prior Service



baseline. This means that the gains from staying another year are less. Under the baseline system, the benefit is 0.025 times years of service times high-3 basic pay, so the benefit increases with both year of service and basic pay, while under A the benefit is 0.25 times high-3 basic pay, so the benefit increases only with basic pay—hence the marginal gain from staying is less—and of course the size of the benefit is less than the baseline benefit. Both the lower marginal gain and the smaller size of the benefit decrease the incentive to remain in service and therefore decrease post-20-YOS retention.

Third, transition pay exerts two effects. Transition pay is the product of the transition pay multiplier times high-3 basic pay and therefore increases with basic pay, which encourages retention. The transition pay multiplier does succeed in keeping retention at the 20-year point equal to its baseline value, but it is not enough to overcome the decrease in post-20-YOS retention. The decrease in post-20-YOS retention tends to occur in all the services (see the results in Appendix B), which implies that the partial defined benefit—that is, the lower second-career benefit in A (and B)—is the driver of the decrease, and transition pay is not strong enough to overcome it. Supplementary analysis (not shown) indicates that an alternative formula for the partial defined-benefit annuity could rectify the decrease in retention after 20 YOS.

Figure 5.1b shows that RC participation is higher than the baseline before 20 YOS but lower after 20 YOS. Option A's second-career benefit, which is absent from the baseline system, apparently pulls more reservists to retirement eligibility and induces them to leave after reaching eligibility. Continuation pay might also be a factor explaining the higher pre-20 retention. In the top part of the figure, case 3, continuation pay is equal to the multiplier times RC monthly basic pay. Table 5.2 shows the multiplier as 1.06, so the total amount of continuation pay is only about one month's worth of RC basic pay, not a large amount. This suggests that

Table 5.2
Continuation Pay Multipliers: Enlisted

	Concept I				Concept II			
	Option A		Option B		Option C		Option D	
	Case 3	Case 5	Case 3	Case 5	Case 2	Case 4	Case 2	Case 4
Active								
Army	0.00	0.03	0.18	0.29	0.63	0.91	1.48	1.76
Navy	1.50	1.68	1.48	1.66	1.36	1.57	3.04	3.26
Air Force	1.50	2.03	0.62	0.68	0.10	0.03	0.92	0.60
Marine Corps	0.56	0.61	0.00	0.01	0.40	0.43	1.54	1.62
Reserve		a, b		a, b		a, b		a, b
Army	1.06	0.06, 0.23	1.43	0.01, 0.23	0.16	0.06, 0.18	1.04	0.07, 0.20
Navy	1.16	0.07, 0.25	1.19	0.08, 0.23	0.17	0.07, 0.22	0.72	0.08, 0.23
Air Force	1.22	0.02, 0.27	0.97	0.06, 0.23	0.21	0.03, 0.18	1.43	0.09, 0.19
Marine Corps	0.54	0.11, 0.16	0.83	0.54, 0.19	0.01	0.08, 0.18	0.37	0.13, 0.20

NOTE: Cases 4 and 5 RC continuation pay annual bonus has the formula:
 $f(a,b) = a \times 1000 + b \times (\text{Annual Reserve RMC})$. The values of a and b are shown in the table.

the main driver is not continuation pay but the presence of the second-career benefit. (Recall that there is no transition pay for the RC.)

The same explanation seems to hold for case 5 in the bottom part of Figure 5.1b. Here, the RC is under the day's pay approach, and continuation pay is structured to help compensate for the fact that current pay is lower under this approach than in the current system. Thus, RC continuation pay is not only set in the context of Option A's defined-benefit and defined-contribution plans, but also day's pay. The continuation pay formula in the day's pay cases, which are 4 and 5, is $a \times 1,000 + b \times (\text{annual reserve RMC})$, and an amount based on this formula is paid in each year of service in the RC. (For personnel with prior service in the AC, the value of years of service is the sum of AC and RC years.)

As Table 5.2 indicates, the parameters for Option A, case 5, enlisted are $a = 0.06$ and $b = 0.23$. So in each year the reservist receives \$60 plus about one-fourth of annual reserve RMC. As seen, RC retention is higher than baseline over years 1–20—and this higher retention helps to sustain overall RC strength in view of the lower retention after 20 YOS. The latter is a response to the second-career benefit offered under A. Note that post-20-YOS retention is the same for case 5 as for case 3. The difference in pre-20-YOS retention between cases 3 and 5 most likely derives from the difference in the continuation pay formula. By design, the formula in case 5 boosts compensation in every year of service, whereas the formula in case 3 pays at 12 YOS and can be expected to have less influence in the early years of service.

Figure 5.1c is for non-prior service RC participation, where *non-prior* means that the reservists have no prior AC or RC service at the time of entry into the RC. Cases 3 and 5 come close to duplicating the baseline profile. For these reservists, retirement benefits are likely to be much less than those of prior service reservists, though this will depend on how often they are activated and for how long. This simulation omits activation and focuses on the expected accumulation of retirement points in non-activation years. Under case 3, which has the current RC compensation system, the simulation assumes 75 points a year, and under case 5 (day's pay compensation), it assumes 53 points a year. A non-prior service reservist with no activation would accumulate 1,500 points in 20 years in case 3, which is $(1,500/360 =) 4.17$ effective years of service. By comparison, a prior service reservist with 4 or 8 years of AC service would have 7.33 or 10.5 years, respectively, and his or her retirement benefits would be higher. Similarly, contributions to the defined-contribution plan, which are based on annual basic pay, would be smaller for non-prior service reservists, so the DPV of the defined-contribution accumulation at age 60 would be smaller. Thus, deferred compensation is likely to play a smaller role, and continuation pay a relatively larger role, for non-prior service reservists than for prior service reservists. As seen, the approaches to continuation pay used in case 3 and case 5 both do well in replicating non-prior service RC retention.

Summing up, Option A can virtually replicate the size and experience mix of both the Army AC enlisted force up to 20 YOS, though with some decrease after 20 YOS. It also can replicate the non-prior service RC force. But it will cause some change in the prior service RC force, increasing retention in mid-career years and decreasing it in post-20 years.

The results for Option B are similar to A's results. The change in prior service RC retention is somewhat less, however. This reflects the lower value of the second-career benefit, namely, 16 percent of high-3 pay under B versus 25 percent under A.

Option C provides a close fit to baseline retention for AC and non-prior service RC for both pre- and post-20 YOS. Option C is like the current system in that AC benefits begin immediately and RC benefits begin at age 60, and C's multiplier is 2 percent. This means that

the structure of the defined-benefit system remains the same but the multiplier decreases; continuation pay and transition pay help to compensate for the lower defined-benefit multiplier. Defined contribution benefits also help, but they are unavailable until age 60 and are heavily discounted by younger members, so we can expect that continuation and transition pay play the main role in sustaining AC and non-prior RC service retention.

For prior service RC retention, in Option C, case 2 there is little change over the entire YOS range. That is, the RC participation and experience mix is sustained under Option C, case 2. In case 4, retention is somewhat above baseline in the junior years and below baseline after 20 YOS. These effects suggest that the formula for continuation pay is a little too generous in junior years and not generous enough in post-20 years. The junior year effect was described above. The decrease in retention after 20 YOS also seems traceable to the formula; it is the chief difference between case 2 and case 4, and case 2 fits post-20 baseline retention well. More specifically, in both cases there are no second-career benefits to consider and none of the options offer transition pay in the RC, so second-career pay and transition pay can be ruled out as possible causes. Cases 2 and 4 have the same defined-benefit formula, with benefits starting at age 60, and have the same defined-contribution benefits. Option C's lower defined-benefit multiplier decreases the gain from staying relative to baseline, and since benefits do not start until age 60, there is no immediate incentive to leave under either case 2 or 4. Also, after 20 YOS DoD no longer contributes to the defined-contribution plan, so the defined-contribution benefit at 60 is the same whether or not one continues in the RC after 20 YOS. Option D performs almost the same as Option C, and for the same reasons.

In sum, all four options do quite well in being able to reproduce AC retention and almost as well for RC non-prior service retention. Options A and B change the RC prior service experience mix, increasing pre-20 YOS retention and decreasing post-20-YOS retention relative to baseline. Options C and D in case 4 affect RC prior service retention in qualitatively the same way but with smaller effects; there is some increase in pre-20-YOS retention especially in junior years, and a decrease in post-20 retention. In case 2, C and D come close to replicating RC prior service retention.

Officers

Figures 5.5a–5.5b and 5.6a–5.6b show the results for Army officers for Options A and B, cases 3 and 5, respectively, and Figures 5.7a–5.7b and 5.8a–5.8b contain results for Options C and D, cases 2 and 4, respectively. There are no RC non-prior service officers, hence, there are no results for them. We analyzed Air Force rated and nonrated officers separately to allow for possible differences between these officer communities, and the results for each are in Appendix B along with the results for the other services.

Under Option A, AC retention tracks baseline retention until 15 YOS and then falls below baseline. Fewer officers reach 20 YOS, and retention is lower after 20 YOS. Lower retention in the years approaching 20 YOS indicates that Option A offers less gain to staying than in the current system, and apparently some of those who leave prior to 20 YOS join the RC and qualify for retirement there, as suggested by the increase in pre-20 retention in the middle panel. The partial second-career benefit in Option A is half or less the size of the benefit under the current system, which provides less incentive to stay in the AC at any given year after 20 YOS. Also, transition pay apparently does not offer enough of a boost to sustain officer retention to 20 YOS. However, there is also a pull from the RC. Option A (and B) offers a second-career benefit in the RC, so there is little difference in the second-career benefit if a

Figure 5.5a
Army Officer Retention, Option A, Active Component

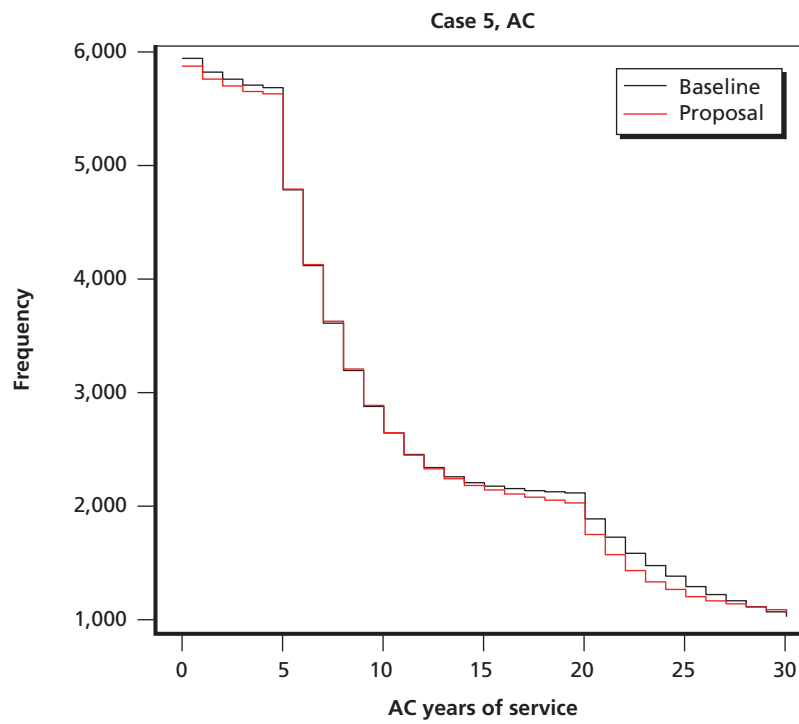
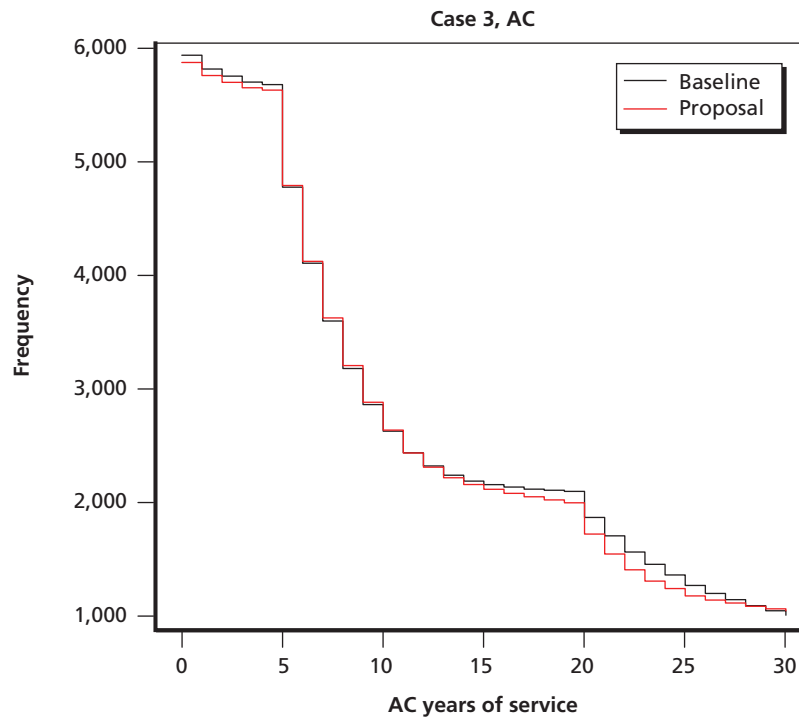


Figure 5.5b
Army Officer Retention, Option A, Reserve Component, Prior Service

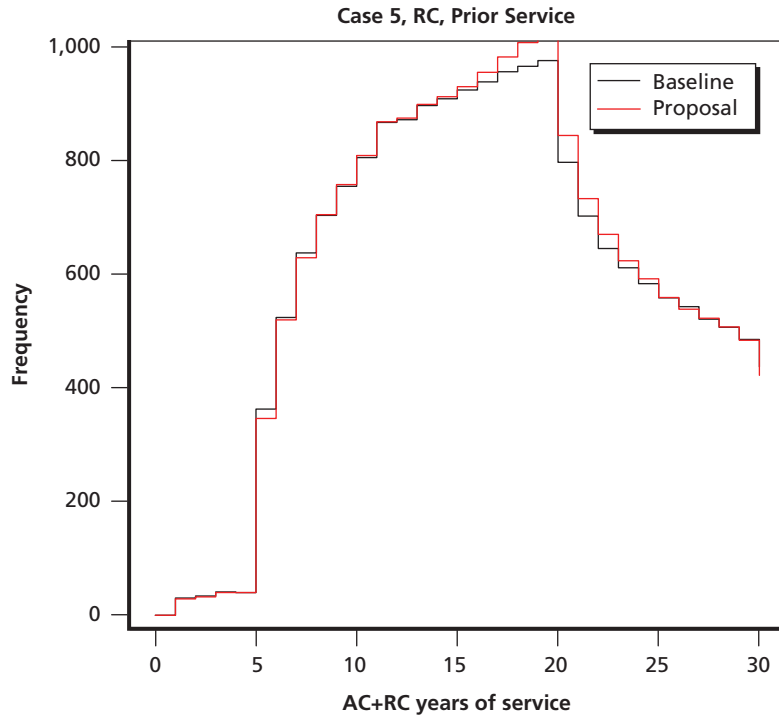
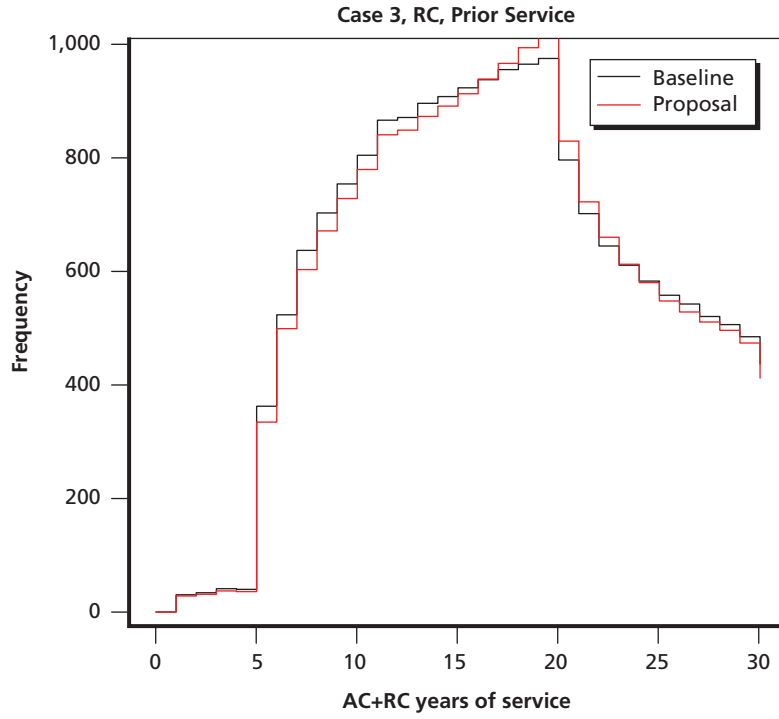


Figure 5.6a
Army Officer Retention, Option B, Active Component

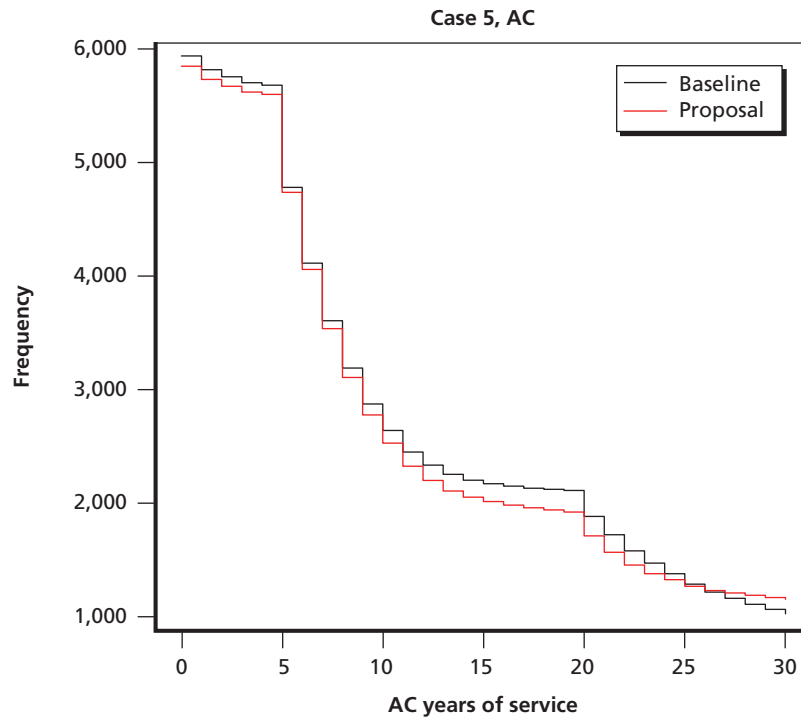
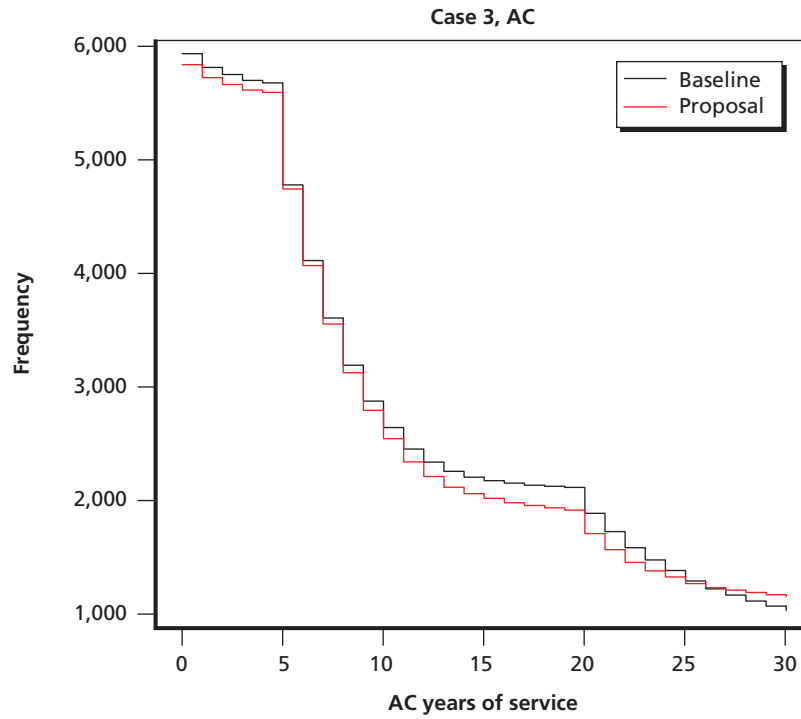


Figure 5.6b
Army Officer Retention, Option B, Reserve Component, Prior Service

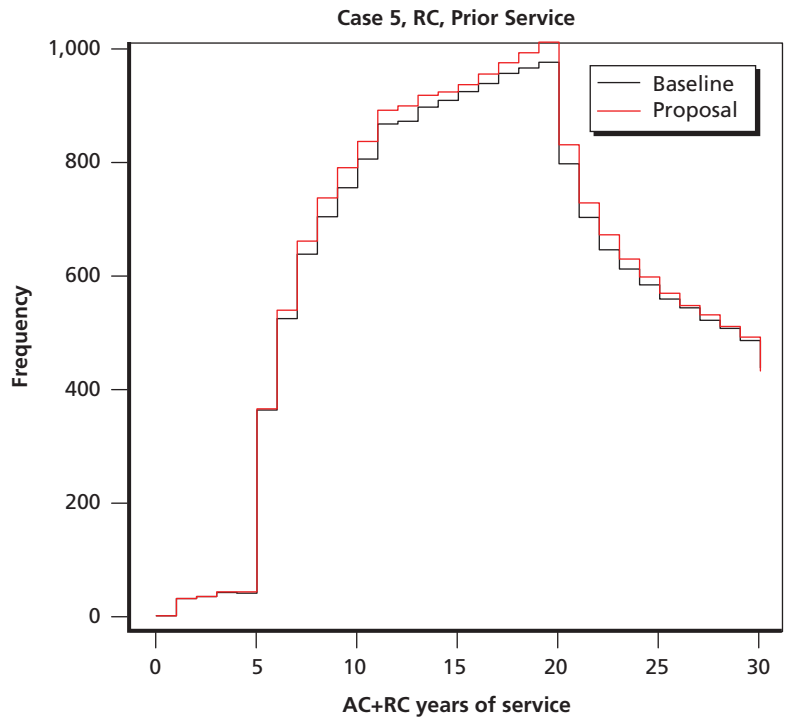
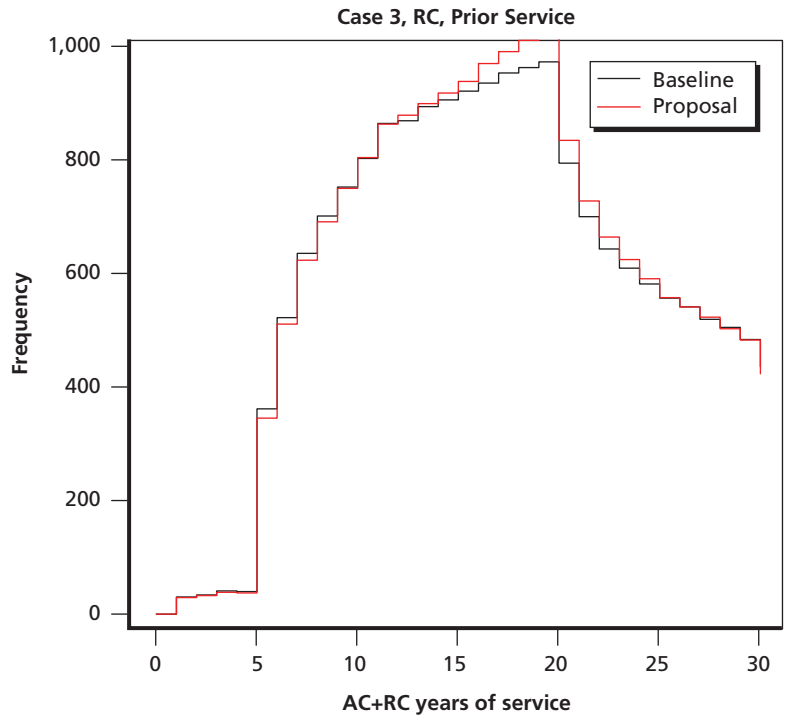


Figure 5.7a
Army Officer Retention, Option C, Active Component

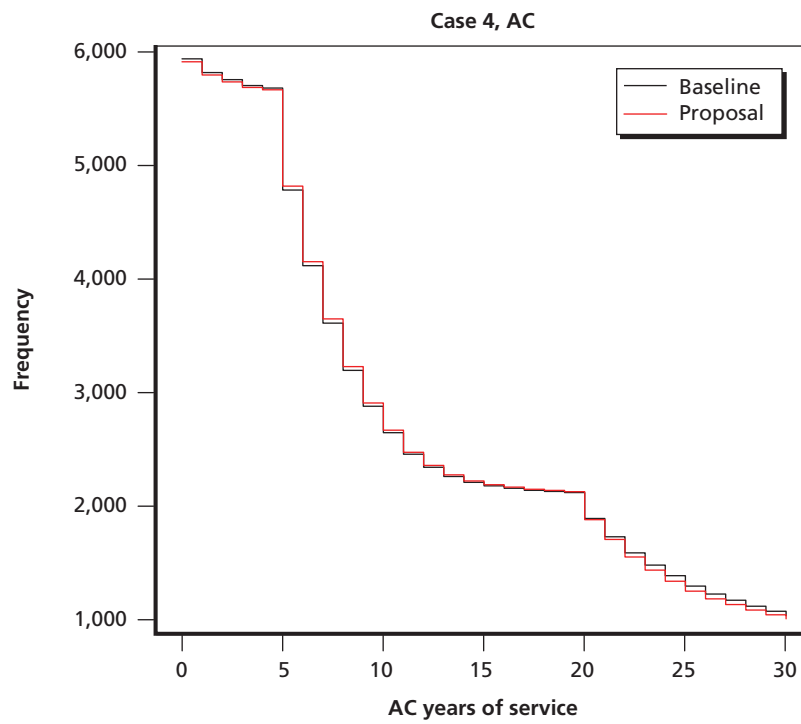
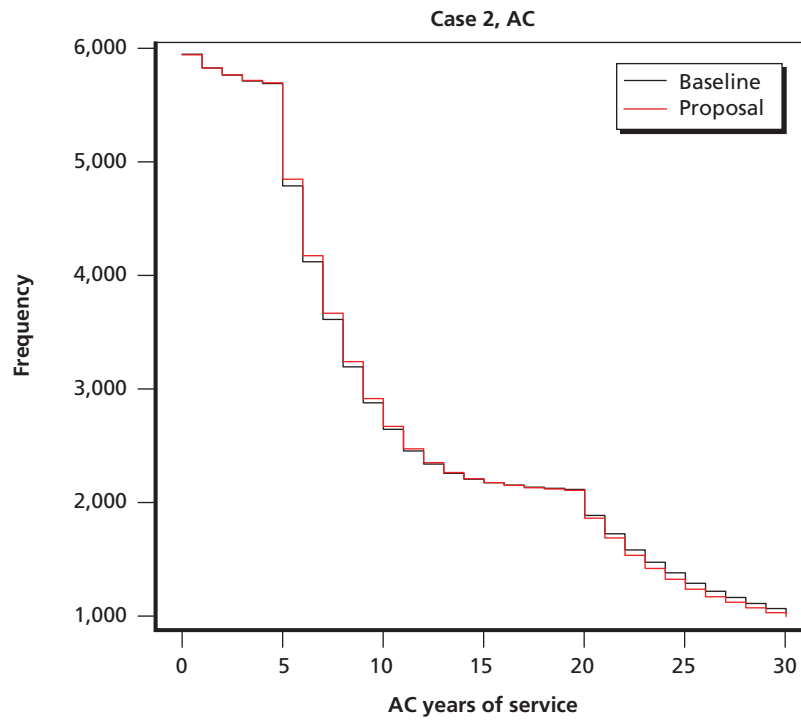


Figure 5.7b
Army Officer Retention, Option C, Reserve Component, Prior Service

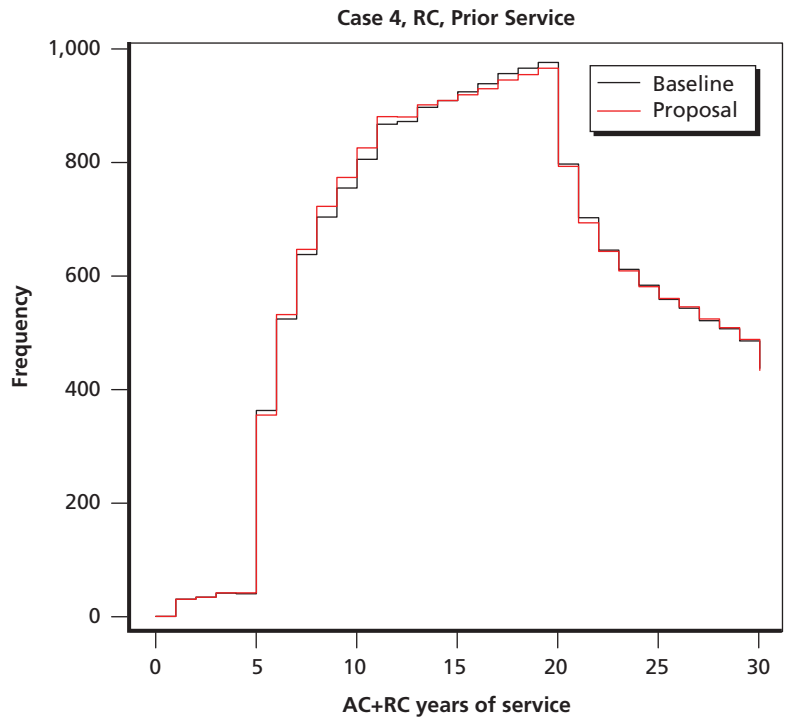
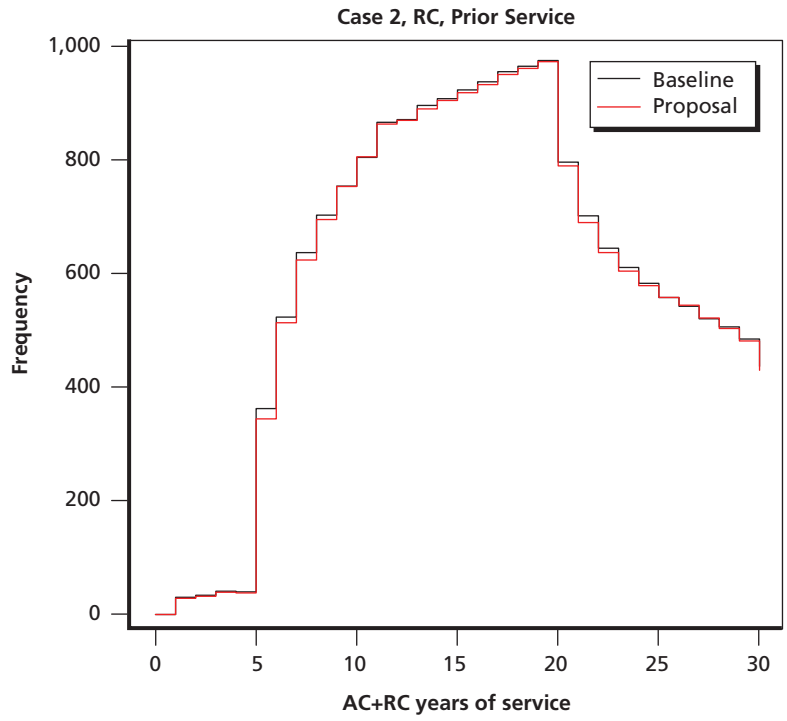


Figure 5.8a
Army Officer Retention, Option D, Active Component

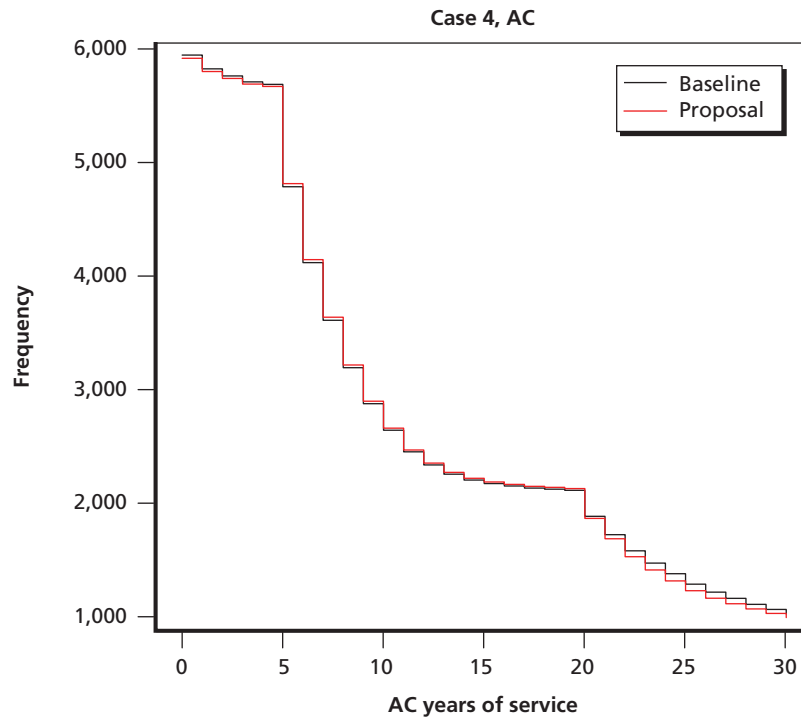
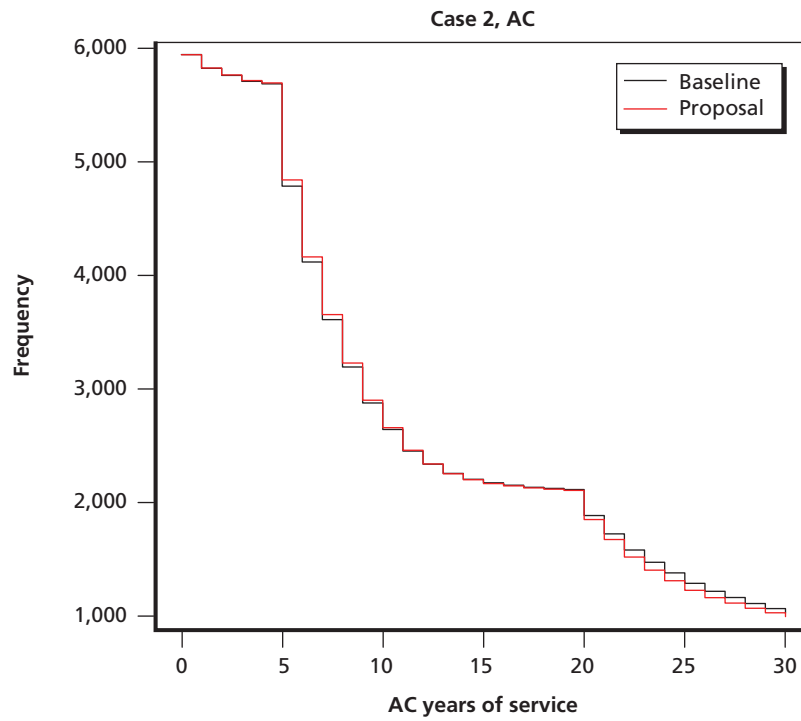
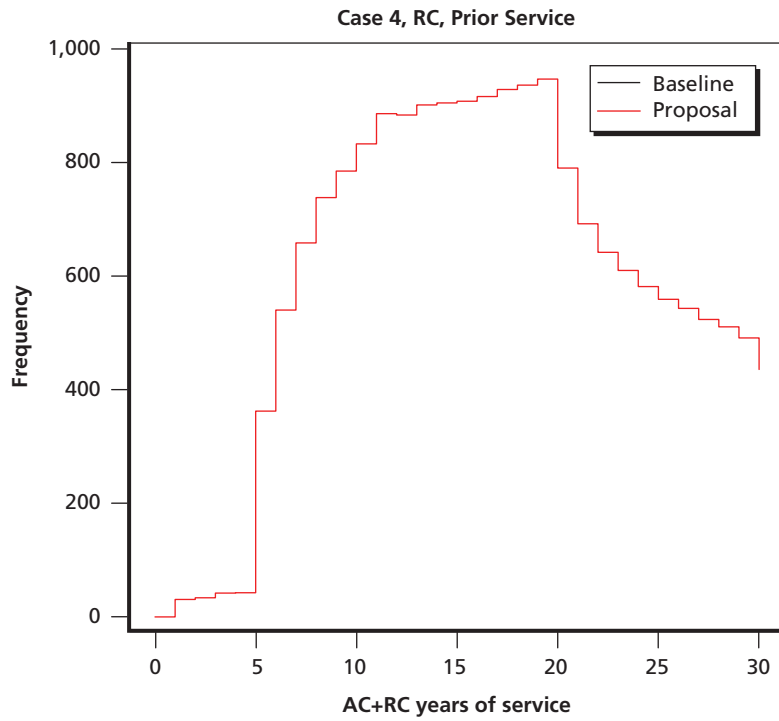
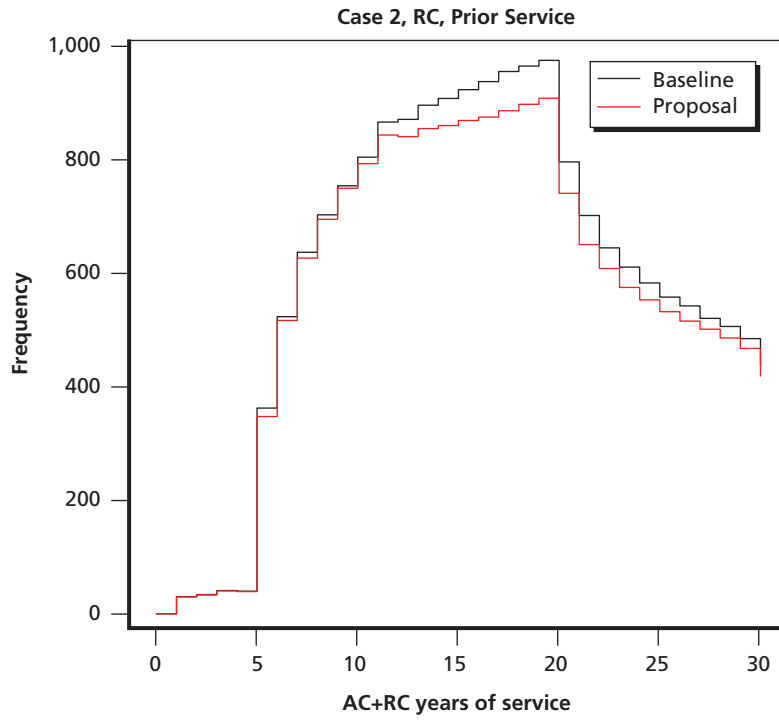


Figure 5.8b
Army Officer Retention, Option D, Reserve Component, Prior Service



member leaves the AC at 18 YOS and spends two years in the RC before retiring, compared with staying two more years in the AC and retiring.

For those staying in the AC to complete 20 or more YOS, the AC offers a transition pay. Transition pay is meant to draw people forward and induce them to leave after 20 YOS in accordance with a retention pattern the service prefers. As with the enlisted force, the transition pay does not offer enough of an incentive to keep officer post-20-YOS retention at its baseline level. The transition pay multiplier is fixed across services and across enlisted and officer personnel at 2.5 (Table 5.3), so the transition payment is 2.5 times final annual basic pay. Supplementary analysis (not shown) indicates that a higher transition pay multiplier for officers would induce more members to stay until YOS 20. This suggests that, to sustain pre-20-YOS officer retention, the services may need to supplement the transition pay over and above the 2.5 common multiplier under Option A.

Prior service RC officer retention in Option A shows the same pattern seen in prior service enlisted retention, i.e., retention is higher in the years approaching 20 YOS and lower in the years after 20 YOS, which are the effects of introducing the second-career benefit. (There is no transition payment in the RC.)

The results for Option B parallel those of Option A but are accentuated. Compared with A, fewer officers reach 20 YOS, reflecting lower gains to staying because of the lower second-career benefits under Option B than under the baseline, the availability of second-career benefits in the RC, and an insufficient transition pay to offset these effects. Option B's second-career benefits are 16 percent of high-3 pay rather than A's 25 percent. Further, fewer

Table 5.3
Continuation Pay Multipliers: Officers

	Concept I				Concept II			
	Option A		Option B		Option C		Option D	
	Case 3	Case 5	Case 3	Case 5	Case 2	Case 4	Case 2	Case 4
Active								
Army	4.66	6.00	6.35	6.90	7.52	8.78	13.33	15.98
Navy	7.52	9.11	12.19	14.92	8.47	10.74	16.55	19.58
Air Force rated	5.88	7.44	14.39	10.72	7.24	9.03	12.98	16.06
Air Force nonrated	6.47	8.59	8.58	10.86	10.20	11.68	17.29	20.87
Marine Corps	4.79	6.09	6.17	6.39	5.85	7.64	12.78	13.92
Reserve		<i>a, b</i>		<i>a, b</i>		<i>a, b</i>		<i>a, b</i>
Army	0.28	0.03, 0.81	6.33	0.30, 0.89	2.84	0.07, 0.81	0.10	0.00, 0.93
Navy	0.07	0.01, 0.84	3.13	0.02, 0.93	0.18	0.05, 0.84	5.26	0.01, 0.97
Air Force rated	0.24	0.10, 0.81	15.16	0.07, 1.00	0.17	0.13, 0.80	1.40	0.00, 0.89
Air Force nonrated	0.41	0.05, 0.89	3.98	0.06, 0.95	2.98	0.01, 0.84	0.06	0.00, 0.98
Marine Corps	0.29	0.19, 0.75	3.75	0.04, 0.76	2.12	0.02, 0.80	6.03	0.01, 0.90

NOTE: Cases 4 and 5 RC continuation pay annual bonus has the formula:

$f(a,b) = a \times 1000 + b \times (\text{Annual Reserve RMC})$. The values of *a* and *b* are shown in the table.

officers stay after reaching 20 YOS. As with Option A, the transition multiplier is not sufficient to offset the lower second-career pay versus baseline. Option B's multiplier is 3 versus A's multiplier of 2.5, and, interestingly, B's retention after 26 YOS is higher than baseline. This is a selection effect. Before that point, retention is lower than the baseline, and, given differences in individual tastes for military service in the DRM, those leaving military service were those with relatively lower taste for service. By 26 YOS, those remaining had higher tastes than those at the same year at baseline, and the higher tastes led to higher retention.

If desired, the decrease in AC officer retention under Options A and B relative to the baseline could be counteracted by supplemental pay or incentive pay targeted to occupations where retention is most critical. Unlike transition pay and retirement benefits, which are covered by the accrual charge, such pays would be part of the current budget. Further, although incorporating transition pay costs into the accrual charge and setting a common multiplier can protect transition pay from budget vagaries, a common multiplier might be too high for some services and officer/enlisted groups, creating the need for supplemental or incentive pay. The amount of supplemental or incentive pay needed would be conditional on the value of the common transition pay multiplier.

Option C comes close to replicating both AC and RC officer retention under cases 2 and 4. Thus, the combination of defined contributions (payable at age 60), officer continuation pay at 16 YOS, and transition pay (multiplier of 0.5) balance the decrease in retirement benefits under Option C's multiplier of 2 percent versus the baseline multiplier of 2.5 percent. With AC retention close to its baseline, there is little change in the outflow of AC personnel to join the RC. Also, just as in the current system, Option C pays RC retirement benefits at age 60 and does not offer a second-career benefit; there is no RC transition payment. RC continuation pay and defined contributions work in case 2 and case 4 to keep officer retention near its baseline, almost exactly compensating for the decrease in deferred compensation resulting from the lower retirement multiplier. The close fit to RC prior service retention contrasts to the result for enlisted personnel under case 4, where junior retention was above baseline and post-20 retention was below baseline. Thus, in case 4 the continuation pay formula performs well for Army RC prior service officers, but less well for their enlisted counterparts.

Option D replicates AC baseline retention in the first 20 YOS but has slightly lower retention after 20 YOS. Option D's transition pay multiplier of 0.75 is higher than Option C's multiplier of 0.5, but D was not able to replicate RC retention in case 2; retention is below baseline from 12 YOS onward. This is surprising given that continuation pay is paid at YOS 16 (half at 16 and half in installments over the next four years) and roughly speaking should support retention from YOS 12 to 20. But the optimized continuation pay multiplier is 0.10, so continuation pay would be only 10 percent of RC monthly basic pay. Low retention at 20 YOS leads to a lower inventory in the years after 20 YOS.

Shifting to case 4, Option D performs well for RC retention. The continuation pay multipliers for Army officers (Table 4.2) are $a = 0.00$ and $b = 0.93$, implying that continuation pay is 0.93 of reserve annual RMC, almost a full year's worth. This compensates for the decrease in retirement benefits under D's multiplier of 1.75 percent versus 2.5 percent at baseline, and for lower RC current compensation under the day's pay approach.

Similar explanations are relevant to the results for other services in Appendix B even though the retention profiles differ somewhat from the Army's.

Continuation and Transition Pay Multipliers

Tables 5.2 and 5.3 contain AC and RC continuation pay multipliers for each option and case, for enlisted personnel and officers, respectively. Multiplier values were determined in each policy simulation as the values optimizing the fit to the current AC and RC force size and shape, given the defined-benefit, defined-contribution, and transition pay policy being simulated. AC continuation pay is paid at 12 and 16 YOS for enlisted members and officers. The amount equals the continuation pay multiplier times the monthly basic pay at 12 or 16 YOS, with half paid upon reaching those years and on three anniversaries. This approach is also used for RC continuation pay in cases 2 and 3. In cases 4 and 5, RC continuation pay is paid in every year of service and based on the formula $a \times 1000 + b \times (\text{annual reserve RMC})$. The values in the table are optimized to bring AC and RC retention as close to baseline as possible, given the defined-benefit and defined-contribution plans and common transition pay multiplier.

Most AC enlisted multipliers are in the range of 0–2, and two are over 3. These imply continuation pay of 0–3 months of basic pay. (Monthly basic pay for an E-5 with 10–12 YOS was \$3,045 in fiscal year [FY] 13.) The multipliers are typically larger in Option B than A, and in Option D than C, consistent with the smaller retirement benefit multipliers in Options B and D. However, the differences are not large. For AC officers, the multipliers range from 5 to 20, and the multipliers are clearly larger in Option B than A, and in Option D than C. (Monthly basic pay for a lieutenant colonel with 14–16 YOS was \$7,425 in FY 13.) While the range of multipliers implies that some members will receive more continuation pay than others, variations in special and incentive pays across members are already a well-understood aspect of military compensation. Furthermore, the variations are across members in differing circumstances, e.g., different grades. Members in the same circumstances will receive the same continuation pay.

The RC enlisted multipliers for cases 2 and 3 are all below 2, and most are around 1 or less. Thus, in these cases, where reserve current compensation stays in its current form, continuation pay of one month's basic pay would be sufficient in most cases. Officer multipliers for cases 2 and 3 are more varied and range from 0 to 3 for Options A and C, and are higher and range more widely—from 1 to 15—for Options B and C.

The transition pay multipliers (Table 5.4) show the multiple of final annual basic pay that would be paid upon AC retirement. The multipliers are the same for enlisted and officer personnel and by service, so the table has only one row. They are higher in A and B than C and D primarily because the near-term decrease in retirement benefits is greater in A and B, with second-career benefits being capped at 25 and 16 percent, respectively, of high-3 basic pay. By comparison, Option A's second-career benefits are 40 percent of high-3 pay at YOS 20 and increase with YOS, and Option B's are 35 percent at YOS 20 and also increase with YOS. The

Table 5.4
Transition Pay Multipliers

	Concept I				Concept II			
	Option A		Option B		Option C		Option D	
	Case 3	Case 5	Case 3	Case 5	Case 2	Case 4	Case 2	Case 4
Active	2.5	2.5	3.0	3.0	0.5	0.5	0.75	0.75

multiplier is larger in Option B than A because of B's lower cap, and the multiplier is larger in Option D than C because of D's lower retirement multiplier, 1.75 percent versus 2 percent.

Cost and Cost Savings

The DoD Actuary prepared estimates of the annual steady-state cost and cost savings for each option. The estimates assumed that any option could, with some force management effort by the services, support the baseline force size and experience mix. The simulations showed possible differences between the steady-state force under an option versus the baseline, but the working assumption was that the differences were small enough to handle through personnel policy actions at little additional cost. As a result, the Actuary's estimates focus on the accrual cost of the baseline force. The accrual cost includes the accruing costs of the defined-benefit and defined-contribution plans and disability (Chapter Seven) and survivor benefit reforms, and the cost estimate is based on the Actuary's model. Added to the accrual cost is the continuation pay cost based on the RAND analysis. The overall cost estimate, although not exact, provides a reasonably accurate indication of an option's steady-state cost. Cost savings are the difference between the steady-state cost of an option and the baseline force.

The Actuary estimates steady-state accrual cost for "full-time" and for "part-time" personnel, groups reflecting the AC and RC, respectively. The total accrual is the sum of these costs. Table 5.5 presents the cost and cost savings estimates for Options A and B and Options C and D. For instance, the steady-state annual accrual cost of the baseline force is \$25.118 billion for full-time personnel and \$1.978 billion for part-time personnel in FY 13 dollars. The total accrual cost is \$27.096 billion. The steady-state accrual cost of Option A is \$23.435 billion for full-time personnel and \$1.851 billion for part-time personnel. These are, respectively, \$1.972 billion and \$0.128 billion less than baseline costs. Option A's continuation pay costs are \$0.274 billion for full-time personnel and \$0.44 billion for part-time personnel. Totaling up the numbers, Option A's total steady-state accrual cost is \$24.996 billion, or \$2.100 billion per year less than the baseline accrual cost. After allowing for continuation pay, the net annual steady-state cost savings are \$1.782 billion.

The main findings with respect to cost and cost savings are:

- All of the options produce cost savings.
- Cost savings are greater under Option B than A and under Option D than C—recall that B's old-age retirement benefit multiplier is 2 percent versus A's 2.5 percent, and D's retirement benefit multiplier is 1.75 percent versus C's 2 percent.
- For Options A and B, cost savings are slightly larger under case 5 than case 3—recall that case 5 is the day's pay approach for reserve compensation.
- For Options C and D, cost savings are significantly larger under case 4 than case 2—case 4 is the day's pay approach.
- Cost savings range from \$1.37 to \$4.43 billion per year. As discussed, cost savings are higher as more deferred compensation is moved forward to current compensation, which is why cost savings are greater for Option B than A and greater for Option D than C. However, Options B and D provide a smaller stream of benefits during retirement from the defined-benefit element.

Table 5.5
Cost and Cost Savings (\$2013 millions)

	Concept I					Concept II			
	Baseline	Option A		Option B		Option C		Option D	
		Case 3	Case 5	Case 3	Case 5	Case 2	Case 4	Case 2	Case 4
Full-Time NCP									
New total NCP	43.3%	39.90%	39.90%	36.00%	36.00%	39.80%	39.30%	36.00%	35.70%
Steady state (annual)	\$25,118	\$23,435	\$23,145	\$20,883	\$20,883	\$23,087	\$22,797	\$20,883	\$20,709
Steady-state delta (nominal)	—	(\$1,972)	(\$1,972)	(\$4,235)	(\$4,235)	(\$2,030)	(\$2,320)	(\$4,235)	(\$4,409)
Continuation pay	—	\$274	\$347	\$339	\$425	\$367	\$404	\$591	\$682
Total delta		(\$1,698)	(\$1,625)	(\$3,896)	(\$1,698)	(\$1,663)	(\$1,916)	(\$3,644)	(\$3,727)
Part-Time NCP									
New total NCP	21.7%	20.30%	20.70%	17.50%	17.80%	22.10%	19.90%	19.40%	17.40%
Steady state (annual)	\$1,978	\$1,851	\$1,157	\$1,595	\$995	\$2,015	\$1,112	\$1,769	\$972
Steady-state delta (nominal)	—	(\$128)	(\$822)	(\$383)	(\$984)	\$36	(\$866)	(\$210)	(\$1,006)
RC pay change (case 5)	—	—	(\$530)	—	(\$530)	—	(\$530)	—	(\$530)
Continuation pay	—	\$44	\$992	\$165	\$894	\$257	\$771	\$88	\$986
Total delta		(\$84)	(\$360)	(\$218)	(\$620)	\$293	(\$625)	(\$122)	(\$550)
Total Accrual									
Steady state (annual)	\$27,096	\$24,996	\$24,302	\$22,478	\$21,878	\$25,102	\$23,909	\$22,652	\$21,681
Steady-state delta (nominal)	—	(\$2,100)	(\$2,794)	(\$4,618)	(\$5,218)	(\$1,994)	(\$3,187)	(\$4,444)	(\$5,415)
Total delta		(\$1,782)	(\$1,985)	(\$4,114)	(\$4,430)	(\$1,370)	(\$2,541)	(\$3,766)	(\$4,277)

NOTE: NCP = normal cost percentage.

Notional Payouts

The options differ in terms of the defined-benefit payout level and starting age, and the continuation and transition pay multipliers, though the options have the same contribution rate, vesting, and payout age for the defined-contribution plan. Options A and B represent Concept I and have similar features, including a capped second-career benefit, and Options C and D represent Concept II and also have similar features. Figures 5.9 and 5.10 illustrate the payouts for Concept I and Concept II options for the AC and RC, respectively. The figures refer to the defined-contribution plan as the TSP because its features are like those of the TSP.

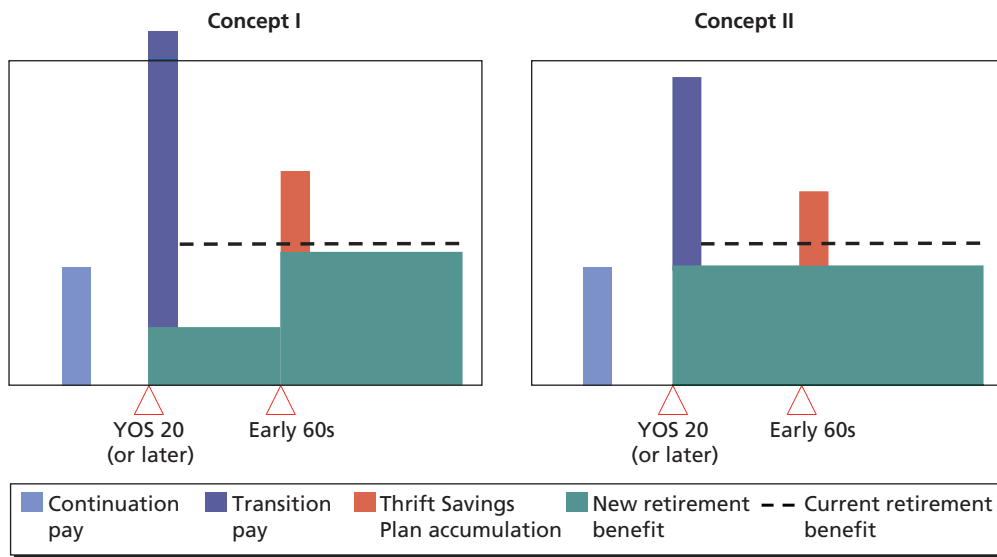
An overarching point to keep in mind is that although the payouts differ between Concept I and Concept II, and to some extent between Options A and B and Options C and D,

to a close approximation all of them are able to create a steady-state force level and experience mix that are the equivalent of the current force. This occurs because at each year of service the incentive to serve in the military is as strong under each option as it is in the current system. As the figures show, the timing and amounts of the different components of compensation differ, but nevertheless the strength and experience mix of the force are sustained (Figures 5.1a–5.8b).

Figure 5.9 shows three lump-sum payments for AC members. The first is for continuation pay, payable at 12 YOS for enlisted and 16 YOS for officers, and shown by a single bar even though half of the amount is paid up front and the rest in installments. The bar can be thought of as the present value of the continuation pay. The bar shows the same level of continuation pay for Concepts I and II, but the amount of continuation pay can in fact differ by service, officer/enlisted, and concept, as indicated by the multipliers in Tables 5.2 and 5.3. The second lump sum is for transition pay. As expected from the transition pay multipliers in Table 5.4, the bar is taller for Concept I than for Concept II. Concept I’s capped second-career benefits comprise a larger decrease in the present value of the benefit stream than those in Concept II, so a higher transition pay is needed to compensate. The third lump sum, shown by the red bar, represents accumulated value of the TSP. The TSP accumulation is available at age 60, but for Concept I the figure assumes it will be drawn on when the defined-benefit annuity begins in old age, age 62 for Option A and 65 for B. For Concept II, full benefits begin at the time of retirement from the AC, and the figure indicates that the TSP accumulation is drawn at age 60.

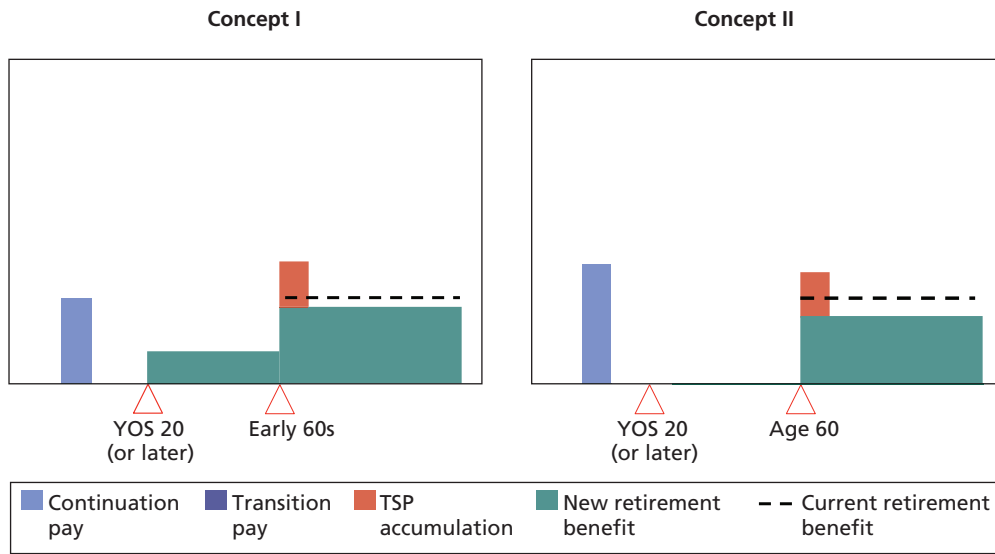
The height of the green area represents the defined-benefit retirement benefit. It is lower in the second-career years in Concept I because of the capped payment, but increases in old age, age 62 in A and 65 in B. Option A’s old-age benefit is based on a 2.5 percent multiplier, the same as in the current system, so the old-age benefit equals the current old-age benefit; the height of the green area would be exactly the same as the height of the dashed line, which

Figure 5.9
Payout by Concept: Active Component



NOTE: The figure assumes that RMC, special and incentive pays, and allowances remain at baseline levels.

Figure 5.10
Payout by Concept: Reserve Component



NOTE: The figure assumes that RMC, special and incentive pays, and allowances remain at baseline levels.

RAND RRS01-5.10

represents the defined benefit under the current system. Option B's old-age benefit is based on a multiplier of 2 percent, so its benefit is below the current benefit. The defined-benefit annuity in Concept II is based on a multiplier of 2 percent for Option C and 1.75 percent for Option D, which in both cases would be less than the current benefit. However, the defined benefit in Concept II is the same in the second career as in old age. (The figure abstracts from inflation and assumes the real value of the defined benefit will be maintained as it is in the current system, i.e., by an annual adjustment based on the COLA.)

The interpretation of the notional payouts for the RC is similar (Figure 5.10), except there is no transition payment and the defined-benefit and defined-contribution (TSP) amounts are smaller, reflecting fewer effective years of service. Concept I introduces second-career benefits into the RC, whereas in the current system benefits start at age 60. Concept II keeps the start age at 60.

Payouts for a Military Career of a Given Length

The notional payouts show that the timing of the payout of benefits will differ under each design concept. As an example, Tables 5.6 and 5.7 show the payouts (in 2007 dollars) for an enlisted member and for an officer, respectively, who complete different career lengths and then leave active duty for either the RC or the civilian labor market without RC participation. Specifically, Tables 5.6 and 5.7 show the payout for a career length of 6, 10, 12, 16, 18, 20, 25, and 30 years. Tables 5.8 and 5.9 show the DPV of a military career for enlisted personnel and for officers of different lengths, respectively.² These computations are an indicator of the impact of these proposals on the member.

² The present value computations in Tables 5.8 and 5.9 are also in Table A.1 and are shown here for completeness.

Table 5.6
Representative Payout of Benefits for Enlisted Members Leaving at Selected Years of Service (\$2007)

	Concept I					Concept II			
	Baseline	Army	Navy	Air Force	Marine Corps	Army	Navy	Air Force	Marine Corps
For an Enlisted Soldier Leaving with 6 YOS:									
TSP	0	30,725	30,725	30,725	30,725	30,725	30,725	30,725	30,725
For an Enlisted Soldier Leaving with 10 YOS:									
TSP	0	57,329	57,329	57,329	57,329	57,329	57,329	57,329	57,329
For an Enlisted Soldier Leaving with 12 YOS:									
TSP	0	70,463	70,463	70,463	70,463	70,463	70,463	70,463	70,463
For an Enlisted Soldier Leaving with 16 YOS:									
TSP	0	95,629	95,629	95,629	95,629	95,629	95,629	95,629	95,629
Continuation pay	0	0	4,120	4,123	1,529	1,740	3,739	277	1,108
For an Enlisted Soldier Leaving with 18 YOS:									
TSP	0	107,387	107,387	107,387	107,387	107,387	107,387	107,387	107,387
Continuation pay	0	0	4,120	4,123	1,529	1,740	3,739	277	1,108
For an Enlisted Soldier Leaving with 20 YOS:									
Second-career annuity	20,422	10,211	10,211	10,211	10,211	16,338	16,338	16,338	16,338
Full annuity	20,422	20,422	20,422	20,422	20,422	16,338	16,338	16,338	16,338
TSP	0	118,662	118,662	118,662	118,662	118,662	118,662	118,662	118,662
Continuation pay	0	0	4,120	4,123	1,529	1,740	3,739	277	1,108
Transition pay	0	104,534	104,534	104,534	104,534	20,907	20,907	20,907	20,907
For an Enlisted Soldier Leaving with 25 YOS:									
Second-career annuity	30,994	12,398	12,398	12,398	12,398	24,795	24,795	24,795	24,795
Full annuity	30,994	30,994	30,994	30,994	30,994	24,795	24,795	24,795	24,795
TSP	0	118,662	118,662	118,662	118,662	118,662	118,662	118,662	118,662
Continuation pay	0	0	4,120	4,123	1,529	1,740	3,739	277	1,108
Transition pay	0	129,604	129,604	129,604	129,604	25,921	25,921	25,921	25,921
For an Enlisted Soldier Leaving with 30 YOS:									
Second-career annuity	47,928	15,976	15,976	15,976	15,976	38,342	38,342	38,342	38,342
Full annuity	47,928	47,928	47,928	47,928	47,928	38,342	38,342	38,342	38,342
TSP	0	118,662	118,662	118,662	118,662	118,662	118,662	118,662	118,662
Continuation pay	0	0	4,120	4,123	1,529	1,740	3,739	277	1,108
Transition pay	0	163,586	163,586	163,586	163,586	32,717	32,717	32,717	32,717

NOTE: The TSP value is the value of fund at age 60. The continuation pay is paid over four years, starting at YOS 12.

Table 5.7
Representative Payout of Benefits for Officers Leaving at Selected Years of Service (\$2007)

	Concept I					Concept II			
	Baseline	Army	Navy	Air Force	Marine Corps	Army	Navy	Air Force	Marine Corps
For an Officer Leaving with 6 YOS:									
TSP	0	62,934	62,934	62,934	62,934	62,934	62,934	62,934	62,934
For an Officer Leaving with 10 YOS:									
TSP	0	114,805	114,805	114,805	114,805	114,805	114,805	114,805	114,805
For an Officer Leaving with 12 YOS:									
TSP	0	139,870	139,870	139,870	139,870	139,870	139,870	139,870	139,870
For an Officer Leaving with 16 YOS:									
TSP	0	187,057	187,057	187,057	187,057	187,057	187,057	187,057	187,057
For an Officer Leaving with 18 YOS:									
TSP	0	209,202	209,202	209,202	209,202	209,202	209,202	209,202	209,202
For an Officer Leaving with 20 YOS:									
Second-career annuity	38,365	19,183	19,183	19,183	19,183	30,692	30,692	30,692	30,692
Full annuity	38,365	38,365	38,365	38,365	38,365	30,692	30,692	30,692	30,692
TSP	0	230,357	230,357	230,357	230,357	230,357	230,357	230,357	230,357
Continuation pay	0	27,102	43,746	37,611	27,853	43,776	49,249	59,355	34,084
Transition pay	0	195,623	195,623	195,623	195,623	39,125	39,125	39,125	39,125
For an Officer Leaving with 25 YOS:									
Second-career annuity	56,106	22,442	22,442	22,442	22,442	44,885	44,885	44,885	44,885
Full annuity	56,106	56,106	56,106	56,106	56,106	44,885	44,885	44,885	44,885
TSP	0	230,357	230,357	230,357	230,357	230,357	230,357	230,357	230,357
Continuation pay	0	27,102	43,746	37,611	27,853	43,776	49,249	59,355	34,084
Transition pay	0	231,400	231,400	231,400	231,400	46,280	46,280	46,280	46,280
For an Officer Leaving with 30 YOS:									
Second-career annuity	76,829	25,610	25,610	25,610	25,610	61,464	61,464	61,464	61,464
Full annuity	76,829	76,829	76,829	76,829	76,829	61,464	61,464	61,464	61,464
TSP	0	230,357	230,357	230,357	230,357	230,357	230,357	230,357	230,357
Continuation pay	0	27,102	43,746	37,611	27,853	43,776	49,249	59,355	34,084
Transition pay	0	261,015	261,015	261,015	261,015	52,203	52,203	52,203	52,203

Table 5.8
Discounted Present Value of Continuation and Retirement Pays at YOS 0 for Enlisted Members
Anticipating Leaving After a Fixed Term (\$2007)

Leaving After YOS	Baseline	Concept I				Concept II			
		Army	Navy	Air Force	Marine Corps	Army	Navy	Air Force	Marine Corps
6	0	454	454	454	454	454	454	454	454
10	0	847	847	847	847	847	847	847	847
12	0	1,042	1,042	1,042	1,042	1,042	1,042	1,042	1,042
16	0	1,413	2,577	2,578	1,845	1,905	2,469	1,492	1,726
18	0	1,587	2,751	2,752	2,019	2,079	2,643	1,665	1,900
20	24,789	27,728	28,892	28,893	28,160	24,618	25,182	24,205	24,439
25	22,189	21,520	22,684	22,685	21,952	21,858	22,422	21,445	21,679
30	20,223	18,155	19,319	19,320	18,587	19,811	20,375	19,397	19,632

Table 5.9
Discounted Present Value of Continuation and Retirement Pays at YOS 0 for Officers
Anticipating Leaving After a Fixed Term (\$2007)

Leaving After YOS	Baseline	Concept I				Concept II			
		Army	Navy	Air Force	Marine Corps	Army	Navy	Air Force	Marine Corps
6	0	5,743	5,743	5,743	5,743	5,743	5,743	5,743	5,743
10	0	10,476	10,476	10,476	10,476	10,476	10,476	10,476	10,476
12	0	12,763	12,763	12,763	12,763	12,763	12,763	12,763	12,763
16	0	17,069	17,069	17,069	17,069	17,069	17,069	17,069	17,069
18	0	19,090	19,090	19,090	19,090	19,090	19,090	19,090	19,090
20	194,301	207,413	213,801	211,446	207,701	205,081	207,181	211,059	201,361
25	208,698	201,377	207,765	205,411	201,665	215,144	217,245	221,123	211,424
30	209,187	197,214	203,602	201,247	197,502	213,838	215,939	219,817	210,118

It is important to remember, as we discussed, in the context of Table 4.2 (and A.1) where we discussed the value of 20-year career length, that these computations are by no means a complete characterization of the value of staying in the military or how the alternatives affect service members' well-being. As discussed in the previous chapter, the value of staying depends on a number of factors not included in the financial assessment associated with a given career length.

Under the baseline (column 1 in Tables 5.6 and 5.7), there is no payout until a member has completed a 20-year career. In contrast, members completing a 6-year career would be vested in the TSP under Concepts I and II. The tables show the value of the TSP fund at age 60. For example, for Army enlisted personnel under Concept I, a member leaving after 6 YOS would have a fund of \$30,725 at age 60, assuming a 5 percent annual growth rate in the TSP

fund. Table 5.8 shows the DPV of that fund for an entering member. For the Army enlisted example, the \$30,725 at age 60 would have a DPV of \$454 at entry. Recall from Table 4.2 (and A.1) that the DPV computations used the estimated personal discount rates estimated by the model. Not surprisingly, given the relatively high personal discount rates of enlisted members, the value of a payout at age 60 to a new recruit is quite low. A member completing a 16-year enlisted career would have received continuation pay for four years starting at YOS 12. For a Navy enlisted member leaving after 16 years, the continuation payout would be \$4,120. Members completing a 20-year career would receive a second-career annuity and later a full annuity in old age. Under Concept II, the second-career and old age annuity amounts are the same, while under Concept I, the second-career annuity is a partial annuity, so it is less than the full old-age annuity.

Tables 5.8 and 5.9 show the DPV of different military career lengths under each concept and under the baseline. Comparing these DPVs to the baseline, the general finding is that DPVs increase under Concept I and Concept II for officers; for enlisted personnel, they increase under Concept I but decrease a bit under Concept II. It is important to reiterate that an increase or decrease does not mean a given member's welfare is better or worse off. As the payouts in Tables 5.6 and 5.7 and the notional graphics in Figures 5.9 and 5.10 show, members who leave before YOS 20 receive a payout under the new design concepts, while they receive nothing under the current system. Furthermore, because both design concepts provide the same retention behavior as the current force, it must be the case that the value of a military career is the same under both design concepts as under the current system. Put differently, the DPV figures do not include all relevant factors, such as the value of a member's current state, and the choice to stay in the military depends on, among other things, the value of all possible future paths, including but not exclusively the value of a career of a given length.

Conclusion

The Concept I and II options can support a steady-state force and experience mix closely equivalent to the current force. The concepts bring compensation forward by decreasing deferred compensation in the form of defined benefits and increasing current compensation in the form of continuation and transition pays. The concepts also provide a defined-contribution plan vesting at the completing of 6 YOS and assuring that a much higher fraction of service members will have a retirement benefit as compared with the current system. Although the payouts under Concepts I and II differ from those of the current system, they provide throughout the service career an incentive to continue to serve tantamount to that of the current system. Moving some amount of compensation forward is beneficial to members by providing them with more resources earlier in their work life, including military service, and creates cost savings for the services and the nation. Keeping a significant, though decreased, portion of compensation in deferred compensation ensures the availability of income during the second career and throughout old age, in recognition for many years of service and sacrifice. The concepts generate \$1.37 to \$4.43 billion per year in cost savings. These cost savings figures do not incorporate the increased value to the member from having a higher likelihood of vesting nor the increased value to the services from the possibility of more flexibility in managing the force. Assessment of the value of reform must consider the cost savings as well as the other benefits of reform.

Transition Results on Retirement Reform Concepts

The results in Chapter Five show the effects of the reform alternatives in the steady state, when all members are under the new policy for their entire career. Given a typical military career of 30 years, it would take 30 years to reach the new steady state as a result of a policy change. The DODWG was also interested in the effects of reform alternatives in the transition to the steady state, i.e., during the 30-year period before the new steady state is reached, and how different implementation strategies would affect the 30-year time path.

A common implementation strategy is to “grandfather” existing members, so only new entrants are covered by any policy change. Grandfathering is often desirable because policy-makers do not want to break the implicit contract with existing members and so wish to ensure that “promises are kept.” This is the implementation promised by Secretary of Defense Leon Panetta in 2011 and incorporated in the statute that created the Military Compensation and Retirement Modernization Commission. The statute also opened the door to allow currently serving members to “opt in” and choose the new compensation system. The opt-in approach is a different implementation strategy, and one that has two potential advantages. First, faith is not broken because those who decide to change do so only if they expect to be better off under the new policy. Second, if sufficient numbers of personnel opt in, then cost savings will be realized sooner.

At the request of the DODWG, RAND used an extended version of the DRM to assess the reform alternatives during the transition phase in terms of their effects on retention, costs, and Treasury outlays and provided analysis of alternative implementation strategies. The extended DRM is detailed in Asch, Mattock, and Hosek (2013) and provides results on the effects for the active component only. We first consider grandfathering with no opt-in feature and then consider variants of an implementation strategy that would permit members to opt in during the first year of the policy change. At the request of the DODWG, we analyzed strategies that would include different requirements before those who opt in could become fully vested in their TSP benefit and before DoD would make contributions to the TSP.

This chapter begins by showing results when all members are grandfathered with no opt-in feature. We start by presenting retention effects and then discuss changes in costs and outlays, as well as how we compute costs and outlays, in the grandfathering case. We then provide more details of the different opt-in strategies considered and present results for the specific strategy chosen by the DODWG. We conclude with a discussion of the likely qualitative results for the reserve components.

“Grandfathering” Implementation Strategy

Because the supplemental pays, namely continuation pay and transition pay, are optimized to sustain retention, it is no surprise that force size and shape remain virtually the same under each reform alternative. This is the case both in the steady state, as shown in Chapter Five, and in the transition to the steady state, as illustrated in Figure 6.1 for Army enlisted personnel in Option C, case 2. The figure appears to show only one line—the retention profile for Army enlisted personnel, but in fact it shows 30 separate lines. Each separate line represents the retention profile in year s , where s is the number of years since the policy change occurred. Year 0 is the steady state in the baseline, and year 30 is the new steady state. The fact that all of the lines are identical in Figure 6.1 means that retention is unchanged in the transition period.

That said, the composition of personnel changes as time elapses in terms of who is and is not covered by the new policy, as shown in Figures 6.2 and 6.3. These three-dimensional graphs show the retention profile as time elapses. In the baseline ($s = 0$), all members are covered by the current compensation system and none are covered by the new system. In the first year ($s = 1$), new entrants are covered by the new system, while everyone else is under the current system. In year 10 ($s = 10$), members in YOS 1–9 are under the new system and those with 10 or more YOS are under the current system. By year 30, no members are under the current system and all members are under the new system.

Figure 6.1
Simulated Army AC Enlisted Retention in Transition to Steady State with Grandfathered Members (No Opt-In Feature), Option C, Case 2

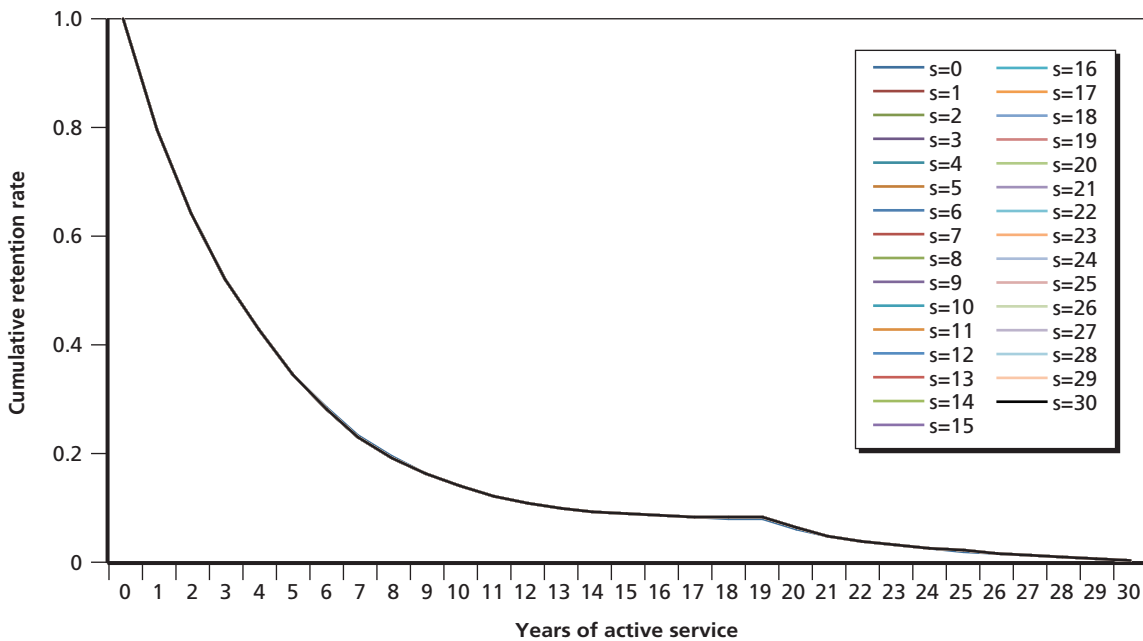


Figure 6.2
Simulated Army AC Enlisted Retention of Grandfathered Members, Option C, Case 2

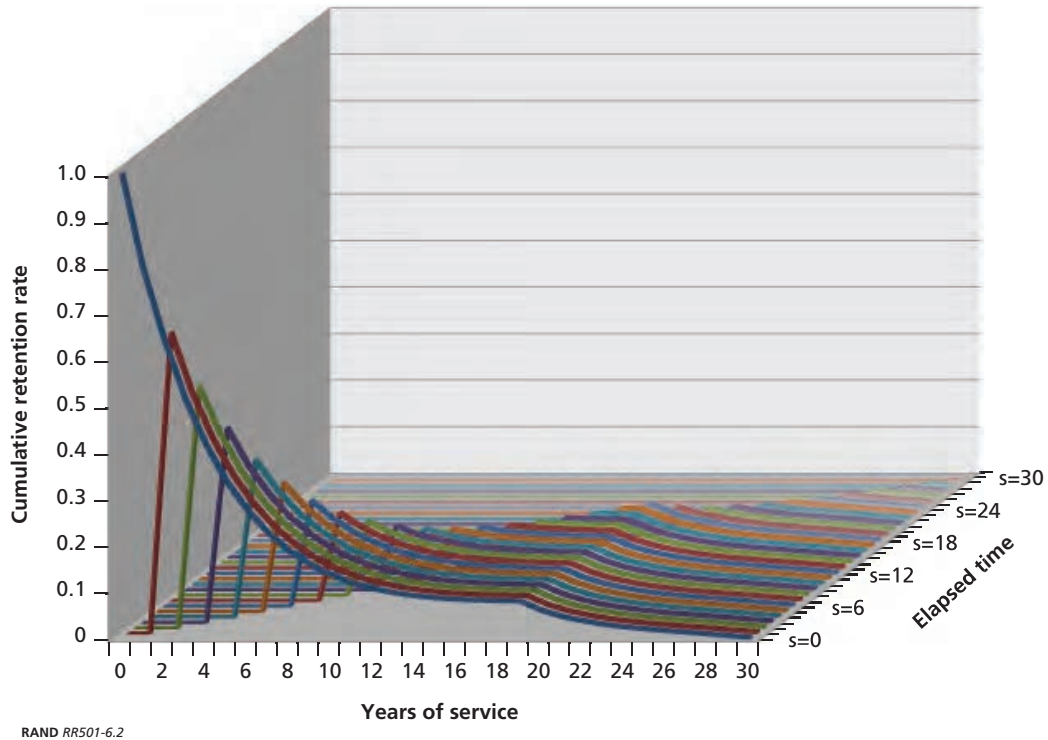
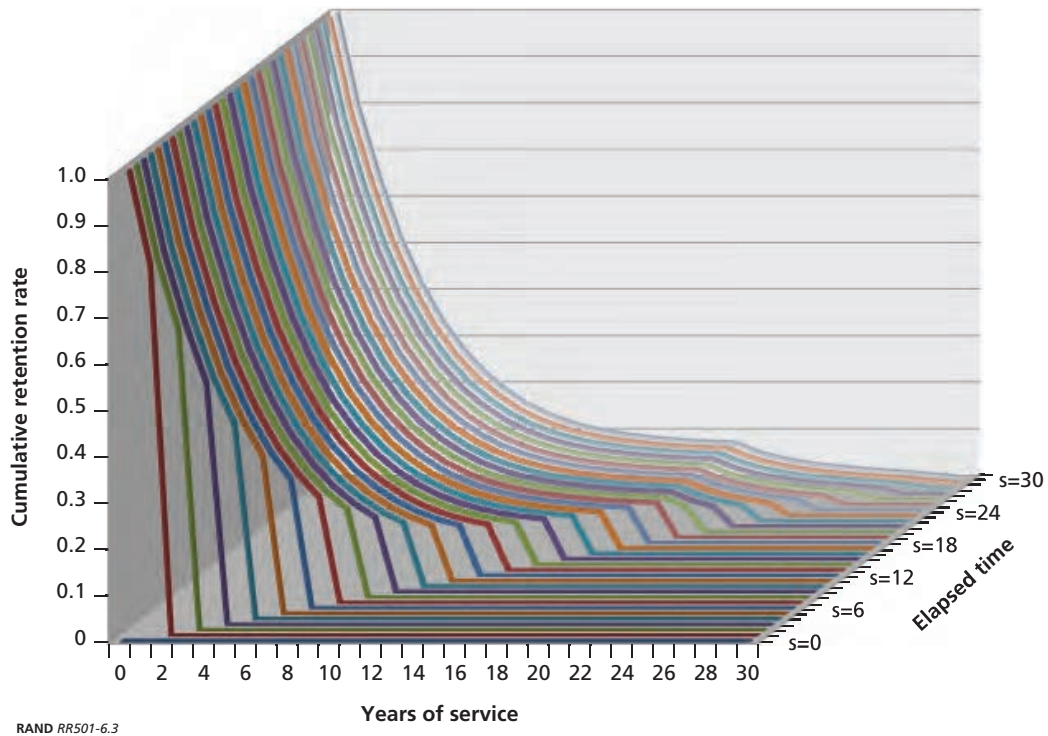


Figure 6.3
Simulated Army AC Enlisted Retention of Members Under the New System, Option C, Case 2



Cost Savings and Changes in Outlays

The choice of implementation strategy has implications for the timing of cost savings and of changes in government outlays. Before showing these effects, we first describe the elements of cost and of outlays that we assess.

The analysis of costs focuses on current cash compensation and retirement/deferred compensation costs. Because the force size and shape remain virtually unchanged, changes in current compensation costs include only the new elements of cash compensation, namely the supplemental pay, because the cost of basic pay and the other elements of regular military compensation do not change when the force size and experience mix are the same. Changes in deferred compensation costs reflect changes in the retirement accrual charge that results under each design concept.

The current military retirement system is funded by an entry-age normal cost method. The entry-age normal cost percentage (NCP) or accrual charge is the percentage of basic pay that must be contributed over the entire career of a typical group of new entrants to pay for all future retirement and survivor benefits for that group. The NCP is then applied to the basic pay bill for the entire force. In contrast to a pay-as-you-go method, this approach means that future retirement costs are incorporated into the computations of the current personnel costs of the force but are not current Treasury outlays. Under the current system, the accrual charge includes the liability associated with the current defined-benefit plan and was equal to 43.3 percent in 2013. As with any of the new retirement systems under consideration, the accrual charge would include the liabilities associated with the revised defined-benefit component of compensation, the TSP contributions, and the transition payment. Although the transition payment increases current compensation, it would be funded through the NCP.

While the new accrual charge would include more components, it would decrease under both design concepts. This is because deferred retirement benefits are reduced while current compensation in the form of additional continuation and transition pay is increased. Because it costs more to pay future deferred benefits than those benefits are worth to service members, moving pay from the future to the present results in cost savings while still sustaining the retention of members. The cost of future benefits is greater than the value to them because members have personal discount rates that are higher than the government discount rate. That is, they discount future benefits at a higher rate than the government discounts the cost of those benefits. In practice, and as supported by our estimates, a dollar tomorrow is worth about 94 cents today to an officer and 90 cents to an enlisted member, but the government must invest 97 cents today to pay tomorrow's dollar. Bringing compensation forward creates gains from trade. An officer or enlisted member would be better off with a payment of 95 cents today than a dollar tomorrow, and it would cost the government 2 cents less to pay the 95 cents today. The amount of the cost savings depends on how much the accrual charge decreases and how much pay is moved forward into current compensation. The charge decreases more when the second-career benefit is lower under Concept I (i.e., Options A and B) and when the retirement multiplier is lower under Concept II (i.e., Options C and D). Chapter Five showed the steady-state cost savings under each alternative.

Outlays to the Treasury represent the outflow of dollars from the government. Outlays increase under the retirement reform alternatives when the government provides continuation pay, when it makes contributions to the TSP on behalf of members, and when it provides transition pay to qualified separating members. However, outlays decrease under the retirement alternatives when the government provides defined-benefit annuity payments to retirees,

because the defined-benefit payments are less generous under the reform alternatives.¹ The time pattern of the change in costs and in outlays in the transition period will depend on the implementation strategy. We first show the results for grandfathering, and then turn to the results when opt-in is permitted.

Figures 6.4a–6.4d shows the time patterns for the AC of the change in personnel costs to DoD and the Treasury in 2013 dollars, when members are grandfathered and there is no opt-in feature, under each of the eight alternatives. In each alternative, costs decrease relative to the baseline when the new policy is implemented. The decrease occurs slowly as new entrants are put under the proposed, less costly, compensation system and existing members grandfathered under the current system gradually age and eventually leave service. Twelve elapsed years after the policy change occurs, costs stabilize for a few years and even increase a bit as members under the new system reach the point in their career when they receive continuation pay. In our model, half of continuation pay is paid to members at 12 (or 16 for officers) YOS, and the remaining half is paid in equal installments over the next three years (YOS 13–15 for enlisted and YOS 17–19 for officers). Costs continue their downward path until the new steady state is reached.

Figures 6.5a–6.5d show the time pattern for the change in Treasury outlays on behalf of AC personnel when existing members are grandfathered under the current system and new members are automatically placed under each alternative. To help explain the patterns observed in Figures 6.5a–6.5d, Figure 6.6 shows the time pattern of outlays by element of outlay—TSP, continuation pay, transition pay, and the defined-benefit plan, for a specific example, namely for Option C, case 2.

The general pattern of the change in outlays is that initially Treasury outlays increase above the baseline in the years after the policy is implemented and then eventually decrease below the baseline. Figure 6.6 helps explain why this is the case. In the grandfather case with no opt-in feature, there is no change in outlays in the first 6 years under any of the alternatives. However, beginning at the end of year 6, outlays increase because members who entered in year 1 are vested in the TSP after 6 YOS.² The white defined-benefit outlay change is reflected by the decrease in the lowest extent of the red bar at each point in time. The change in defined-benefit outlay is always a negative number, and the other three elements of cost, which are in red, green, and blue, are positive and stack on top of the defined-benefit outlay. The red bars in Figure 6.6 show the outlays associated with TSP contributions. As time elapses, more members become vested in the TSP and the TSP outlays increase. After 12 elapsed years, members who entered when the new policy was implemented begin to receive continuation pay, targeted to those in YOS 12 for enlisted personnel (YOS 16 for officers) and paid between YOS 12–15 (or YOS 16–19 for officers). The blue bars in Figure 6.6 shows the time pattern of continuation pay outlays. Outlays for transition pay begin after 20 elapsed years, as members covered by the new policy begin to become retirement eligible and separate. Thus, outlays increase between

¹ Option A provides a defined-benefit annuity based on a 2.5 percent multiplier for retirees who are at least age 65 and a multiplier that is capped for retirees less than age 65. Under this alternative, the defined-benefit payments are less generous only during the second career, before age 65.

² Under both design concepts, TSP contributions occur between YOS 3 and 20, as shown in the tables in Chapter Four. However, because non-vested members have no claim on these contributions, they revert back to the Treasury. Thus, Treasury outlays for TSP contributions in our analysis begin when members become vested or after 6 YOS.

Figure 6.4a
DoD and Treasury AC Personnel Cost Change for Option A in the
Transition Phase with Grandfathered Members and No Opt-In Feature
(\$2013)

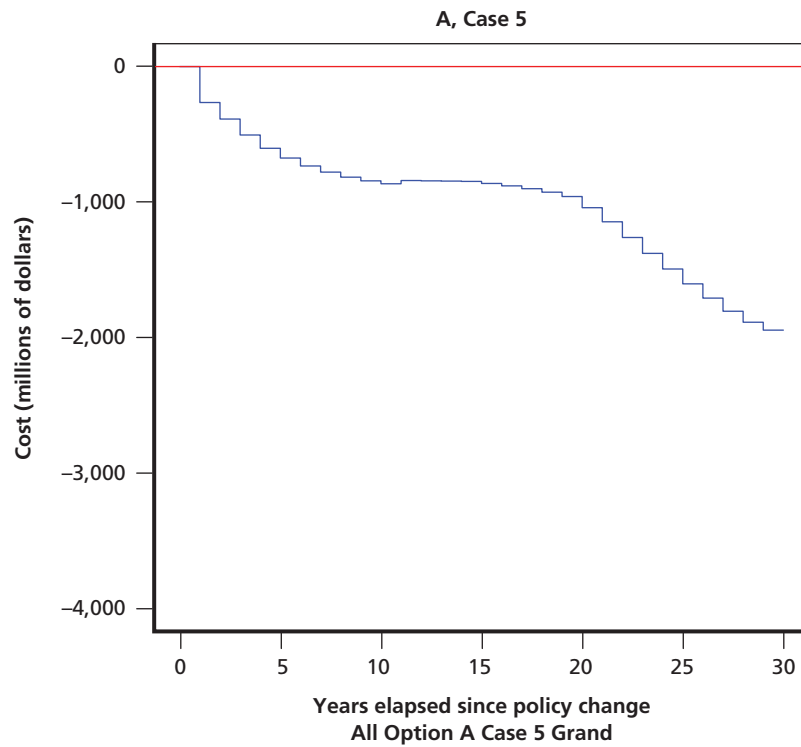
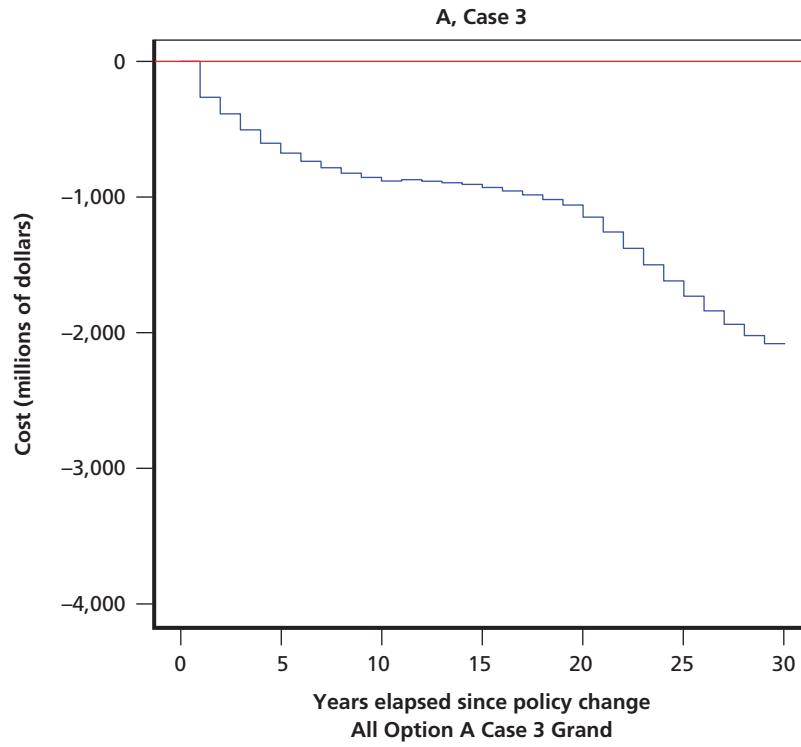


Figure 6.4b
DoD and Treasury AC Personnel Cost Change for Option B in the
Transition Phase with Grandfathered Members and No Opt-In Feature
(\$2013)

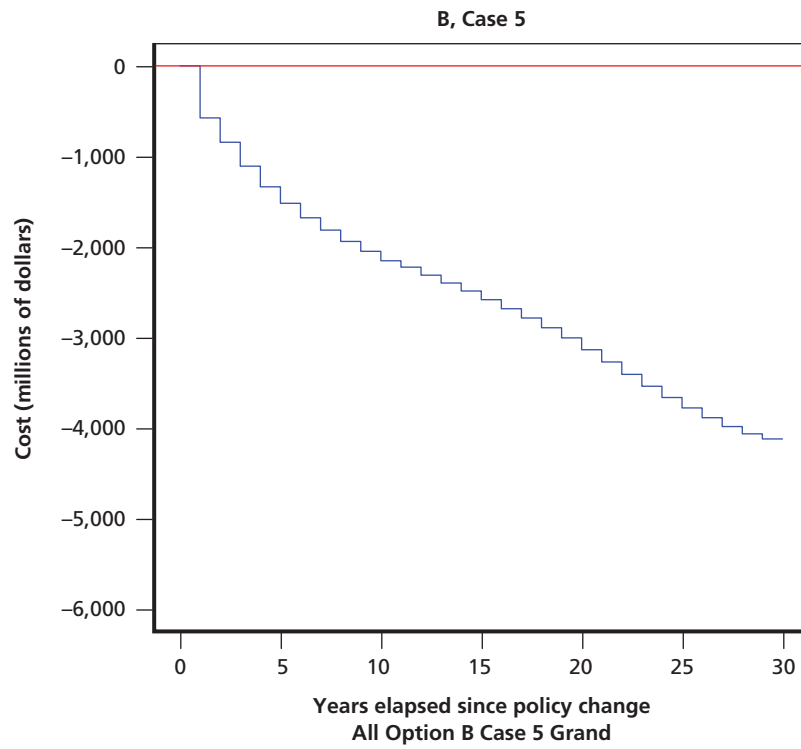
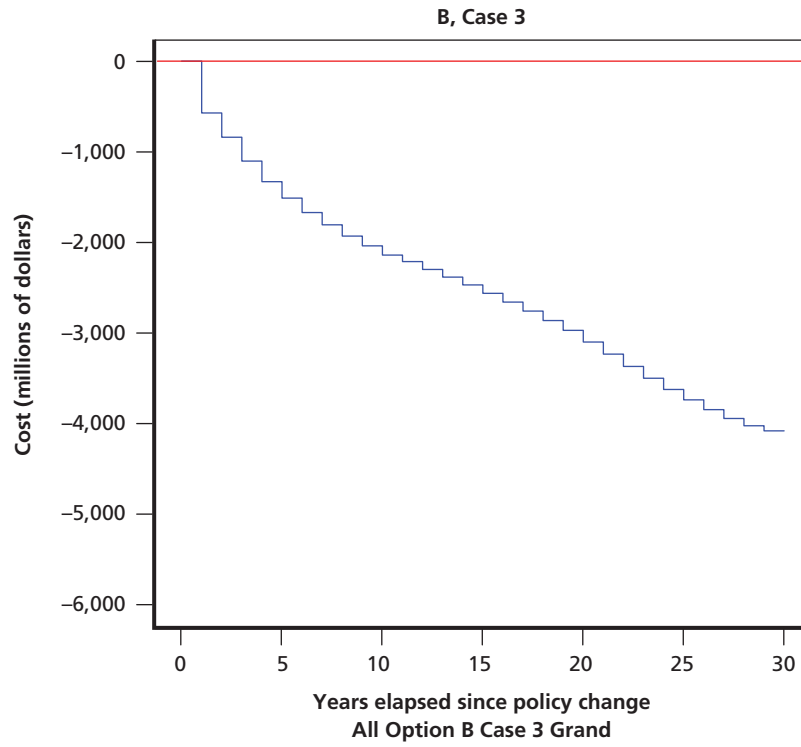


Figure 6.4c
DoD and Treasury AC Personnel Cost Change for Option C in the
Transition Phase with Grandfathered Members and No Opt-In Feature
(\$2013)

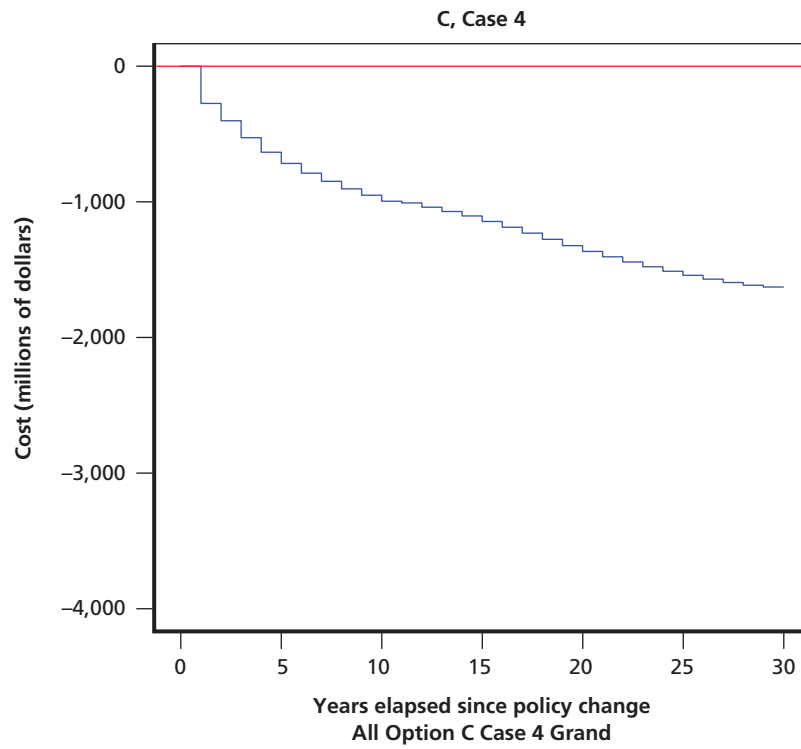
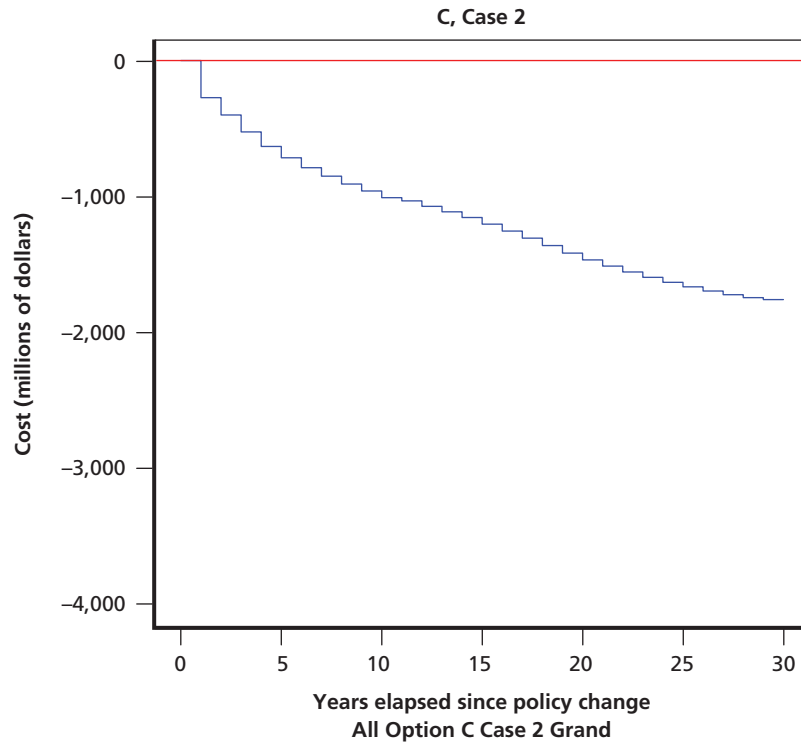


Figure 6.4d
DoD and Treasury AC Personnel Cost Change for Option D in the
Transition Phase with Grandfathered Members and No Opt-In Feature
(\$2013)

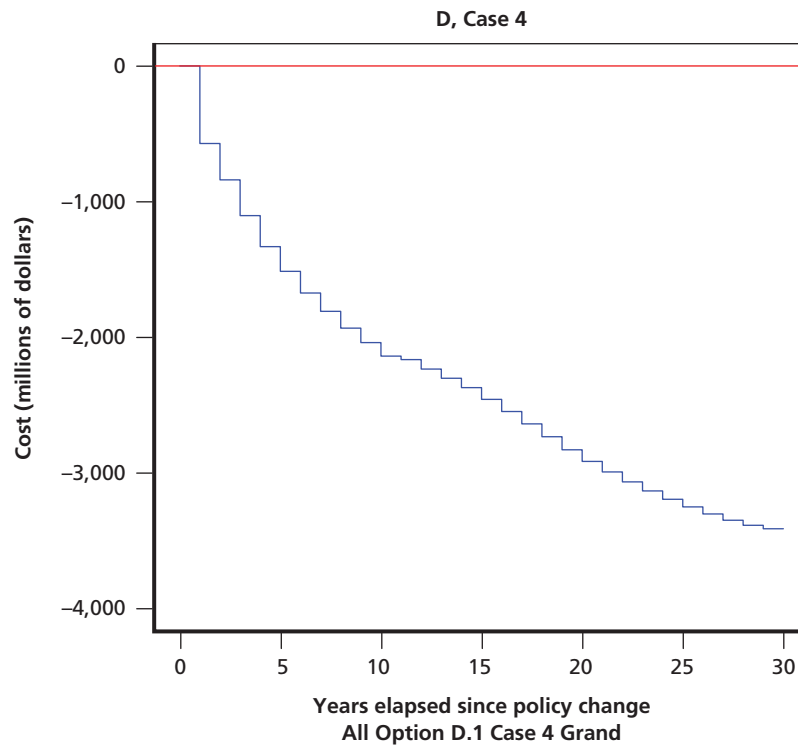
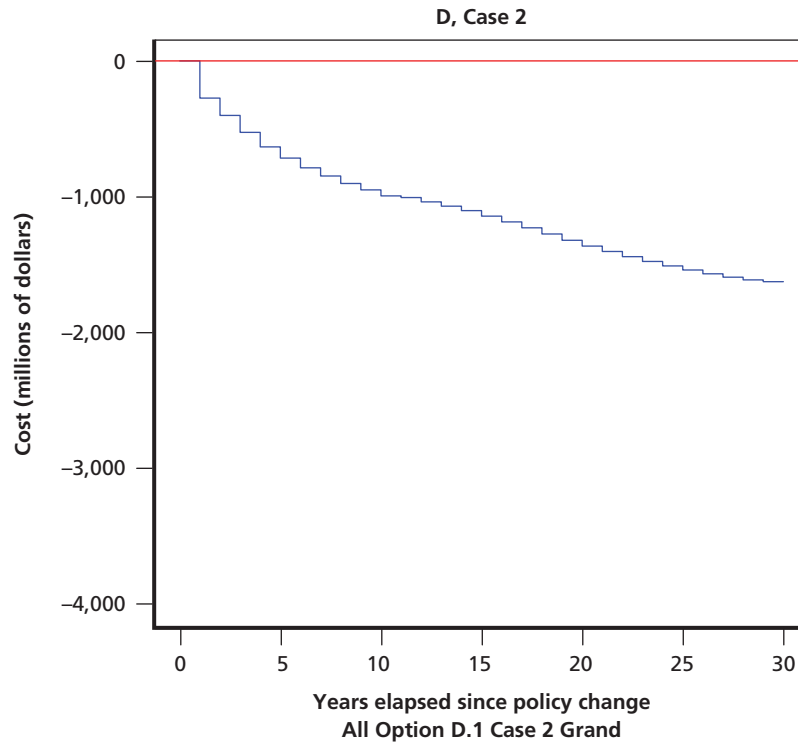


Figure 6.5a
Change in Treasury Outlays for AC Personnel for Option A in the Transition Phase with Grandfathered Members and No Opt-In Feature (\$2013)

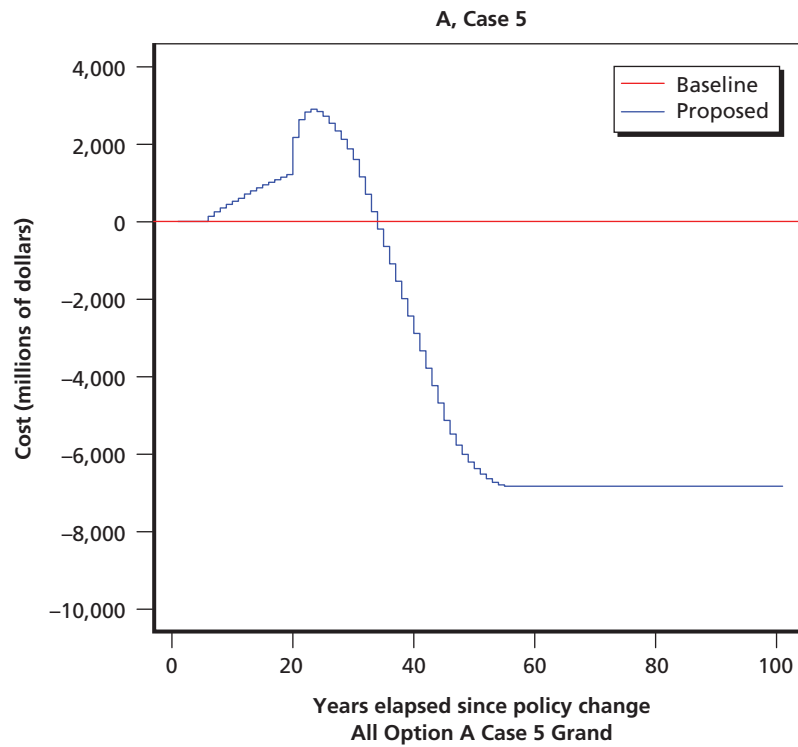
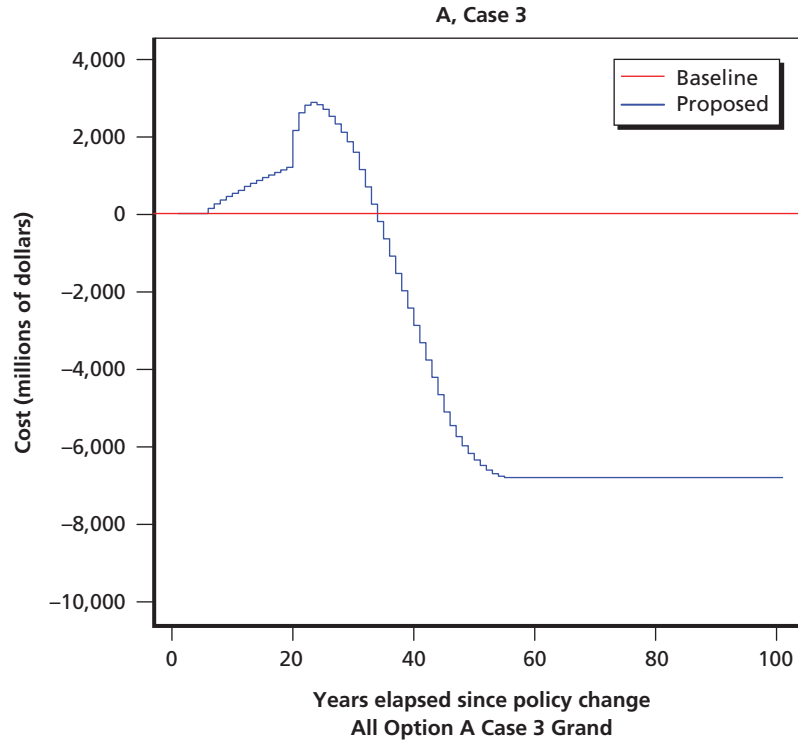


Figure 6.5b
Change in Treasury Outlays for AC Personnel for Option B in the
Transition Phase with Grandfathered Members and No Opt-In Feature
(\$2013)

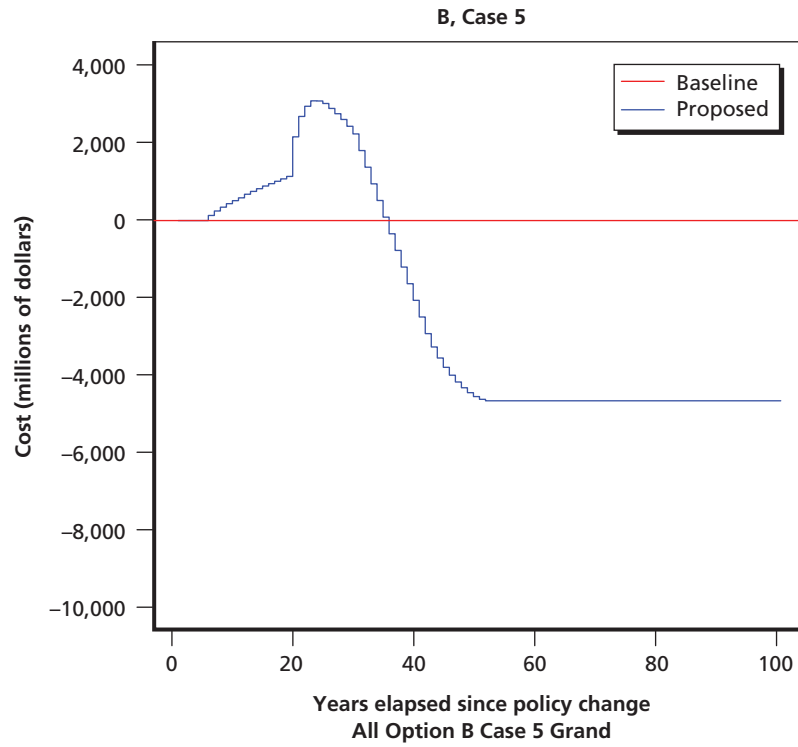
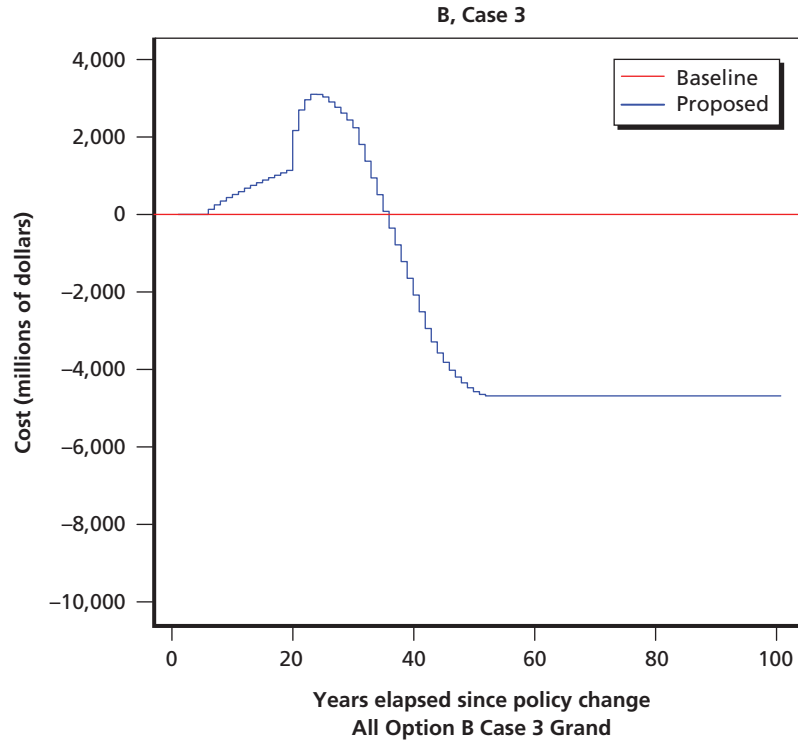


Figure 6.5c
Change in Treasury Outlays for AC Personnel for Option C in the
Transition Phase with Grandfathered Members and No Opt-In Feature
(\$2013)

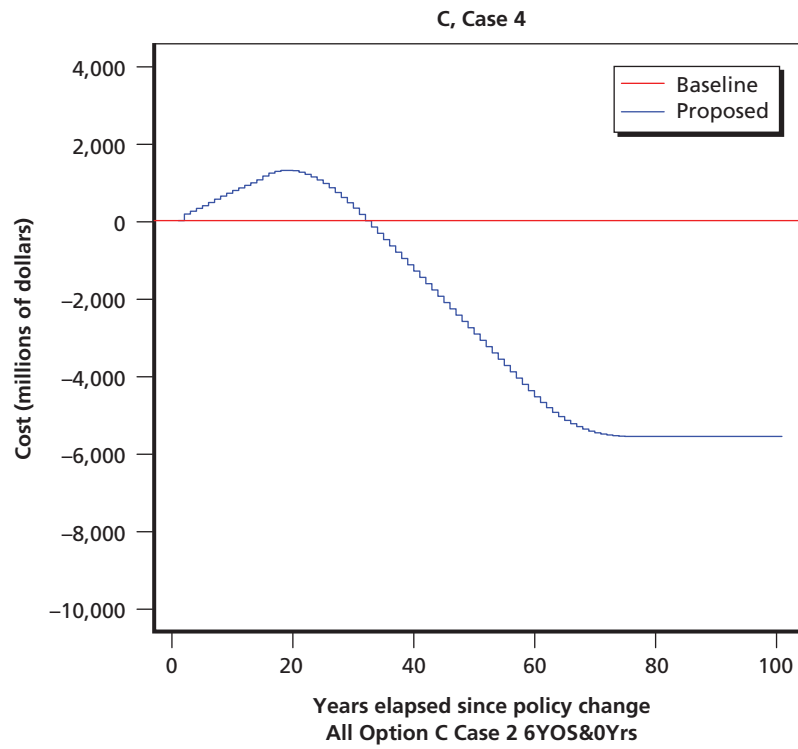
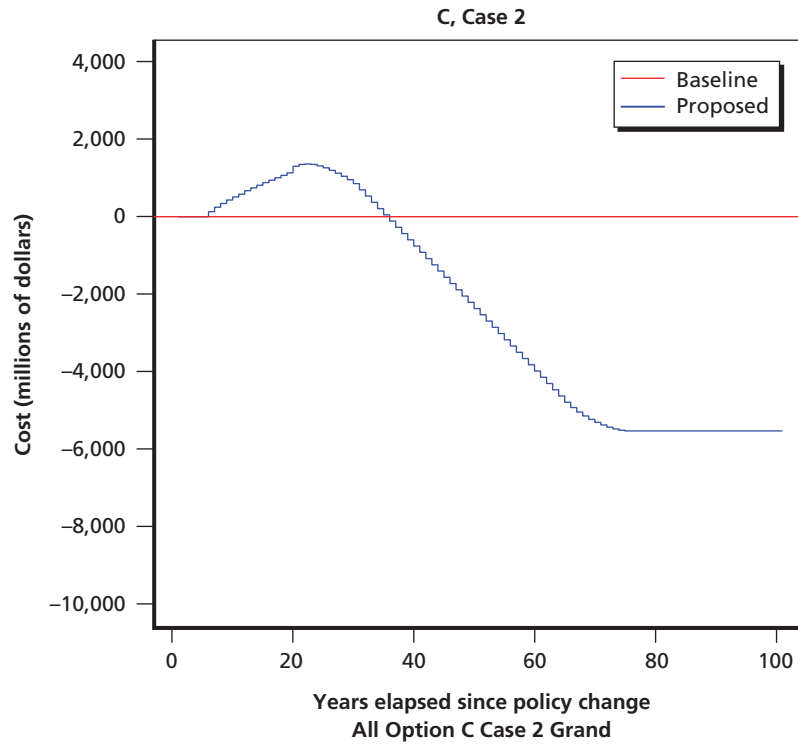


Figure 6.5d
Change in Treasury Outlays for AC Personnel for Option D in the
Transition Phase with Grandfathered Members and No Opt-In Feature
(\$2013)

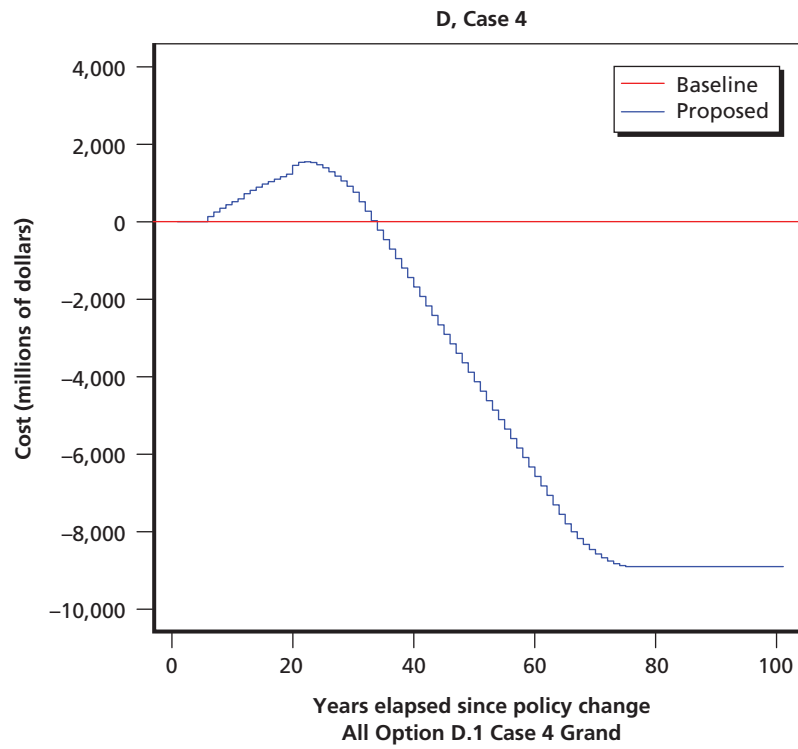
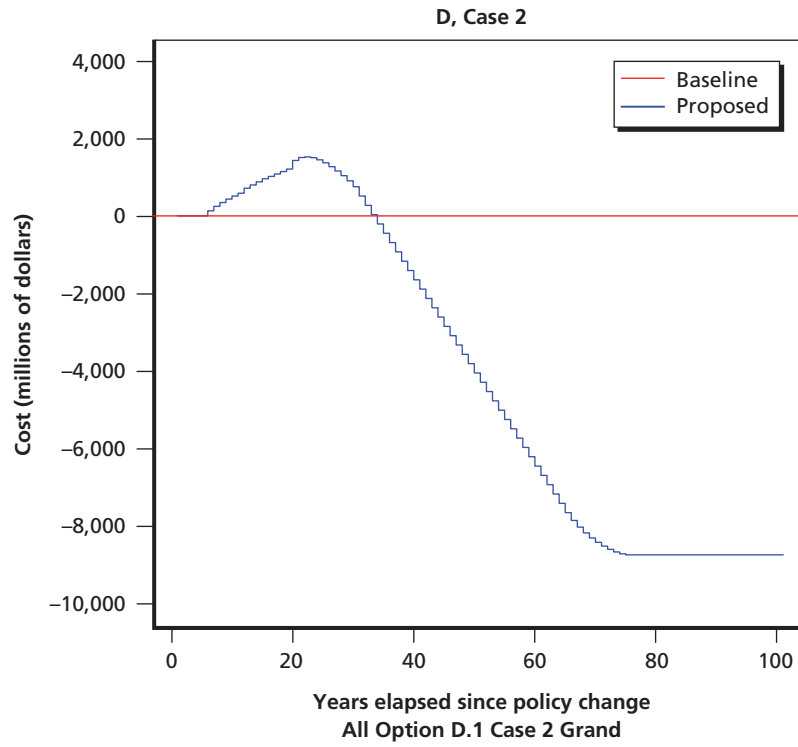
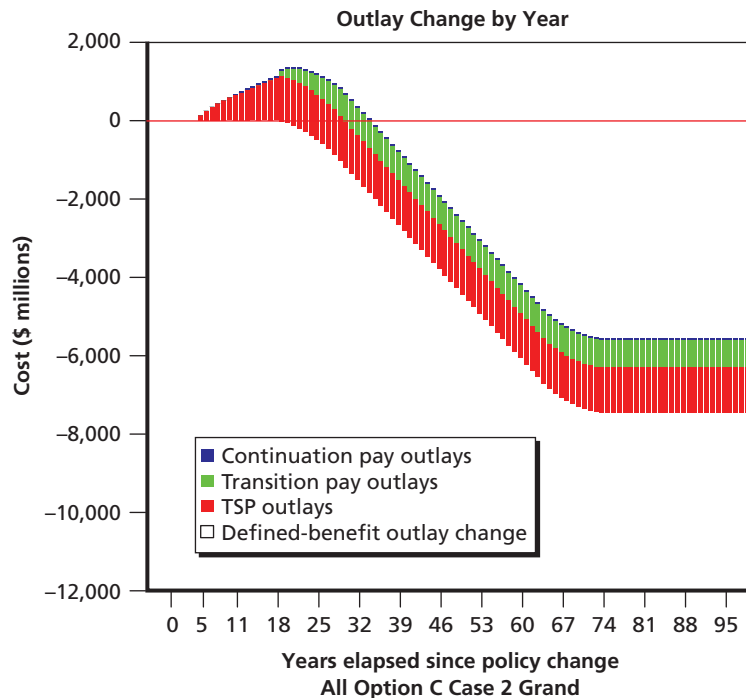


Figure 6.6
Change in Treasury Outlays for AC Personnel by Element of Outlay
for Option C, Case 2, in the Transition Phase with Grandfathered
Members and No Opt-In Feature (\$2013)



RAND RR501-6.6

years 6 and 20 because TSP contributions, continuation pay, and transition pay represent new compensation elements.

Outlays for the new defined-benefit plan also begin after 20 elapsed years, as members under the new system become retirement-eligible and leave. However, because the defined-benefit plan has a lower multiplier than the current system, the defined-benefit-related outlays for a given member under the new system are less than for a given member under the current system. Thus, total outlays begin to fall after 20 elapsed years. As members under the current, more expensive system age and eventually die and more members are covered by the new, less costly system, outlays begin to drop below the baseline. For Option C, case 2, outlays begin to decrease after 36 elapsed years. The new steady state occurs after 75 years when all members under the current system have died, and the Treasury is no longer paying annuities based on the current system.

Figures 6.5a–6.5d showed that the time pattern of outlays is generally the same across options, but some differences exist. In particular, there are differences across the two design concepts. Options A and B, representing Concept I, show a sharp increase in outlays after 20 elapsed years, compared with Options C and D, representing Concept II. This is because the transition pay multiplier is considerably higher under Concept I, as shown in Table 4.5. For example, the multiplier is 3 under Option B but only 0.75 under Option D. On the other hand, outlays drop much more rapidly under Concept I compared with Concept II, so that the steady state is reached far more rapidly. The steady state is reached after 55 years under Option A compared with 75 years under Option C. This occurs because Concept I provides

only a partial defined-benefit annuity that is capped during the second career, while Concept II provides a full annuity during the second career. Thus, outlays are significantly lower under Concept I when members are in their second career.

Opt-In Implementation Strategy

The DRM capability was extended to include the opt-in decision for AC members, as documented in Asch, Mattock, and Hosek (2013). In the model, members make their decision to opt in during the first year after the policy is implemented. The DRM can also allow multiyear windows whereby members choose not only whether to opt in but when to opt in; however, our analysis for the DODWG considered only a one-year window. Just as members are modeled as deciding whether to stay or leave the AC in a given period based on whether the value of staying exceeds the value of leaving, the opt-in decision is modeled as a choice between staying under the current system or choosing the new system. Members are assumed to choose the new system if the value of staying in the AC is higher under the new system than under the current system. From a modeling perspective, the opt-in decision adds an additional level of complexity because the model must keep track of what decision the member made and where in his or her career the member is, i.e., the YOS, when the decision was made. The member's opt-in decision will be affected by the specific features of the new system, such as the level and timing of continuation pay, the TSP, the defined-benefit plan, and transition pay.

The opt-in decision will also be affected by any restrictions or requirements related to the transition period. The DODWG set the requirement that DoD will begin offering TSP contributions only to members with two completed years in the new plan. For new entrants, who are automatically covered by the new system, two calendar years in the plan occur when they have completed 2 YOS and are starting YOS 3. As shown in Table 4.5, all of the alternatives would require DoD TSP contributions between YOS 3 and 20, so the two-year requirement corresponds to the broader requirement that members have 2 completed YOS and are beginning YOS 3 before contributions can begin. However, for members opting into the new system at, say, YOS 10, they would receive no TSP contributions until they reach YOS 12. Thus, although these members would be vested because they have 6 YOS, they would still have to wait two years before they had any TSP funds to claim.

At the request of the DODWG, we also considered three different vesting restrictions:

1. Members could access their TSP funds after 6 YOS and 6 years in the new plan.
2. Members could access their TSP funds after 6 YOS and 2 years in the new plan.
3. Members could access their TSP funds after 6 YOS and 0 years in the new plan.

In all of these alternatives, members are still required to complete 6 YOS before they are able to access their TSP funds, consistent with the 6 YOS vesting requirement in Table 4.5. However, in the first alternative, they would also require 6 calendar years in the new plan. For new entrants, YOS 6 and the sixth calendar year occur at the same time. However, for members with 10 YOS who opt in to the new system, the sixth year would occur at YOS 16. In the first alternative, with no calendar year restriction, TSP contributions would be made for these members beginning at YOS 12, and they could claim those funds only after reaching YOS 16. In the second alternative, the calendar year restriction is reduced to two, and in the third case

there is no calendar year restriction. In the third alternative, members who opt in and then separate can immediately claim the full array of benefits. However, because of the requirement that TSP contributions are made only when members have two years in the new plan, there will be no TSP funds to access.

Using the DRM, we produced estimates of the percentage of members who would choose to opt in to the new system and the effects on the time pattern of costs and outlays under the three alternatives, for each of the compensation reform options. The DODWG opted for the third alternative, whereby members can access their TSP funds after 6 YOS and no additional calendar years in the plan. We present the transition phase results for this third alternative but not the other two, though our discussion briefly touches on how the results differed under alternatives 1 and 2. Also, because the compensation reforms were designed to sustain retention, retention remains unchanged during the transition with the opt-in implementation strategy, just as was the case with grandfathering. Thus, we do not present the retention results during the transition phase, but focus the discussion on the time pattern of cost and of outlays when members can opt in.

The key findings of the analysis are that cost savings occur more quickly when current members are permitted to opt in to the new system. On the other hand, outlays increase more rapidly in the initial years of the transition phase and decrease more rapidly in the later years. We also find that junior members are more likely to opt in to the new system than mid-career and senior members, but the percentages differ by service and by option.

Percentage of Members Who Opt In

Figures 6.7a–6.7b and 6.8a–6.8b show the percentage of each cohort that is estimated to opt in to each of the compensation reform options for selected options, where cohort is defined as the member's YOS when the policy was implemented. Thus, cohort = 10 means the member has 10 YOS at the time of the policy change. The results in the figures are for Options A and C for Army enlisted personnel and for Army officers, respectively. Appendix C presents the complete Army results as well as the results for the other services. For each cohort, the figures show the percentage that opted in at each YOS. For example, for cohort = 10, the opt-in percentage at YOS 15 is the percentage of people who are part of cohort 10 and who opted in that are still present at YOS 15. Thus, the figures show the subsequent retention pattern of those who opted in, by cohort.

We show the results for the Army, but it is important to note that unlike the retention results, where the Army results are quite representative of the results for the other services, that is not always the case with the opt-in rates. The results differ across services, and between enlisted personnel and officers, because continuation pay differs. Further, for the opt-in choice the estimated personal discount rate differs (Appendix E). As described in Chapter Three, the personal discount rate is one of the estimated parameters of the DRM. When the estimated discount rate is higher, as is the case for enlisted personnel, members value current dollars even more than when the discount rate is lower, and will place a higher value on options that put more dollars in the current pay than options that put more dollars in deferred benefits.

The percentage of members who opt in varies by option, between enlisted and officers, and across services. That said, a consistent result is that senior members are less likely to opt in than junior and mid-career members. For example, Figures 6.7a–6.7b show that virtually all Army enlisted personnel with fewer than 20 YOS opt in to the new system under Option A (as well as under Option B, as shown in Appendix C), while only the most junior personnel

Figure 6.7a
Percentage of Army Enlisted Personnel Who Opt In Under Option A

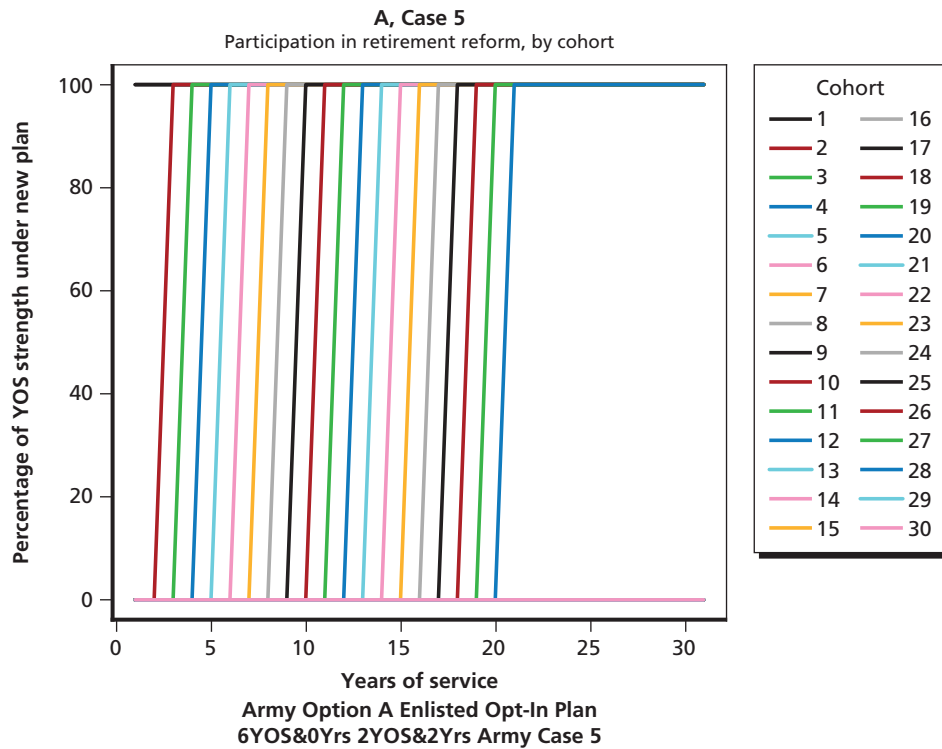
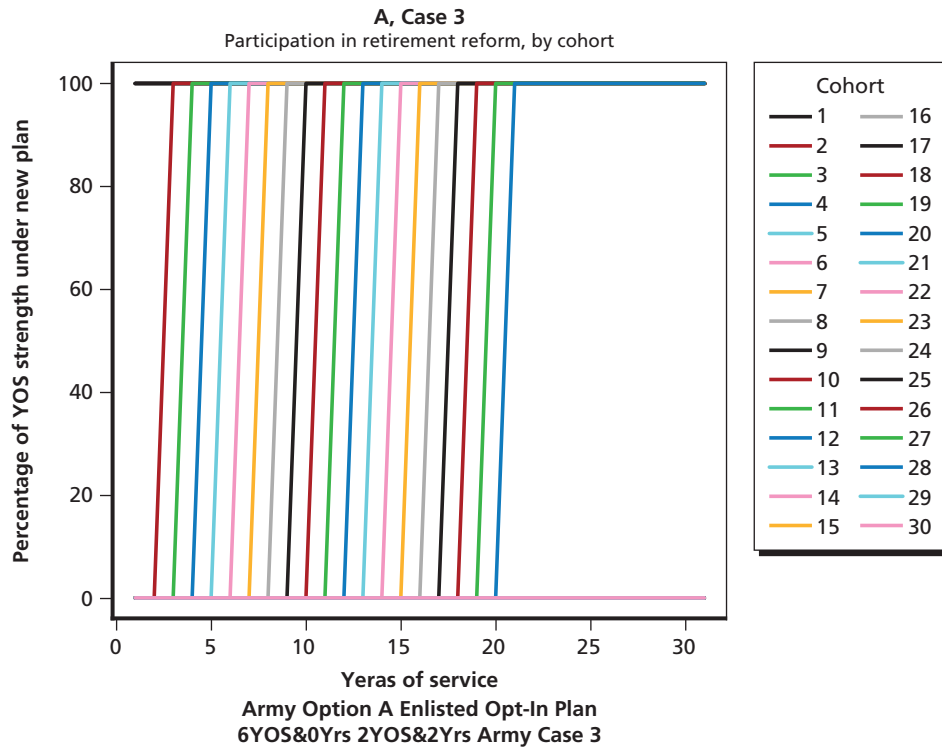
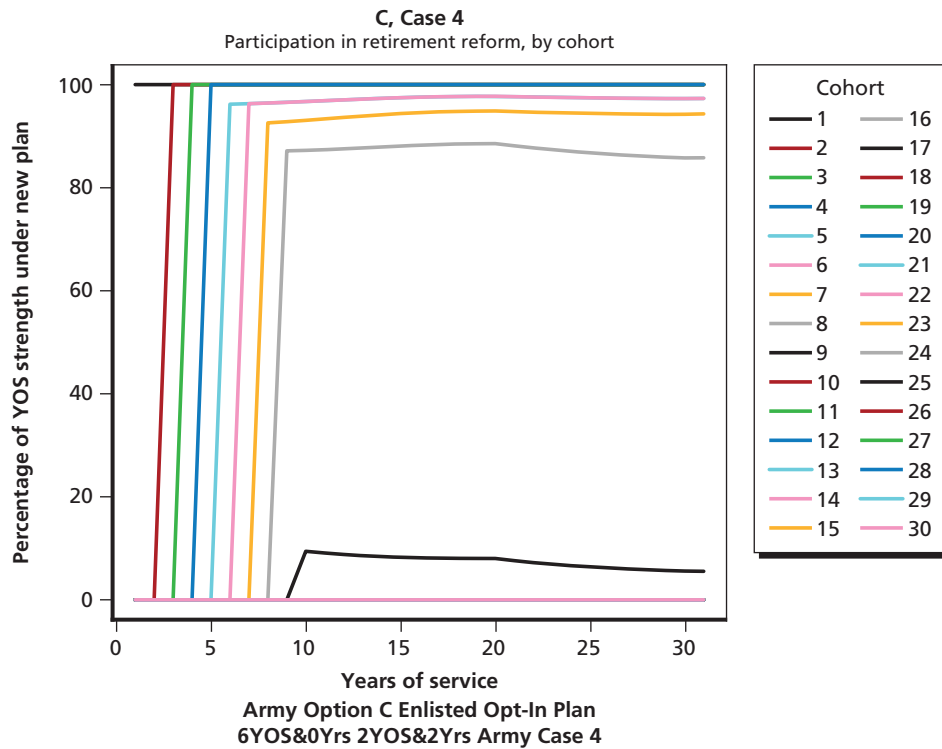
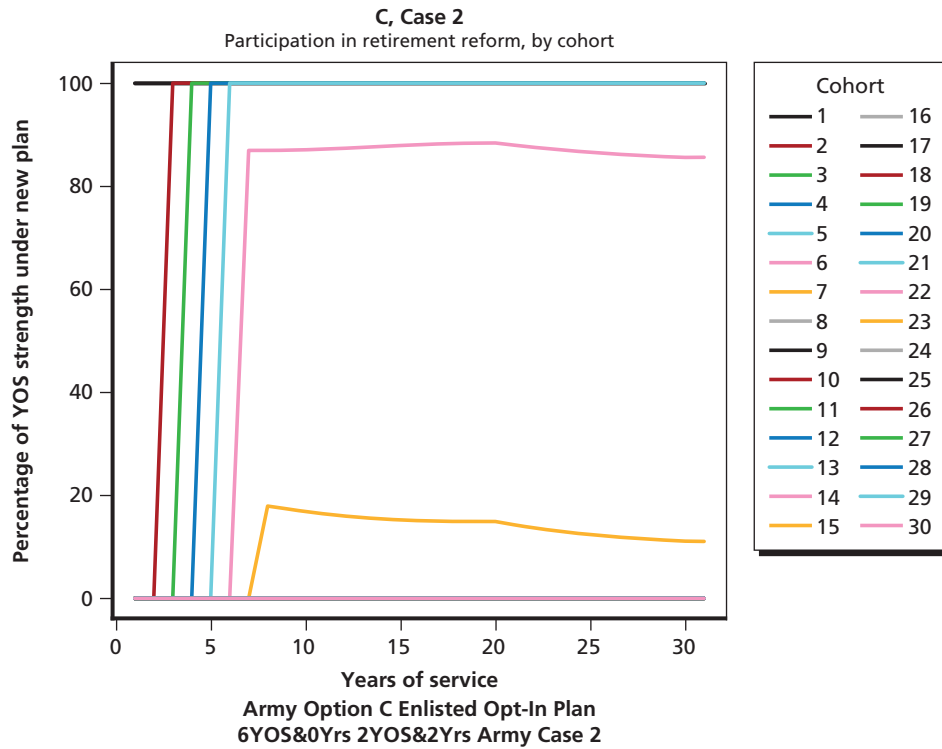


Figure 6.7b
Percentage of Army Enlisted Personnel Who Opt In Under Option C



opt in to the new system under Options C (and D). For example, for Army enlisted personnel, 100 percent of those with 5 or fewer YOS opt in to Option C, case 2; 87 percent of those with 6 YOS do so; 18 percent of those with 7 YOS do so; and no one above 7 YOS opts in to this alternative. The percentages differ for officers, as shown in Figures 6.8a and 6.8b, but again, the general pattern is that junior personnel are more likely to opt in than more senior personnel.

The other general pattern, though there are exceptions, is that the percentage who opt in tends to be higher for Option A than for B within Concept I and higher for Option C than for Option D within Concept II. This pattern is more evident for Army officers than for Army enlisted personnel. For example, no one with more than 13 YOS opts in under Option A, case 3, while no one with more than 6 YOS opts in under Option B, case 3.

Time Pattern of Costs When Members Can Opt In

We next turn to the time pattern of cost savings when members can opt in to the new system. Figures 6.9a–6.9h present comparisons of the time pattern of AC costs to DoD and the Treasury during the transition period when members are grandfathered and not permitted to opt in (top graph) and when they are given an opt-in choice (bottom graph). (The top graphs are the same as in Figures 6.4a–6.4d.) For every alternative, we find that cost savings are realized faster when members can opt in to the new system. For example, for Option A, case 3 (e.g., Concept I), cost savings one year after the policy changes are \$1.1 billion, far more than the \$264 million realized when there is no opt-in feature.³ The amount of the drop and how quickly full cost savings are attained depends on the extent to which currently serving members choose to opt in. As seen in Figures 6.7a–6.7b and 6.9a–6.9d and the figures in Appendix B, a large fraction of personnel are predicted to opt in to Option A, though the fraction varies across services and for officer versus enlisted personnel. The more personnel who opt in, the more rapidly are cost savings realized.

Similar patterns are predicted for Concept II, such as Option C, case 2. Again, larger cost savings are realized sooner when members can opt-in. In the absence of the opt-in feature, cost-savings are \$273 million in the first year after the policy occurs. With the opt-in feature, cost savings are \$706 million in the first year. Thus, under Option C, case 2, 40 percent of the ultimate cost savings are achieved in the first year when currently serving members can opt in to the new system while under Option A, case 3, 52 percent of the ultimate cost savings are realized in the first year with the opt-in feature. Under Concept II, relatively fewer members choose to opt in, compared with Concept I, though the opt-in rates vary by service and for officers and enlisted personnel under both concepts. Nonetheless, the number who opt in is sufficient to generate considerable cost savings soon after the policy is implemented.

Time Pattern of Treasury Outlays When Members Can Opt In

Similar to Figures 6.9a–6.9h for costs, we show comparisons of Treasury outlays in Figures 6.10a–6.10h. The top graphs show the time pattern of outlays with grandfathering and no-opt in feature while the bottom graphs show the pattern with the opt-in feature. Under each alternative, the initial increase in outlays begins sooner and the ramp-up occurs faster because the Treasury must make outlays for those who opt in, not just new entrants. Currently serving

³ The cost savings figures in the text as well as in Figures 6.7, 6.9, and Appendix B account for the minor differences that occur between the retention profile under the current compensation system and the new system. If retention were completely held constant, the cost savings figures would differ somewhat.

Figure 6.8a
Percentage of Army Officers Who Opt In Under Option A

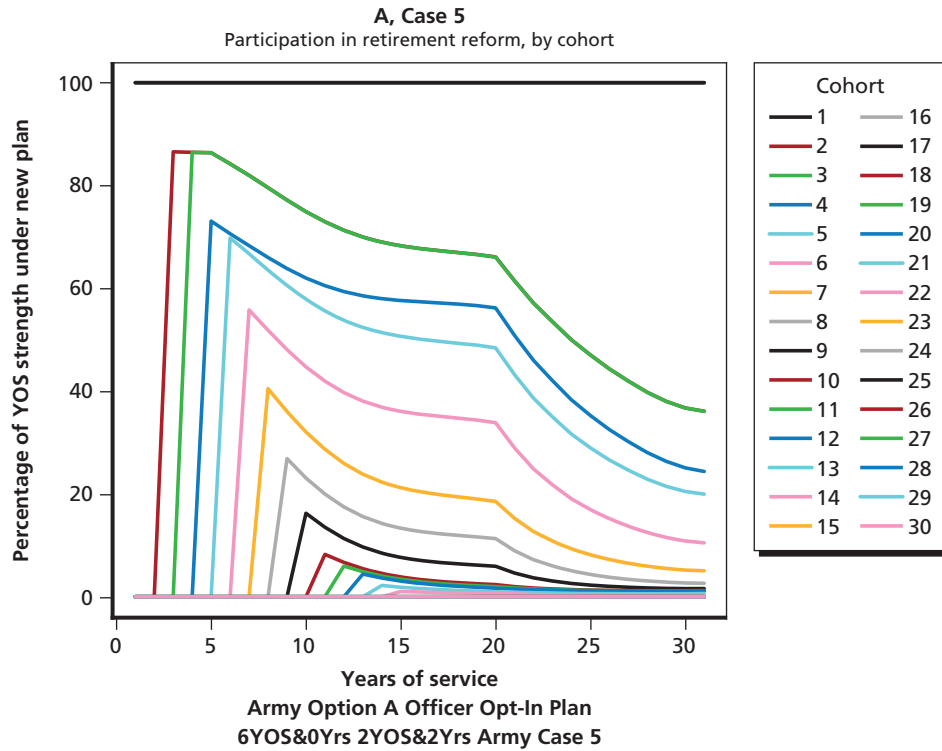
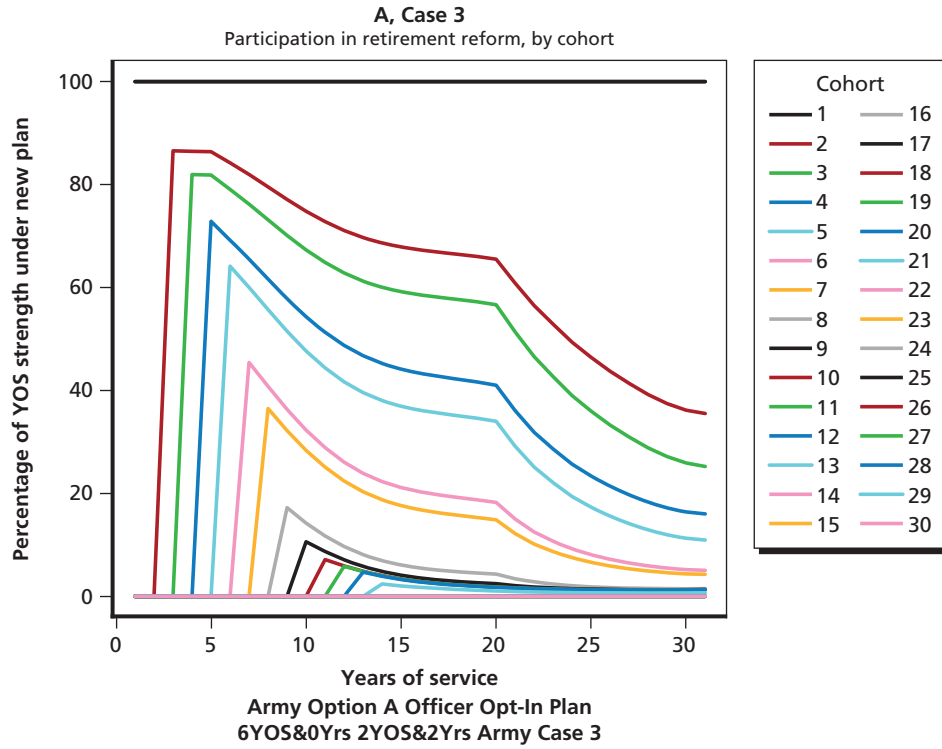


Figure 6.8b
Percentage of Army Officers Who Opt In Under Option C

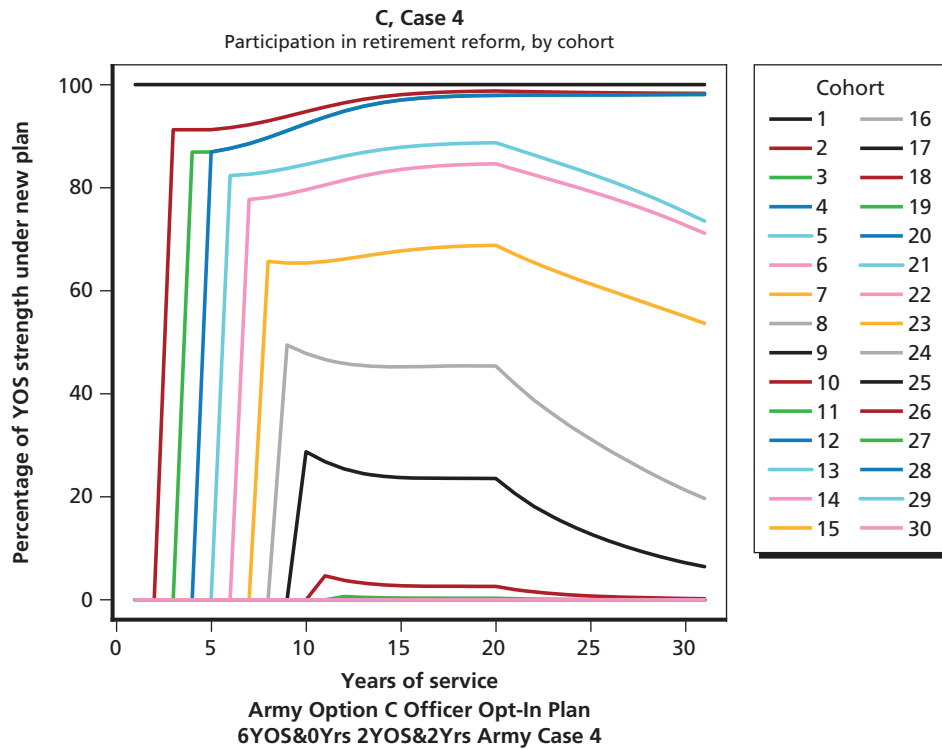
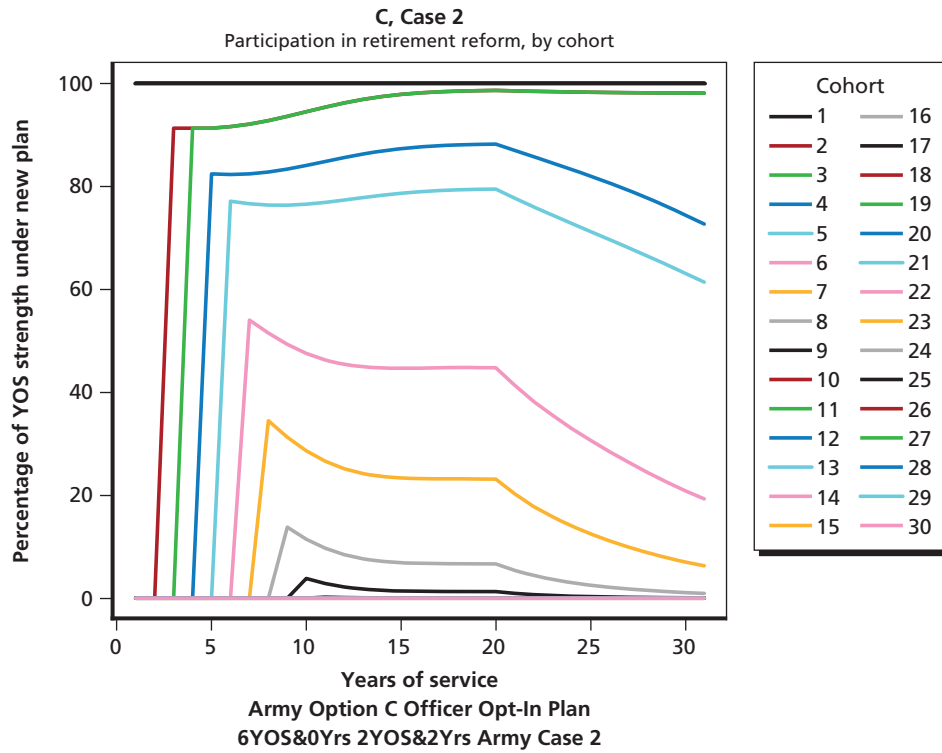


Figure 6.9a
Change in DoD and Treasury AC Personnel Costs for Option A, Case 3,
in the Transition Phase with Grandfathered Members and No Opt-In
Feature Versus with Opt-In Feature (\$2013)

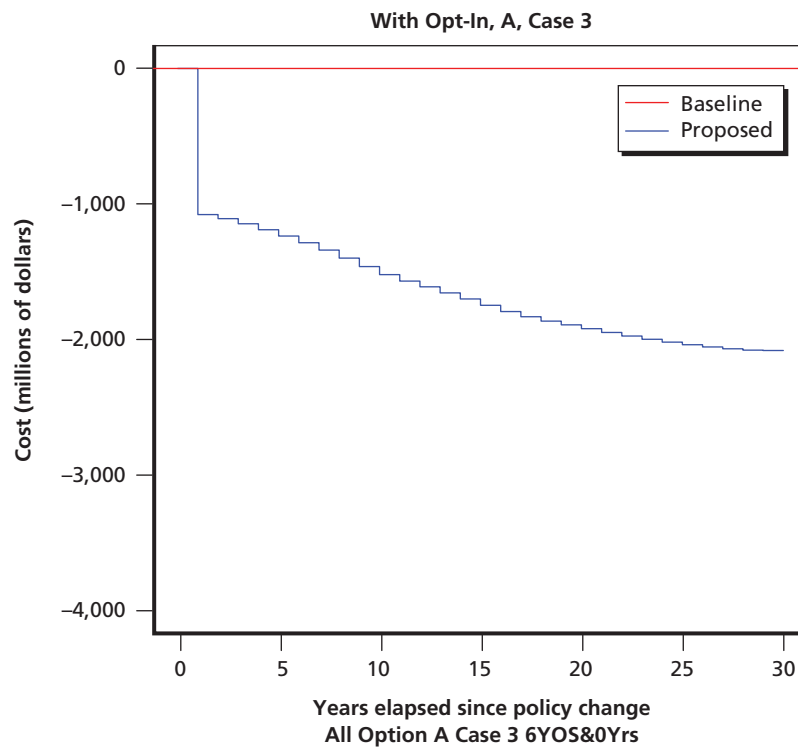
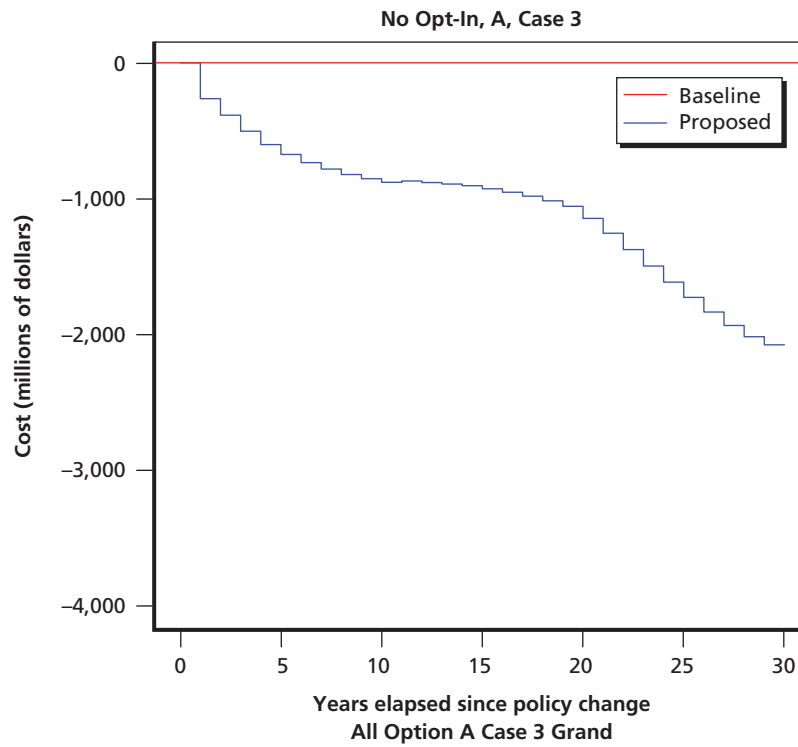


Figure 6.9b
Change in DoD and Treasury AC Personnel Costs for Option A, Case 5,
in the Transition Phase with Grandfathered Members and No Opt-In
Feature Versus with Opt-In Feature (\$2013)

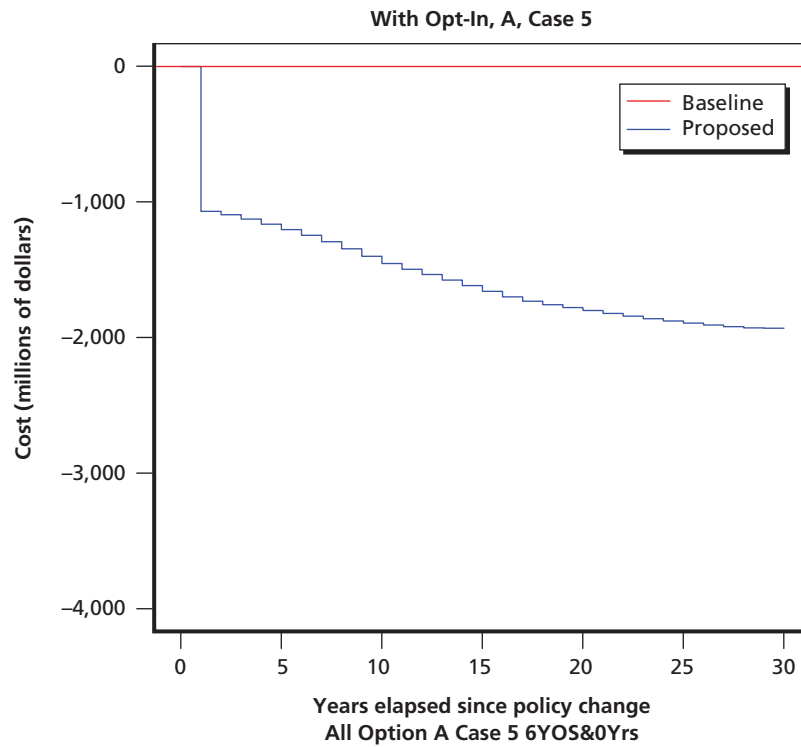
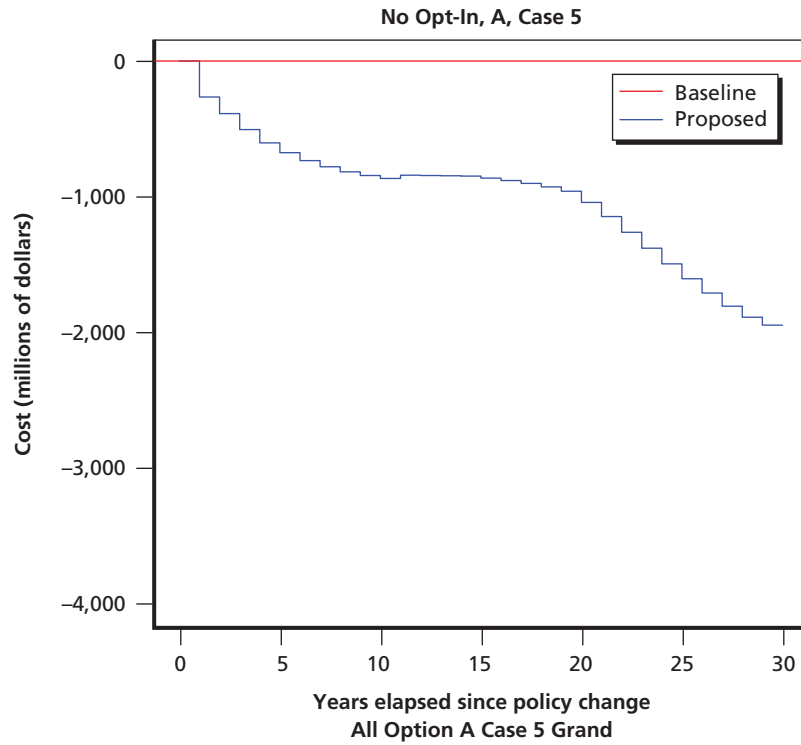


Figure 6.9c
Change in DoD and Treasury AC Personnel Costs for Option B, Case 3,
in the Transition Phase with Grandfathered Members and No Opt-In
Feature Versus with Opt-In Feature (\$2013)

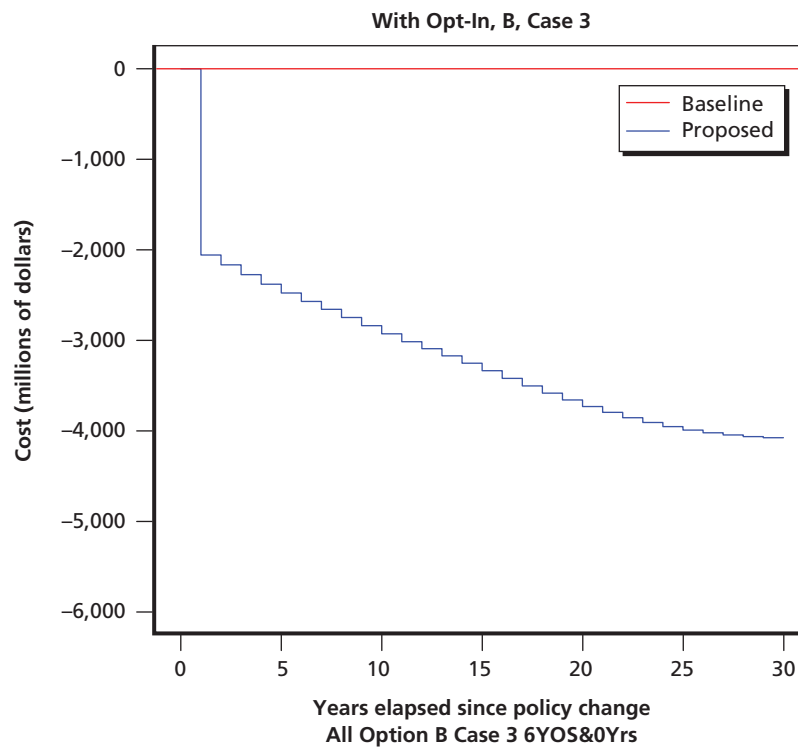
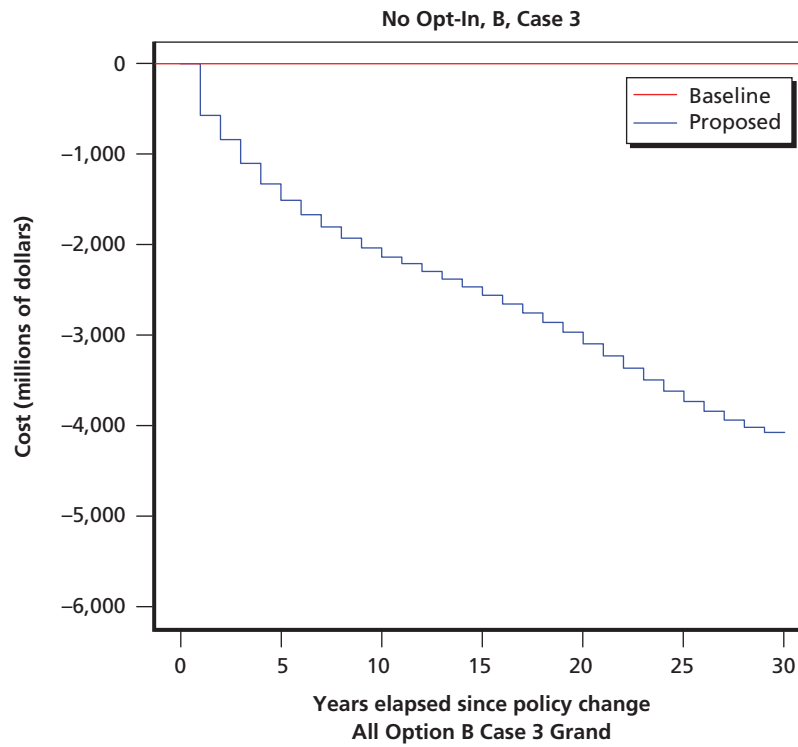


Figure 6.9d
Change in DoD and Treasury AC Personnel Costs for Option B, Case 5,
in the Transition Phase with Grandfathered Members and No Opt-In
Feature Versus with Opt-In Feature (\$2013)

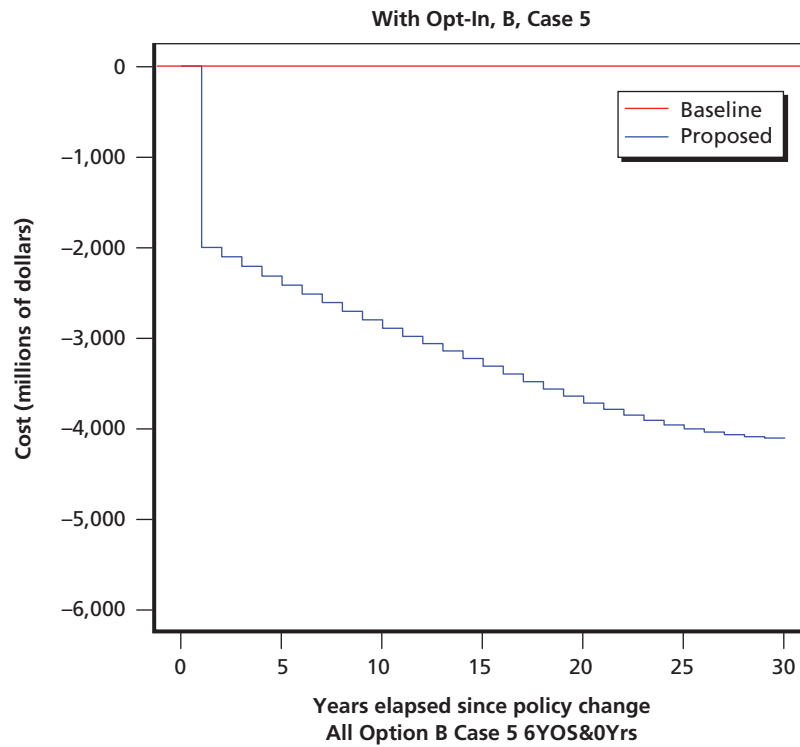
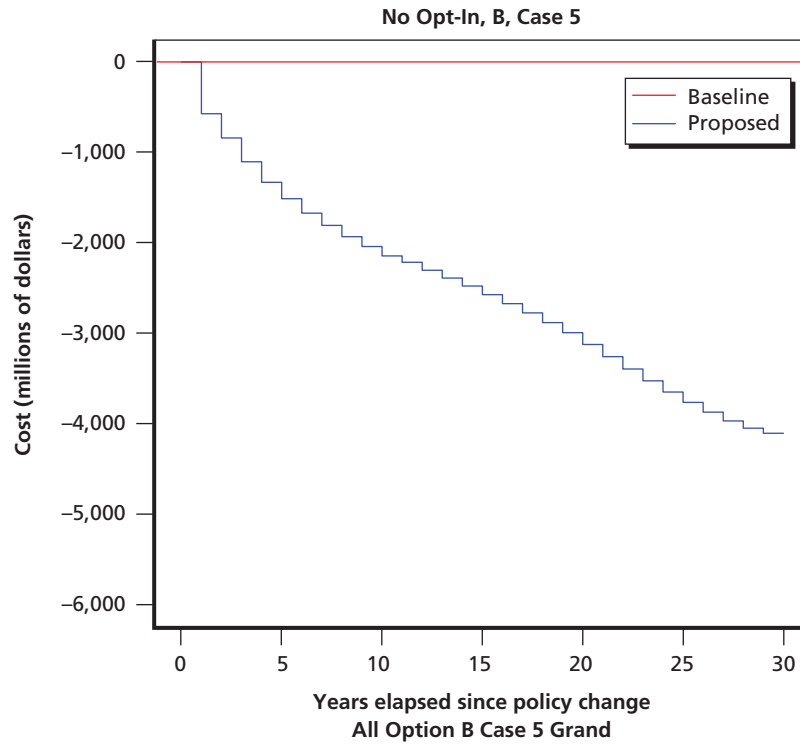


Figure 6.9e
Change in DoD and Treasury AC Personnel Costs for Option C, Case 2,
in the Transition Phase with Grandfathered Members and No Opt-In
Feature Versus with Opt-In Feature (\$2013)

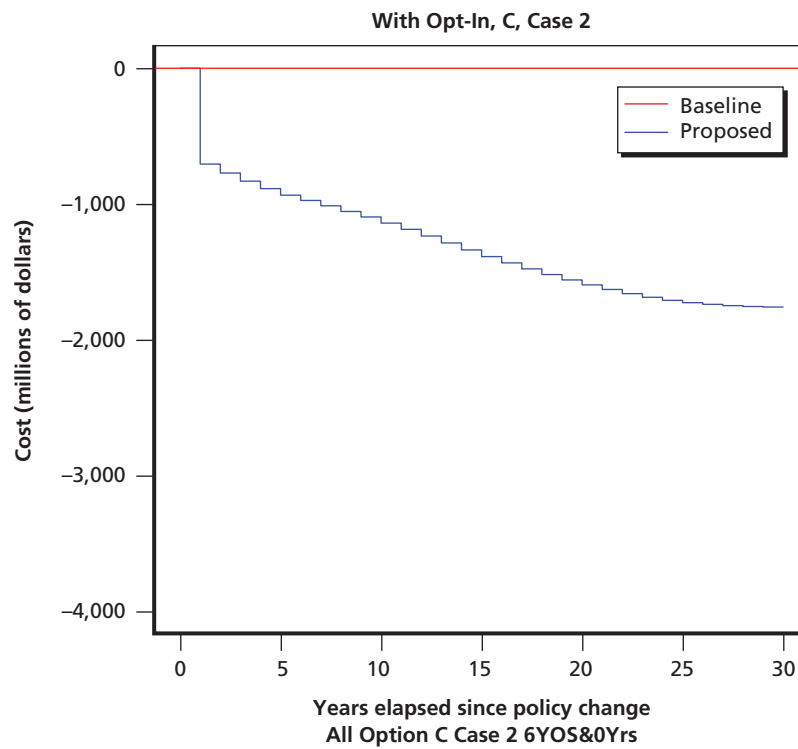
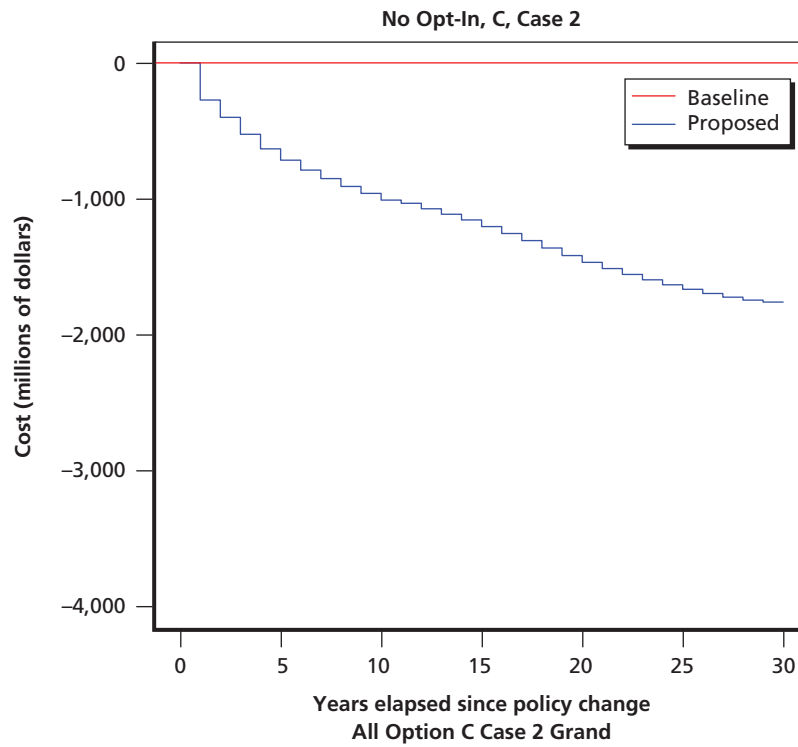


Figure 6.9f
Change in DoD and Treasury AC Personnel Costs for Option C, Case 4,
in the Transition Phase with Grandfathered Members and No Opt-In
Feature Versus with Opt-In Feature (\$2013)

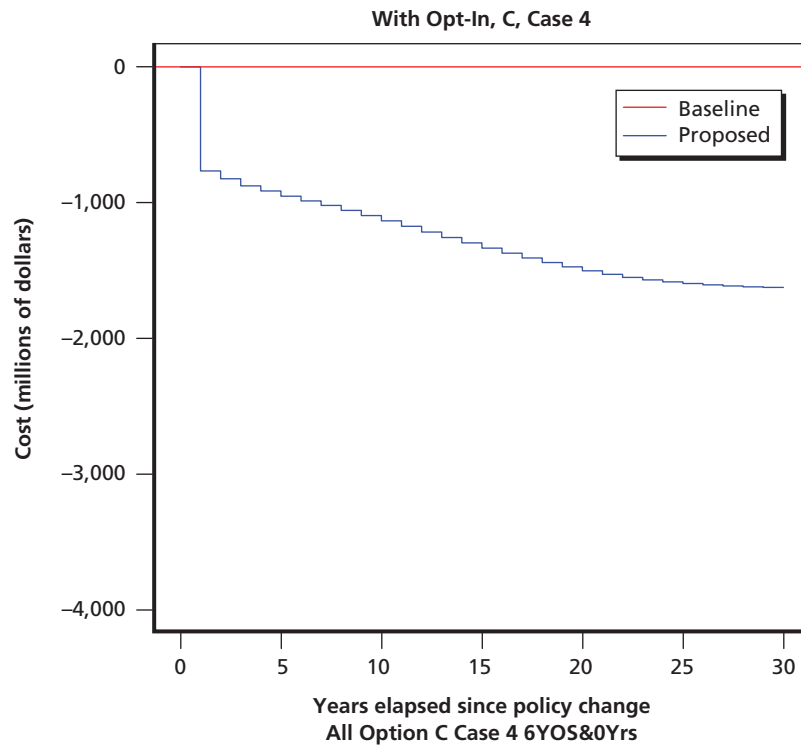
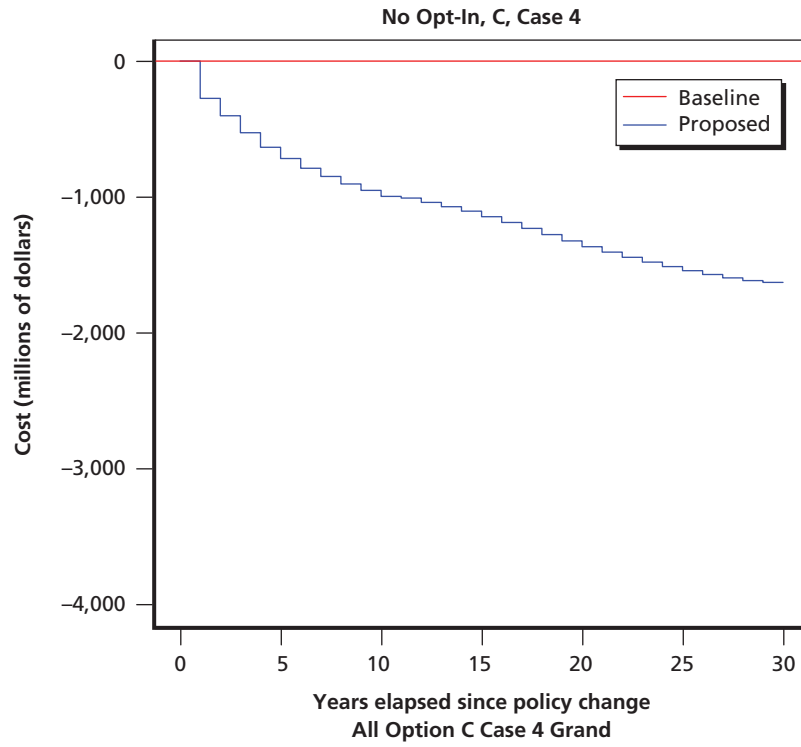


Figure 6.9g
Change in DoD and Treasury AC Personnel Costs for Option D, Case 2,
in the Transition Phase with Grandfathered Members and No Opt-In
Feature Versus with Opt-In Feature (\$2013)

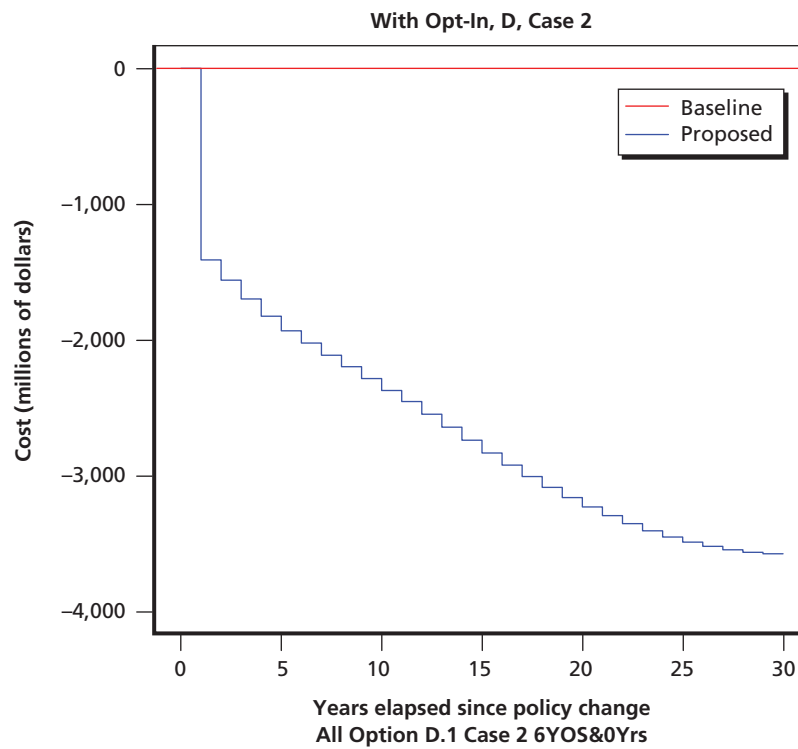
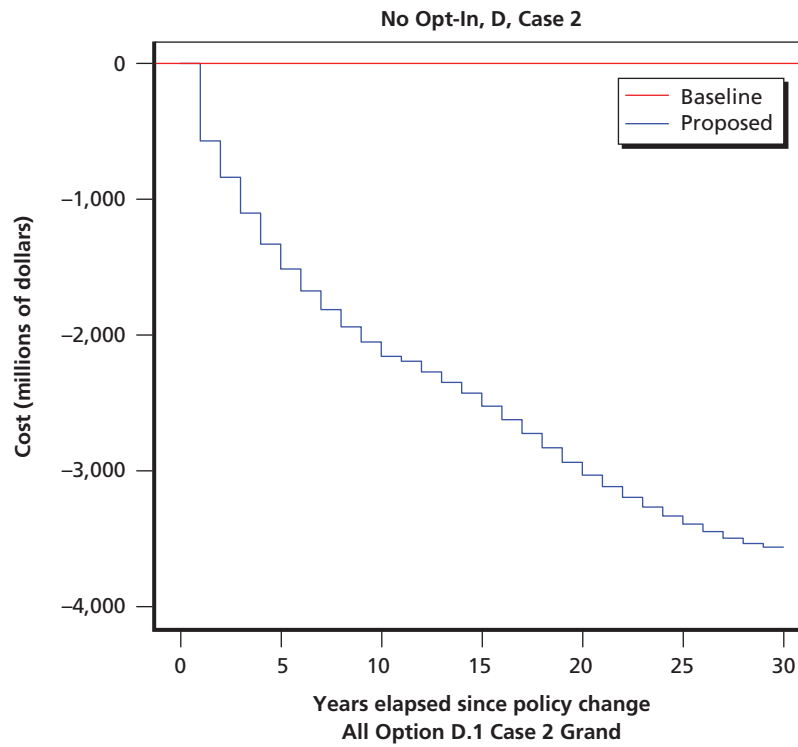


Figure 6.9h
Change in DoD and Treasury AC Personnel Costs for Option D, Case 4,
in the Transition Phase with Grandfathered Members and No Opt-In
Feature Versus with Opt-In Feature (\$2013)

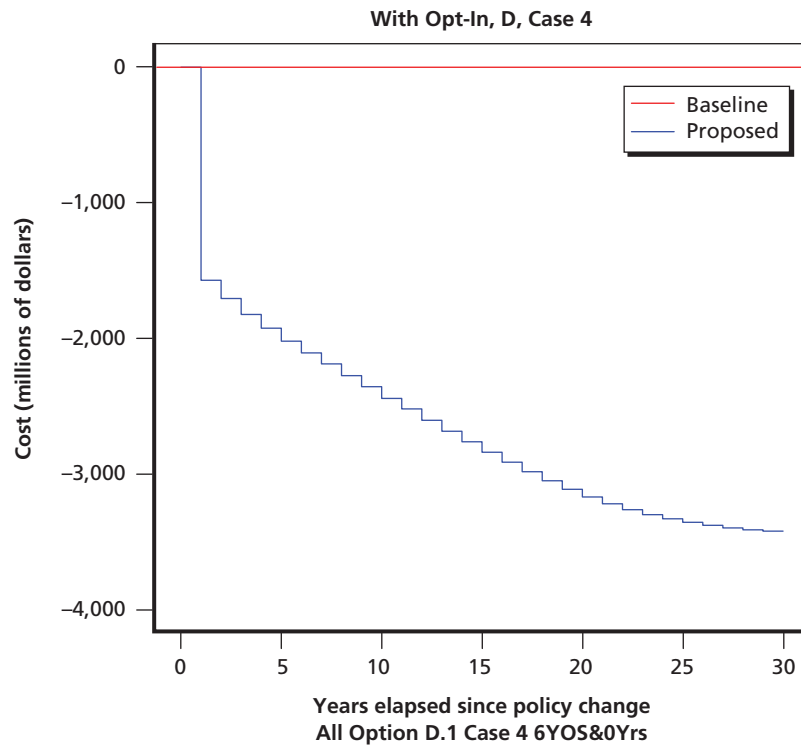
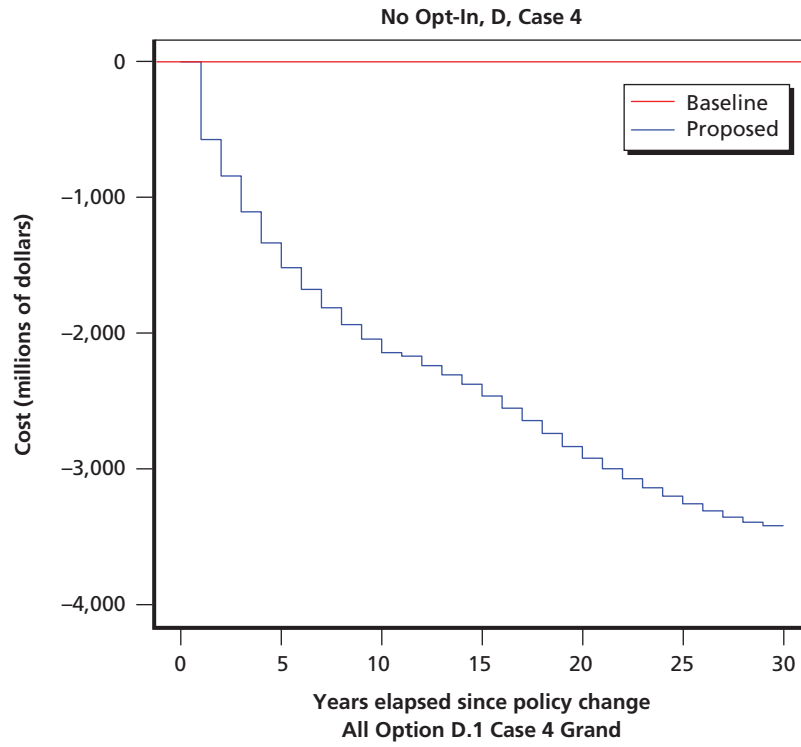


Figure 6.10a
Change in Treasury Outlays for AC Personnel for Option A, Case 3,
in the Transition Phase with Grandfathered Members and No Opt-In
Feature Versus with Opt-In Feature (\$2013)

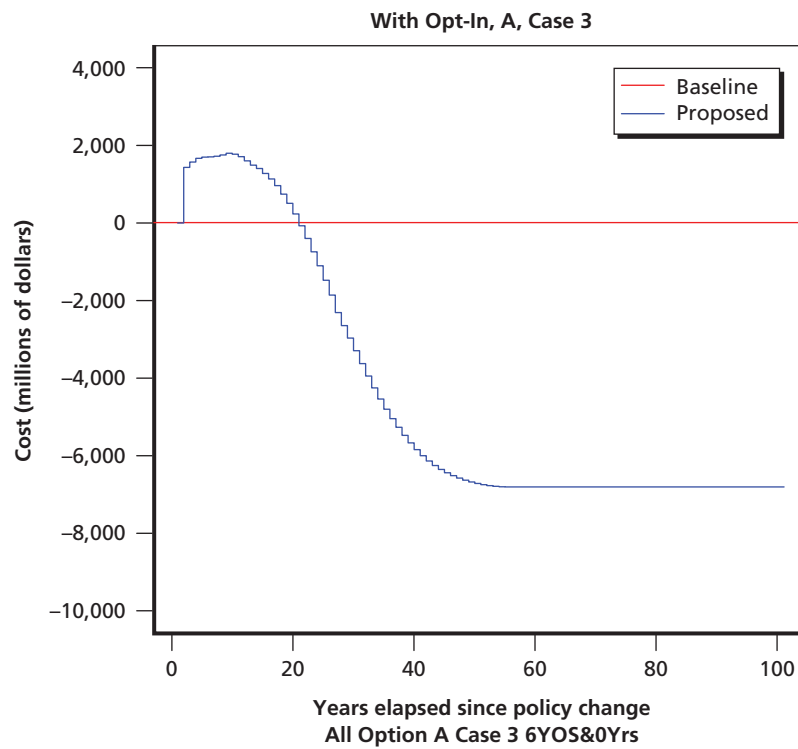
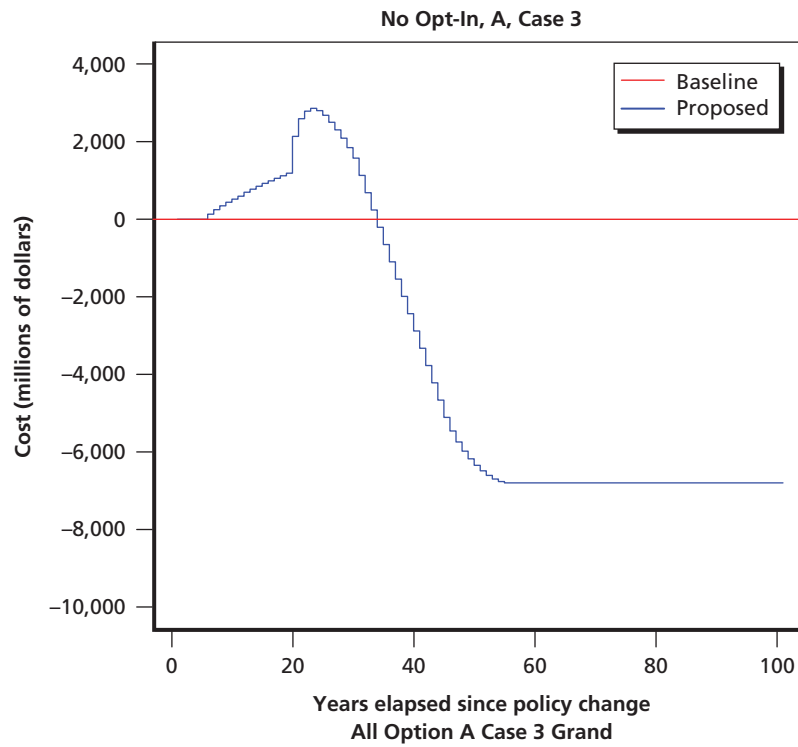


Figure 6.10b
Change in Treasury Outlays for AC Personnel for Option A, Case 5,
in the Transition Phase with Grandfathered Members and No Opt-In
Feature Versus with Opt-In Feature (\$2013)

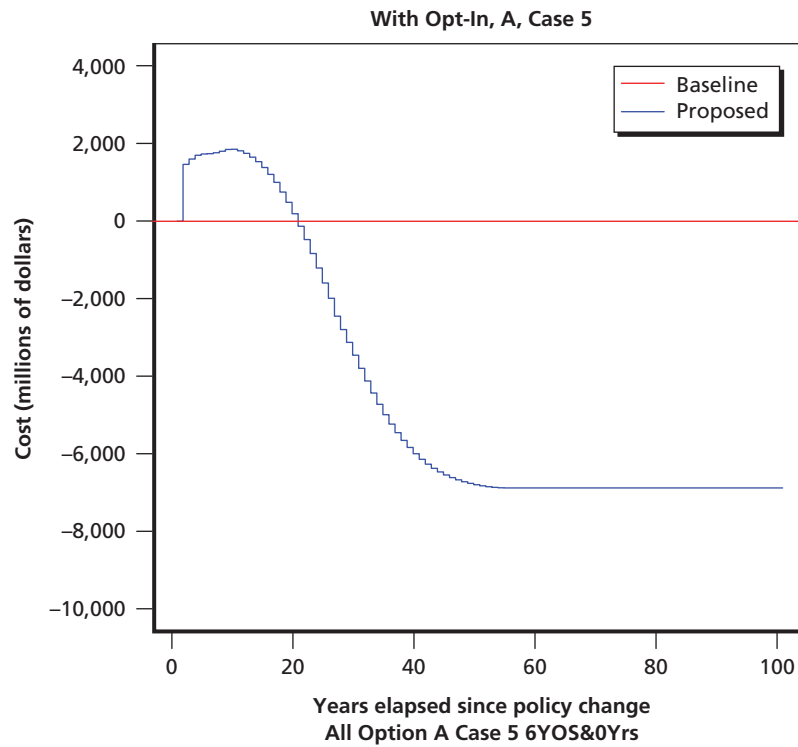
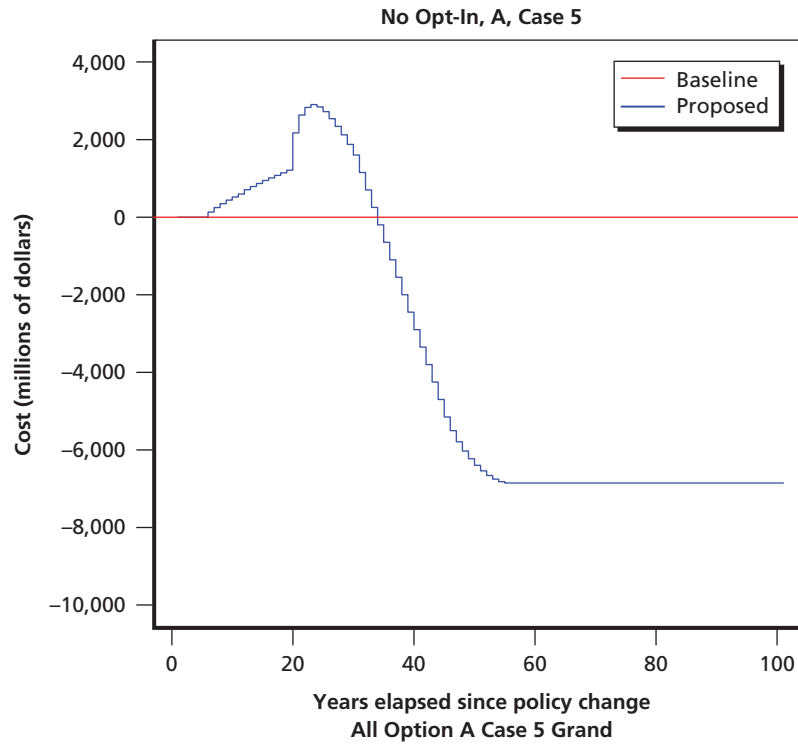


Figure 6.10c
Change in Treasury Outlays for AC Personnel for Option B, Case 3, in the Transition Phase with Grandfathered Members and No Opt-In Feature Versus with Opt-In Feature (\$2013)

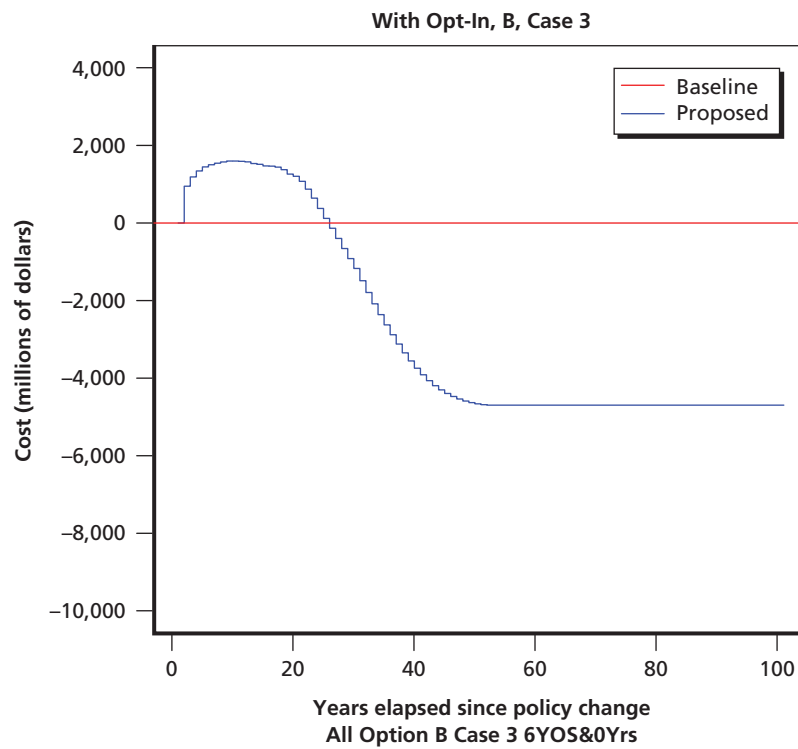
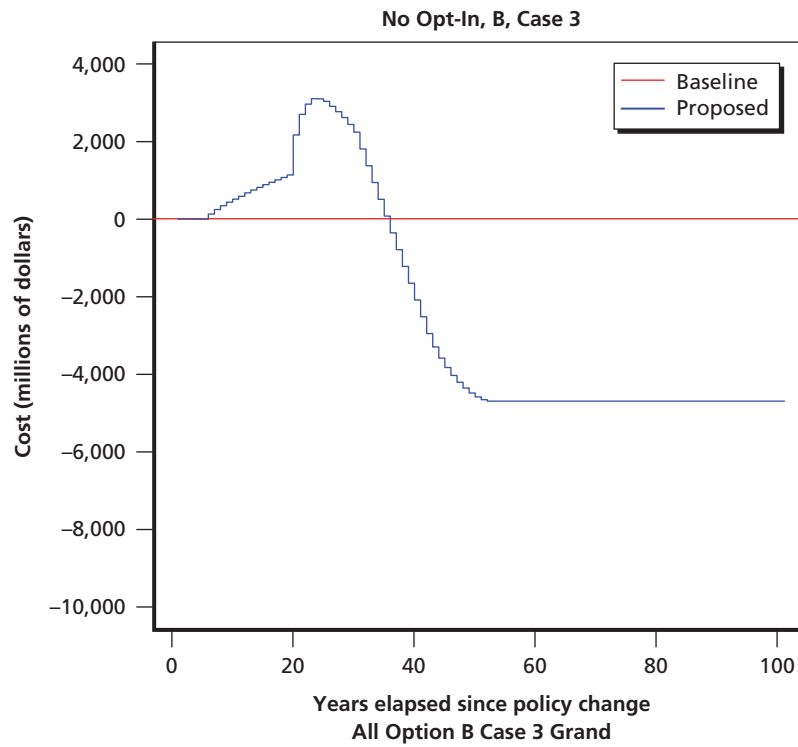


Figure 6.10d
Change in Treasury Outlays for AC Personnel for Option B, Case 5,
in the Transition Phase with Grandfathered Members and No Opt-In
Feature Versus with Opt-In Feature (\$2013)

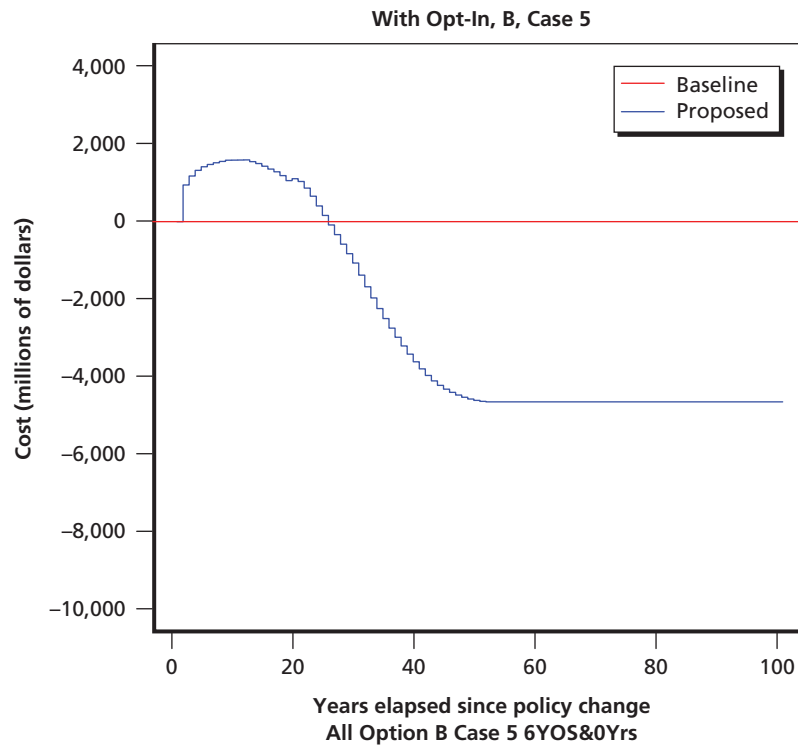
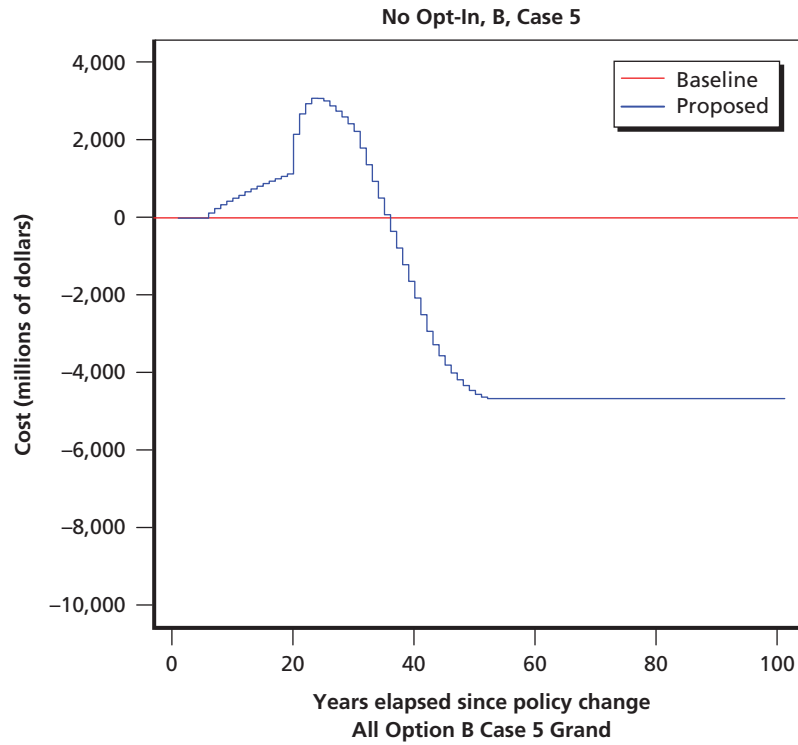


Figure 6.10e
Change in Treasury Outlays for AC Personnel for Option C, Case 2, in the
Transition Phase with Grandfathered Members and No Opt-In Feature
Versus with Opt-In Feature (\$2013)

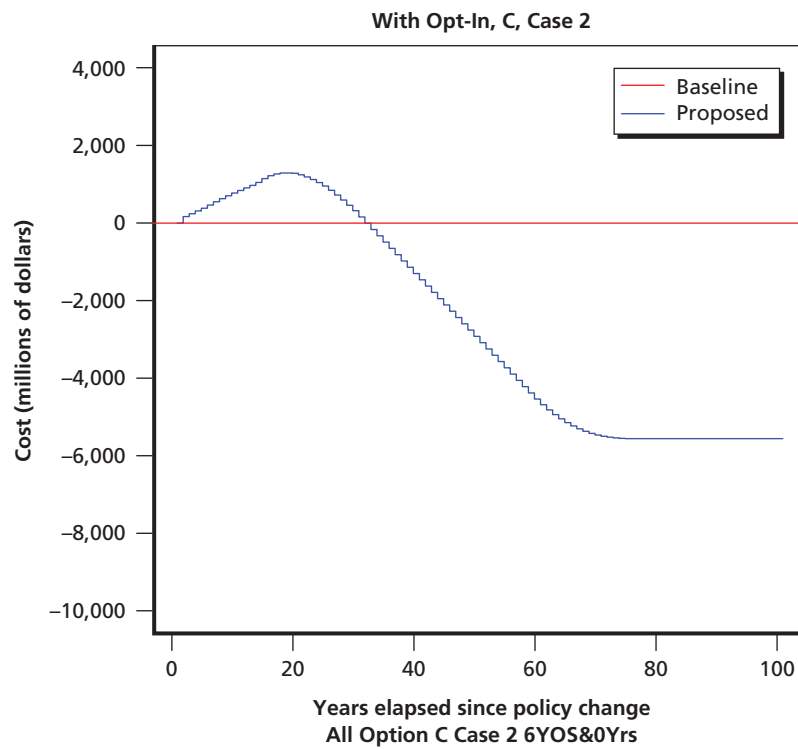
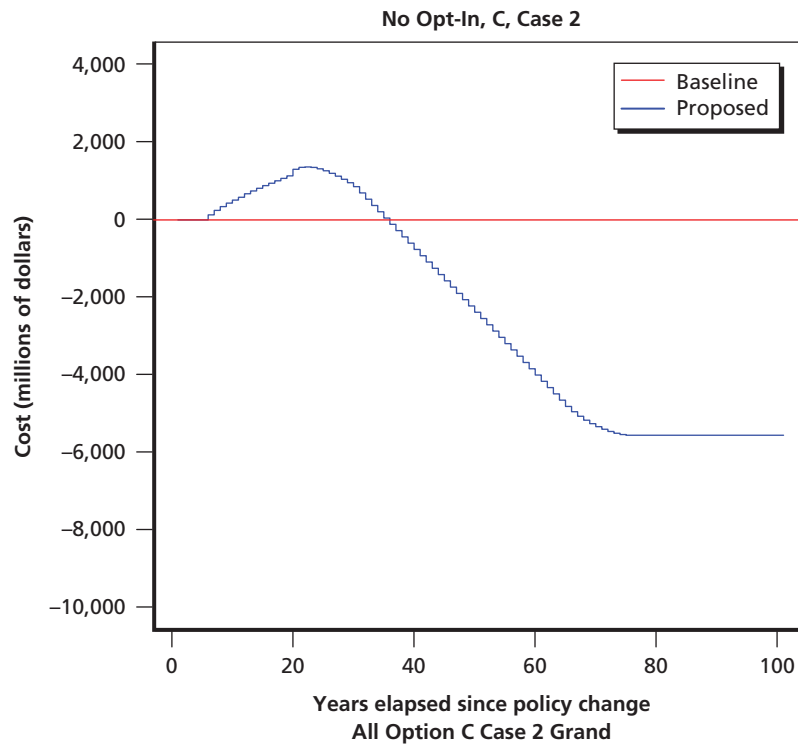


Figure 6.10f
Change in Treasury Outlays for AC Personnel for Option C, Case 4,
in the Transition Phase with Grandfathered Members and No Opt-In
Feature Versus with Opt-In Feature (\$2013)

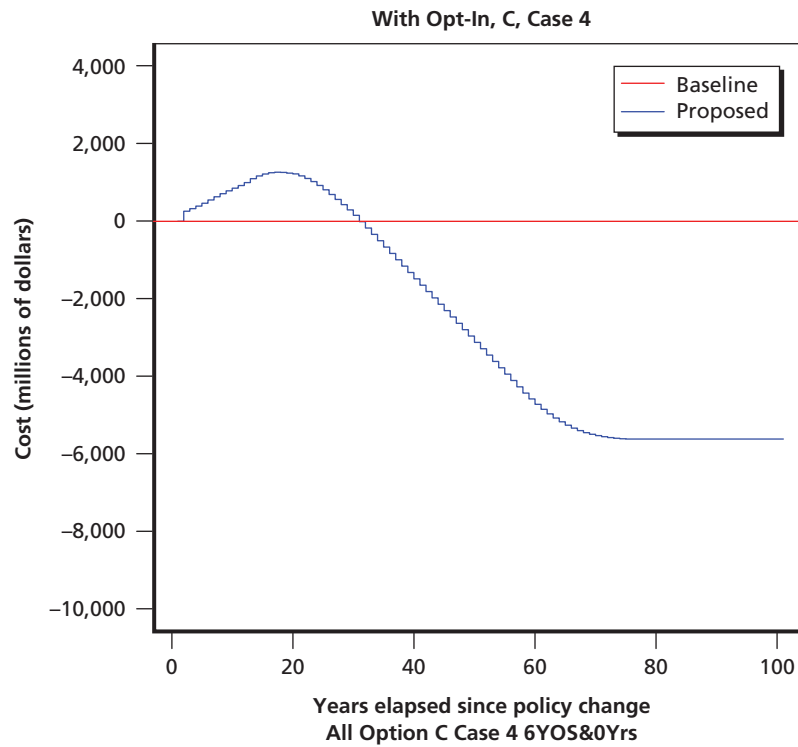
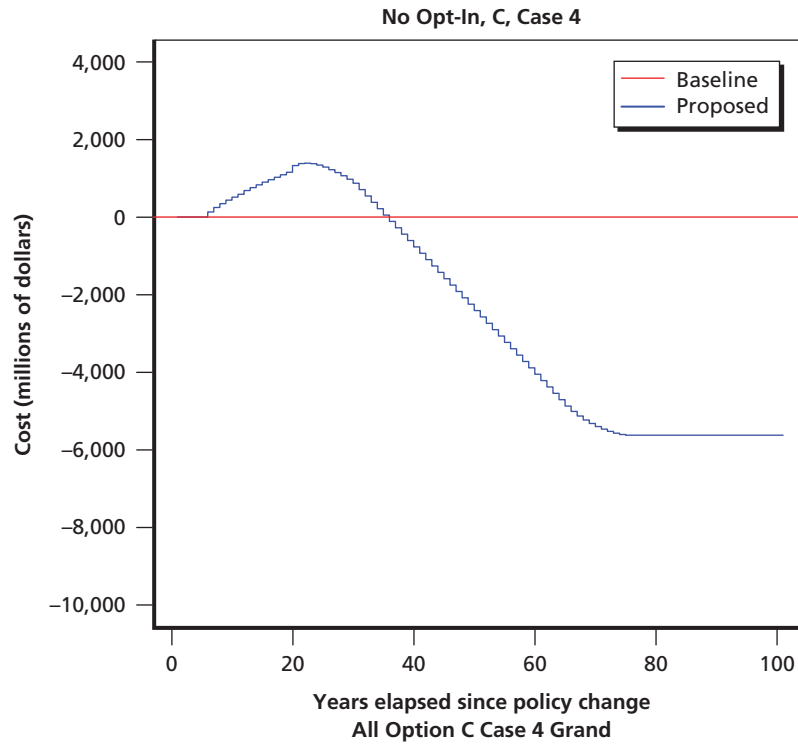


Figure 6.10g
Change in Treasury Outlays for AC Personnel for Option D, Case 2,
in the Transition Phase with Grandfathered Members and No Opt-In
Feature Versus with Opt-In Feature (\$2013)

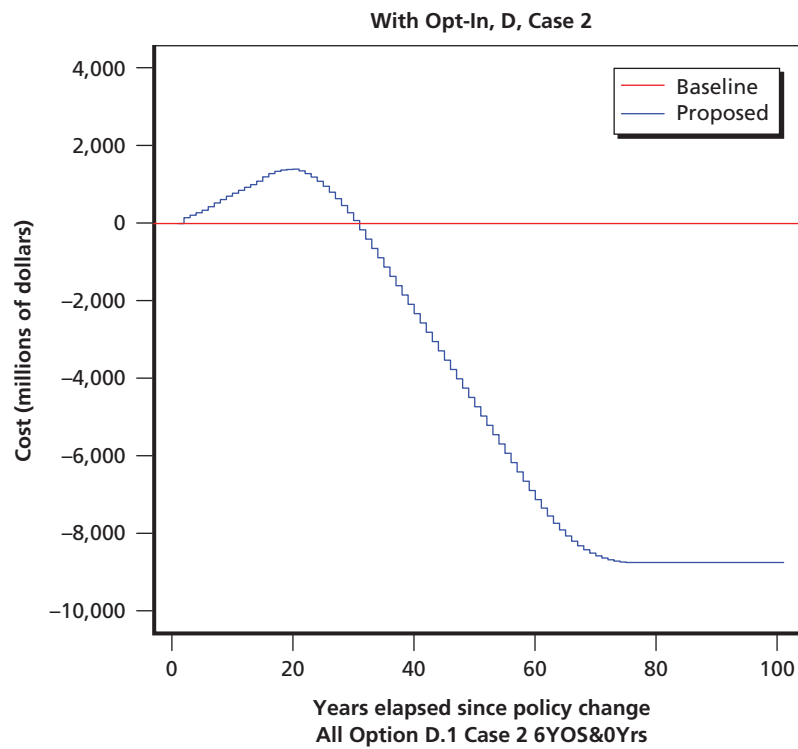
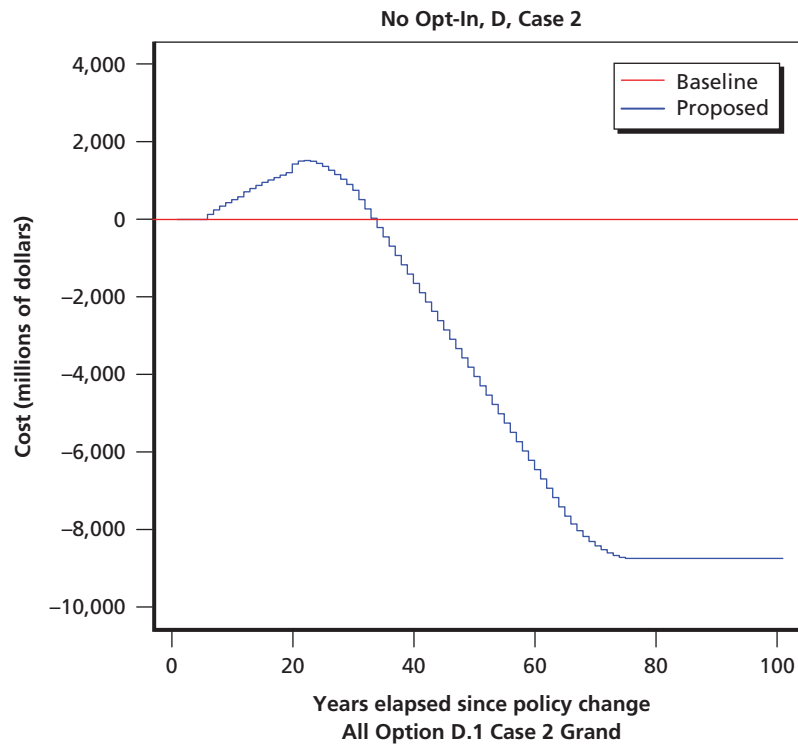
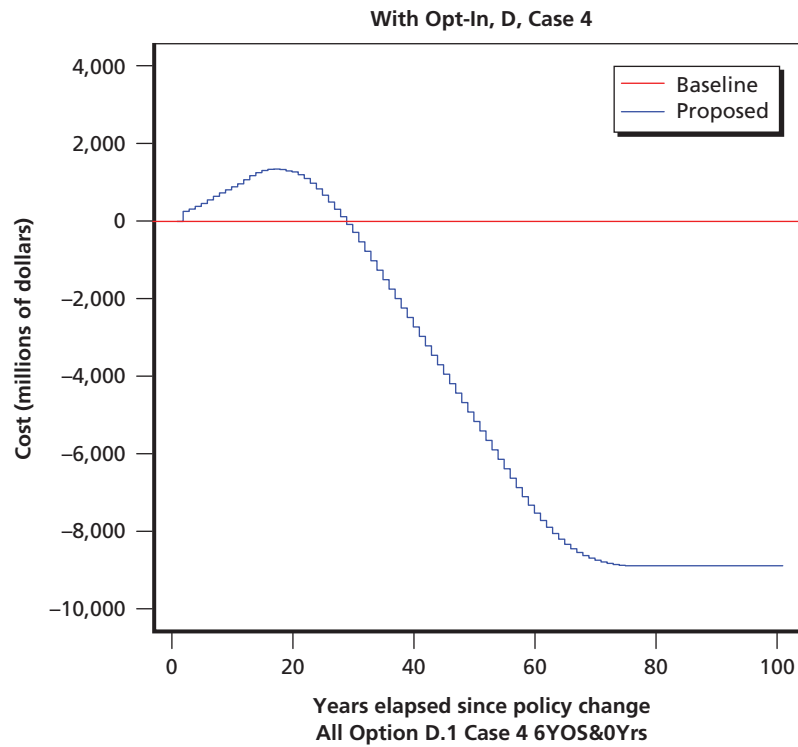
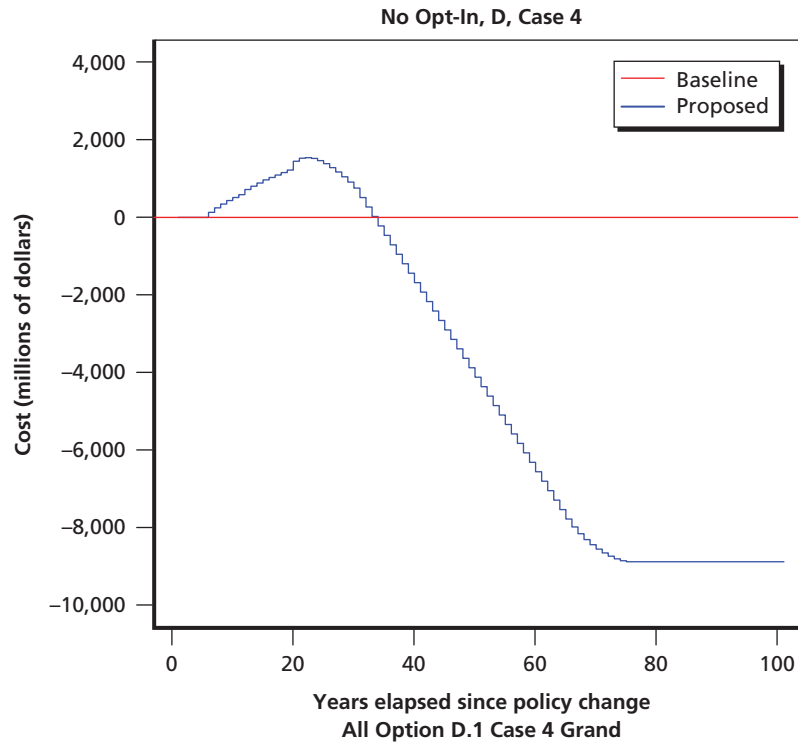


Figure 6.10h
Change in Treasury Outlays for AC Personnel for Option D, Case 4, in the
Transition Phase with Grandfathered Members and No Opt-In Feature
Versus with Opt-In Feature (\$2013)



members have higher pay than new entrants—and therefore higher TSP contributions—and have more years of service and so will qualify sooner for continuation pay and transition pay than new entrants. For example, under Option A, case 3, outlays begin in the sixth year after the policy is enacted, as the Treasury makes TSP outlays, when there is no opt-in feature, but begin in the second year when there is an opt-in feature. Initial outlays increase by \$132 million in that sixth year without the opt-in feature, but increase by \$1.4 billion in that second year with opt-in. By the same token, the decline in outlays also occurs earlier when currently serving members can opt in, because they reach retirement sooner than new entrants. Outlays for the new defined-benefit plan are lower than for the current system, so when more current service members opt in to the new system, the drop in outlays associated with the new system occurs earlier. For example, under Option A, case 3, the drop in outlays occurs in the 34th year after the policy change when there is no opt-in feature, but occurs in the 21st year when there is an opt-in feature.

A similar pattern is observed for all of the alternatives, though somewhat less so for Options C and D than for A and B. The reason is that opt-in rates tend to be higher under Options A and B than under C and D. Thus, under Option C, case 2, for example, outlays begin to increase in year 6 without the opt-in feature but in year 2 with the opt-in feature. The increase in the initial year of outlays is \$131 million without opt-in but is \$706 million with opt-in.

Transition Period for the Reserve Component

We provided a qualitative analysis of the likely effects of different implementation strategies for the reserve components during the transition period, drawing on what we learned from the DRM analysis for the active component. We first briefly recall the RC steady-state results, summarized in Chapter Five, and then discuss the likely effects on RC participation, costs, and outlays when RC members are grandfathered without an opt-in choice and when they do have an opt-in choice.

Recall the steady-state results when vested RC members can begin claiming immediate retirement benefits (Options A and B, cases 3 and 5) versus when they must wait until old age (Options C and D, cases 2 and 4). When they can claim immediate benefits, the RC experience mix changes with greater participation predicted among those with fewer than 20 YOS and less participation among those with more than 20 YOS. RC continuation pay generally does not offset this effect, though it can help offset changes in overall RC strength levels. When RC members must wait until old age, we find that the RC experience mix can be sustained through appropriate use of additional continuation pay for RC members.

Our steady-state analysis also found that the RMC pay approach to current RC compensation (cases 4 and 5) requires a more comprehensive use of continuation pay. That is, unlike a continuation pay targeted to YOS 12, for example, the continuation pay under the RMC pay approach would need to be received by all RC members, and the amounts would generally be larger. Another steady-state result was that changes in participation among non-prior service are slight under the eight different alternatives. The changes are slight because retirement benefits for RC members are quite small for non-prior service members relative to prior-service members. A final key result was that RC costs are a small fraction of overall costs, so that most

of the cost savings associated with moving to any of the eight alternatives come from changes in the cost of the AC, not the RC.

With these results in mind, we can consider what might be the likely effects for the RC in the transition phase. It is important to recall that we have not extended the transition modeling in the DRM to the reserves to produce estimates of the retention, cost, and outlay effects for the RC. Our observations for the RC are based on the steady-state results for the RC and the patterns, direction, and magnitude of the transition effects for the AC. Thus, our conclusions about the RC are informed observations, but also subject to uncertainty.

Consider first RC participation. We expect RC participation to remain unchanged in the transition for Options C and D (Concept II). These alternatives offer no immediate annuity, and we found that RC continuation pay can sustain the RC force in the steady state. As with the AC, when AC retention was unchanged during the transition period, RC participation of members under the new system will be the same as participation under the current system.

However, we expect RC participation to increase for some years in the transition for Options A and B (Concept I), which provide an immediate annuity. In the steady state, we find an increase in pre-20-YOS participation and a decrease in post-20-YOS participation, and continuation pay does not restore the experience mix. In the transition period, there will be some years when RC strength increases, as personnel in the new system are in their mid-career (pre-20 YOS) while personnel under the current system are more senior (post-20 YOS). Whether the RC will be permitted to increase in strength is an open question. To the extent that RC strength is not permitted to increase, the services may take actions, such as limit promotion opportunities or tighten up-or-out rules for RC members. Eventually, senior post-20-YOS personnel will be under the new system (as those under the system age), and end strength will fall. The timing of these effects will depend on the transition strategy. When RC members can opt in to the new system, these effects will likely occur sooner in the transition phase. When they cannot opt in to the new system, it will take 40 years for the full effects to occur.

With respect to the pattern of cost savings, we expect the pattern of RC cost savings in the transition to be similar to the pattern for the AC. Costs will drop due to the RC accrual charge being lower under the eight reforms than under the current system. The timing of the drop will depend on the implementation strategy. The cost savings will be realized sooner for the RC if current RC members are permitted to opt in to the new system. That said, the cost savings under Options A and B will be offset to some extent in some years by the larger RC force size that occurs when members are provided an immediate annuity, assuming the RC force is permitted to increase. For all of the alternatives, during the transition phase we expect the cost savings for the RC to be dominated by the cost savings for the AC.

Like outlays for the AC, outlays on behalf of RC members will likely increase initially during the transition period because of TSP contributions and continuation pay costs. As mentioned, continuation pay costs are greater under the RMC approach (cases 4 and 5) and paid out to all RC members, so outlays associated with continuation pay will occur immediately under the RMC approach. RC outlays will increase under Options A and B as a result of the immediate annuity offered to RC members. The timing of the increase will depend on the implementation strategy, i.e., whether currently serving members can opt in to the new plan. If RC members can opt in, the timing of outlays will depend on the extent to which RC members, especially those with greater YOS, make the opt-in choice. If a high fraction of more senior RC members opt in, then the increase in outlays associated with offering an immediate annuity will occur sooner.

On the other hand, RC outlays will begin to drop when members are between ages 60 and 65 under alternative A, since the full annuity does not begin until age 65, and will begin to drop when members are between ages 60 and 62 under alternative B. For Options C and D, RC outlays will eventually fall due to the reduced annuity from the defined-benefit plan under these alternatives. The timing of the drop for these alternatives will depend on whether RC members will be given the choice to opt in to the new system. Under grandfathering with no opt-in, it will take 40 years under Options C and D before a 20-year-old entrant will reach age 60 and begin claiming a smaller defined-benefit annuity. With an opt-in feature, it will take fewer years.

Summary

Policymakers care about the transition period as well as the steady-state effects of retirement reform in part because of the budget cycle's focus on near-term costs and outlays and, in part, because different implementation strategies can affect the time pattern of the effects of reform. The statute that created the Military Compensation and Retirement Modernization Commission opened the door for allowing currently serving members to opt in to any adopted reform. RAND extended the DRM to consider the retention, cost, and outlay effects for the AC during the transition period under implementation strategies that include an opt-in feature and those that do not.

We find that costs to the government (and to DoD) fall under each of the eight alternatives considered, regardless of implementation strategy. Also each alternative includes additional elements of compensation including continuation pay, transition pay, and a TSP; each also yields a lower retirement accrual charge or NCP associated with the defined-benefit element of the alternative. The lower cost associated with the lower NCP more than offsets the higher costs associated with the additional elements.

The decrease in costs occurs sooner if current members are permitted to opt in to the new system. We find that about 40–50 percent of the ultimate cost savings of each alternative occurs in the first year if members can opt in, but only about 15 percent if they cannot. The more members opt in to the new system, the faster the cost savings are realized. We find that junior members are more likely to opt in than senior members and that opt-in rates are generally higher under Concept I than Concept II, though there is considerable variation in opt-in rates across services and between enlisted personnel and officers.

We also consider changes in Treasury outlays. We find that outlays initially increase under each alternative because of the additional elements of compensation, but eventually decrease because of the less generous defined-benefit plan under each alternative. This time pattern differs from the time pattern of cost, where we find that costs decrease. We find that the initial increase in outlays is greater under Concept I than II because Concept I provides larger continuation and transition pays. On the other hand, the drop in outlays occurs more rapidly under Concept I than II because Concept I provides a partial annuity in the second-career while Concept II provides a full annuity. When current members are permitted to opt in to the new system, the increase in outlays occurs sooner than when they cannot opt in, but so does the decrease in outlays. That is, the steady-state drop in outlays occurs sooner with the opt-in feature.

In short, we find a tradeoff between cost and outlays in the near term. Costs decrease in the initial years, and the drop in costs occurs faster the more current members opt in. However, outlays increase in the initial years, and the increase is larger and occurs more rapidly the more members opt in. Thus, policymakers must weigh the advantages of initial cost decreases against higher initial outlay increases.

Reforming DoD Disability Compensation

The DoD disability compensation system provides compensation to disabled service members whose medical conditions are found to make them unable to discharge their military duties. Changes to military compensation, including military retirement benefits, can affect the amount of disability compensation received by service members, and therefore the consequences for DoD disability compensation must be considered in conjunction with possible changes to military compensation. Further, even without changes in retirement benefits or basic pay, there are reasons to consider changes to DoD disability compensation. The determination of disability compensation—quite apart from the disability rating itself—is complex and difficult to understand. Also, the rationale for the current DoD disability compensation system appears mixed. Disability retirement benefits depend on an approach that considers both length of service and the extent of disability, but the benefit is offset by the amount of VA disability compensation, and the extent of offset depends on whether the disability is combat-related.

The interaction between retirement reform and disability compensation, along with the possible reform of disability compensation even if the retirement system is not changed, means that different perspectives are necessary. One perspective considers how disability compensation reform would affect the eligibility for and level of disability compensation relative to the current disability compensation system. A second perspective considers disability compensation reform with concurrent retirement benefit reform, here in the form of Options A, B, C, and D.

We begin the chapter with a description of the current DoD disability compensation system. Because the net DoD disability compensation received by many disability retirees is the amount remaining, if any, after VA disability compensation is subtracted, we also describe VA disability compensation. Additionally, net DoD disability compensation also depends on whether the disability retiree is eligible for Concurrent Retirement Disability Pay (CRDP) or Combat-Related Special Compensation (CRSC), both of which we describe. We then discuss two possible reforms of the DoD disability compensation. One reform is a concept discussed by the DODWG but not pursued. This reform would shift the responsibility for disability compensation from DoD to the VA, with the details of doing so to be determined. The other reform, which the DODWG did pursue, specifies eligibility conditions and bases the amount of DoD disability compensation on the years-of-service retirement benefit formula, with a floor of 12 YOS. This reform was included as part of the retirement design concepts proposed by the DODWG. In particular, Options A, B, C, and D, while differing in their approach to retirement benefits, all include this disability compensation reform as well as a Survivor Benefit Plan reform.

In this chapter we present tables showing the net DoD disability benefit for illustrative cases for junior, mid-career, and senior enlisted personnel and officers who have a disability retirement. We compute the net DoD disability benefit under the proposed disability reform using retirement benefit formulas of 0.025 and 0.020. These correspond to the multipliers in Option A, and in B and D, respectively. Computations were not done for a retirement multiplier of 0.0175 because it is close enough to 0.020 to give similar though somewhat smaller net DoD disability benefits. The computations are done separately without and with CRSC. A main finding is that in most cases the disability compensation reform increases the net DoD disability benefit received by disability retirees.

Although the tables contain detailed information about how net DoD disability compensation would change, they do not offer a standard against which to judge the change. Given that disabled veterans can receive both DoD and VA disability compensation, as we discuss in this chapter, the standard for DoD disability compensation should reflect the broader objectives of veterans' disability compensation, yet reflect the unique function of DoD disability compensation. There are a number of possible broad objectives for disability compensation for military veterans. These include providing compensation to individuals for the loss of a military career resulting from their disability, providing compensation for the loss of their civilian earnings capacity as a result of their disability, recognizing valorous service to the nation, and providing compensation for diminished quality of life and ability to participate in nonwork activities. Given that DoD disability compensation is paid only to those unfit for service, as we discuss in detail in this chapter, arguably the unique role of DoD disability benefits is to compensate for the loss of a military career, while the role of VA benefits is to compensate for the other losses.

Given these observations, we propose using the value of the loss of the military career due to a career-ending disability as a standard. The DRM estimates this value at each year of service in the AC. The chapter compares this loss with the average value of net DoD disability compensation under the current system without and with CRSC, for enlisted and for officers, and also does so for the alternatives listed above. The chief finding is that the proposed disability compensation reform does best overall in compensating for the lost military career.

The chapter presents estimates prepared by the DoD Actuary of the incremental cost of shifting to the proposed system. The cost estimates are done for Options A, B, C, and D and, indirectly, for the current retirement benefit system because it shares the same multiplier as Option A's old-age multiplier.

The chapter also considers two related issues. First, in its early deliberations, the DODWG asked whether involuntary separation pay (ISP) would be a viable alternative to the disability benefit reform proposal. We compare the payout under ISP to the value of a lost career, concluding that ISP does not perform as well as the proposal. Second, we consider the civilian earnings loss of veterans with a DoD disability retirement or severance. Although VA disability compensation replaces the civilian earnings loss of disabled veterans on average, we ask whether it does so for DoD disability retirees or severances.¹ Using results from Buddin and

¹ In their report to the Veterans Disability Benefits Commission, Christensen et al. (2007, p. 106) found that VA compensation generally makes up for average lifetime earned income losses; however, there are exceptions. The parity of VA compensation to earned income losses—as measured by an earnings ratio—depends on rating level, IU [individual unemployment] status, and age at first entry into the system. Generally there is parity at the average age at first entry for all rating levels and IU status. However, if a veteran first enters the system later in life, the VA compensation is above parity because

Han (2012) and other data, we present estimates of the loss in civilian earnings for these groups in comparison to other disabled veterans, and the extent to which VA disability compensation covers the loss. We find that DoD disability retirees and disability severances have an uncompensated loss of several thousand dollars or more per year. We note that the higher benefits provided by the disability benefit reform proposal would in effect help to offset this loss, as would a revision of the VA disability compensation schedule.

The Current DoD Disability Compensation System

When a service member has a medical condition that does not appear to meet medical retention standards, the member is referred to the Integrated Disability Evaluation System (IDES) for evaluation. IDES includes a Medical Evaluation Board (MEB), a Physical Evaluation Board (PEB), and adjuncts to the MEB for appeal and to the PEB for informal appeal, rebuttal, and formal appeal. The physician examination used for the MEB evaluation is actually conducted by the VA, though the results are relevant to whether the member meets retention standards. The MEB reviews all medical conditions, identifies members whose conditions do not meet medical retention standards, and refers these cases to the PEB. The PEB includes an Informal Physical Evaluation Board (IPEB), which makes an initial decision on the member's fitness to be retained in service, and a Formal Physical Evaluation Board (FPEB), which acts if the member chooses to rebut the decision of the IPEB. The PEB determines which specific conditions make the member unfit for duty, and the VA determines the disability rating for each medical condition. The PEB calculates the DoD disability rating by combining the individual ratings for all medical conditions determined to be unfitting. Using the same ratings, the VA calculates a combined VA disability rating for *all* service-related medical conditions, not just those for conditions determined to be unfit for service. The service member is counseled on all findings at the MEB and PEB stages, and elects to concur or not concur with the PEB fit/unfit decision and VA ratings. Among cases completed in 2011, the average IDES processing time was 394 days for active forces and 420 days for National Guard/Reserve forces (GAO, 2012).

The ratings done by the VA are used in determining VA and DoD disability compensation, respectively. Broadly speaking, VA disability compensation is subtracted from DoD disability compensation, leaving net DoD disability compensation, as discussed next.

VA Disability Compensation

VA disability compensation (VADC) is intended to replace the decrease in civilian earnings resulting from the service members' disability, on average. VADC depends on the VA disability rating and does not depend on years of service or rank. Also, VADC depends on family structure, where the categories of family structure are veterans with no dependents, veterans without children and alone or with a spouse and/or dependent parents, and veterans with children and with a spouse and/or dependent parents. VADC is not taxed.

The VADC schedule elements consist of a payment to the veteran alone plus increments depending on family structure (Table 7.1). For example, VADC for a veteran with a spouse and two children under age 18, and with a VA disability rating of 50 percent, is (\$797 + \$82 +

most of the prime working years are past. But if a veteran enters early in life, VA compensation does not provide parity for the most severely disabled (IU and 100 percent).

Table 7.1
Elements of the VA Disability Compensation Schedule for 2013

	VA Disability Rating							
	30%	40%	50%	60%	70%	80%	90%	100%
Veteran alone	\$389	\$560	\$797	\$1,009	\$1,272	\$1,478	\$1,661	\$2,769
Without children								
Parent	\$37	\$49	\$62	\$74	\$86	\$99	\$111	\$124
Spouse	\$46	\$62	\$77	\$93	\$108	\$124	\$139	\$155
With children								
Parent	\$37	\$49	\$62	\$74	\$86	\$99	\$111	\$124
Spouse	\$49	\$66	\$82	\$98	\$115	\$131	\$148	\$164
Child	\$31	\$41	\$52	\$62	\$72	\$83	\$93	\$104
Each additional child <18 years	\$23	\$31	\$39	\$46	\$54	\$62	\$70	\$78
Each additional child >18 years ^a	\$75	\$100	\$126	\$151	\$176	\$201	\$226	\$252

NOTE: Veterans with a 10 percent rating receive \$129 and with a 20 percent rating receive \$255, with or without dependents.

^a The child must be in school.

\$52 + \$39 =) \$970 per month. For this veteran, VADC at ratings of 30 percent, 70 percent, and 100 percent ratings is \$492, \$1,513, and \$3,115. To offer a broader statement about VADC, it is higher for more dependents and, given family structure, it increases linearly as the VA rating increases from 30 percent to 90 percent and jumps up at 100 percent.²

DoD Disability Severance

DoD disability compensation is paid as either severance pay or ongoing compensation. Severance pay is given to those with a DoD disability rating of less than 30 percent and with less than 20 YOS. The formula for severance pay is two times years of service times current monthly basic pay, with a floor of 6 YOS. At 6 YOS, severance pay equals one year of basic pay. It is two years of basic pay at 12 YOS and three years of basic pay at 18 YOS. If a member receives disability severance and is eligible to receive VADC, VADC payments will be decreased by the disability percentage related to the DoD disqualifying condition(s) until the DoD severance has been “paid back.” For example, an E-5 with 12 YOS and a DoD rating of 20 percent would receive severance in 2013 of $(2 \times 12 \times \$3,046 =) \$73,104$. However, VADC would be decreased by the rating percentage of the condition(s) making the member unfit, in this case, 20 percent. If, as above, the E-5 had a spouse and two children under age 18 and an overall VA rating of 50 percent, VADC would now be based on a rating of 30 percent. This would continue until the VA recouped the severance payment. However, if the disqualifying disability occurred in the line of duty in a combat zone or during performance of combat-related operations, there would be no VA deduction.

² Veterans with specific disabilities, such as the loss of a limb or eyesight, or with other circumstances, such as need for aid and attendance, are eligible for additional Special Monthly Compensation. We have not included these extra payments in the tables in this chapter.

DoD Disability Retirement

Ordinary

Members found unfit with a DoD disability rating of 30 percent or more receive a disability retirement benefit. The disability retirement benefit (GRP) is the larger of the years-of-service retirement benefit (ARP) and the DoD rating-based benefit (DRP).³ Under the current retirement benefit system, ARP equals 0.025 times years of service times 36-month average basic pay, with a floor of 12 YOS. DRP equals DoD disability rating times basic pay, with a rating ceiling of 75 percent. The floor of 12 YOS ensures that junior members receive a minimum disability benefit. The ceiling of 75 percent means that either approach gives the same benefit at 30 YOS. GRP is usually taxable but is not taxed if the PEB determines that the disability is combat-related. Also, concurrent receipt of GRP and VADC is not permitted: VADC is deducted from GRP, and this deduction is called an offset. Thus, the net DoD disability retirement benefit assuming it is taxable is $(1 - t)(GRP - VADC)$, where t denotes the individual's tax rate.

DoD Disability Retirement Under Concurrent Retirement and Disability Pay

Two programs have emerged to offset all or part of the VADC offset to GRP. These programs are CRDP and CRSC. CRDP allows concurrent receipt of retired pay (ARP) and VADC for regular service members who retire with 20 or more YOS and have a VA disability rating of 50 percent or more. Reserve retirees must have 20 qualifying YOS, a VA rating of 50 percent or more, and have reached the retirement age of 60 (or somewhat less, depending on how much the reservist has been deployed). Veterans are automatically enrolled in CRDP and do not need to apply.

Two cases help to illustrate CRDP; the retiree also separately receives VADC from the VA in both cases. In the first case, a disabled retiree's years-of-service retirement pay is greater than rating-based compensation ($ARP > DRP$). In this case CRDP unambiguously increases net DoD disability retirement pay, which is $(1 - t)(ARP - VADC)$ without CRDP and $(1 - t)ARP$ with CRDP. In the second case, rating-based compensation exceeds years-of-service retired pay: $DRP > ARP$. In this case, net DoD compensation is $(1 - t)(DRP - VADC)$ without CRDP and $(1 - t)ARP$ with CRDP. The potential gain from CRDP in this case is $(1 - t)ARP - [(1 - t)(DRP - VADC)]$, which rearranges to $(1 - t)[VADC - (DRP - ARP)]$. The member now receives VADC, but the difference between the disability rating-based benefit and the retirement benefit is deducted. This deduction decreases the gain from shifting to CRDP. DoD handles these computations at the time the benefit begins, and the member's benefit amount includes whatever incremental benefit is due under CRDP.

DoD Disability Retirement Under Combat-Related Special Compensation

CRSC allows concurrent receipt for service members eligible to receive a DoD retirement benefit—including those with fewer than 20 YOS but with a disability retirement, as well as those with 20 or more years. The member must have a VA disability rating of at least 10 percent and be able to demonstrate that the VA disability rating is attributable at least in part to a combat-related injury. The CRSC benefit is not taxable, but the service member must apply for it. Subject to certain limits, the CRSC benefit equals the amount of VADC that is combat-

³ The acronyms GRP and ARP are used here because they are in common use among compensation experts in the military. We have added the acronym DRP, which has a parallel form to the other two. GRP represents "greater retired pay," i.e., the maximum of ARP and DRP.

related: VADC-CR. Because VADC-CR is based on a subset of the conditions in determining the overall VA rating, VADC-CR cannot exceed VADC. Also, “the CRSC benefit amount may not exceed the total amount that is offset from *military retired pay* due to receipt of VA disability compensation, regardless of combat-relatedness.”⁴ This means the highest CRSC benefit an individual can receive equals the individual’s years-of-service retirement benefit, ARP. CRSC is computed as follows: If $VADC-CR \geq GRP$, then $CRSC = ARP$, but if $VADC-CR < GRP$, then $CRSC = VADC-CR - (GRP - ARP)$. If the latter formula gives a negative value, then the CRSC benefit is set to zero.⁵

Given the CRSC benefit, the full net DoD disability benefit under CRSC is the sum of the net DoD disability benefit without CRSC plus the CRSC benefit. For example, if $GRP = ARP$ and the initial benefit is positive ($GRP - VADC > 0$), and if most of the VA disability rating is combat-related, then VADC-CR is nearly as large as VADC, and the CRSC benefit is VADC-CR with nothing subtracted (since $GRP - ARP = 0$). In contrast, if the DoD disability rating is high and there are relatively few years of service, the term $(GRP - ARP)$ is large and the difference $(VADC-CR - (GRP - ARP))$ could be small, in which case the CRSC benefit is small and adds little to the net DoD disability benefit. Alternatively, suppose $GRP = ARP$ and the VA disability rating is high, such that $VADC > GRP$. Then the initial net DoD disability benefit is zero (because VADC fully offsets the DoD disability benefit), but the individual receives the full CRSC benefit, VADC-CR.

In all cases, the individual also receives disability compensation from the VA benefit. The total disability compensation from DoD and the VA is the net DoD disability benefit, inclusive of CRSC if applicable, plus the VA benefit, VADC.⁶

CRSC and CRDP overlap to some extent. Both are available to disability retirees with 20 or more YOS (although CRSC is also available to disability retirees with less than 20 YOS), and to be eligible for both requires a VA disability rating of 50 percent or more that is at least partly combat-related. Most disability retirees meet the 50-percent condition, and many disability retirees of the past 10 years—with 20 or more YOS—may meet the combat-related condition because of service in Iraq or Afghanistan. Retirees who qualify for both CRSC and CRDP receive the larger of the two. How do the full DoD disability benefits compare for the dually eligible who participate in CRDP and CRSC? Rearranging the previous expressions gives the entries in Table 7.2.

By and large, the benefits under CRDP and CRSC are likely to be similar, assuming that the bracketed expressions in the table are small. The exact comparison depends on whether the term in brackets is positive, negative, or zero, and on the size of the $t(DRP - ARP)$ term. If the benefits were about the same size, other factors might enter into the choice between them. For instance, CRDP is a restoration of retirement pay, which is subject to garnishment by an ex-spouse should the retiree divorce, while CRSC is not.

⁴ DoD, Office of the Under Secretary of Defense for Personnel and Readiness, 2008.

⁵ After this approach was established, it was realized that VADC-CR could be less than GRP but greater than ARP. As a result, taking away $GRP - ARP$ is an over-deduction, and the deduction should be $GRP - VADC-CR$, which is the correct amount in excess of compensation for combat-related disability. The over-deduction is referred to as the notch problem, and DoD has proposed changes to correct it.

⁶ For example, suppose $GRP = ARP$ and $GRP > VADC$. Then the DoD plus VA benefit is $[(1 - t)(GRP - VADC) + VADC-CR] + VADC$.

Table 7.2
Full DoD Disability Benefit Formulas for Those Dually Eligible for CRDP and CRSC

GRP Condition	CRDP	CRSC	
		GRP ≥ VADC-CR	VADC-CR > GRP
ARP ≥ DRP	$(1 - t) \text{ ARP}$	$(1 - t) \text{ ARP} - [(1 - t) \text{ VADC} - \text{VADC-CR}]$	$(1 - t) \text{ ARP} - [(1 - t) \text{ VADC} - \text{ARP}]$
DRP > ARP	$(1 - t) \text{ ARP}$	$(1 - t) \text{ ARP} - [(1 - t) \text{ VADC} - \text{VADC-CR}] - t(\text{DRP} - \text{ARP})$	$(1 - t) \text{ ARP} - [(1 - t) \text{ VADC} - \text{DRP}] - t(\text{DRP} - \text{ARP})$

Possible DoD Disability Compensation Reforms

The DODWG considered two approaches to reform. One approach, a concept not fleshed out in detail, would limit DoD’s responsibility to determining a member’s fitness to serve. The other reform would expand eligibility for disability retirement, simplify computation of the DoD disability retirement benefit, and allow concurrent receipt. This approach was incorporated into the reform options studied by the DODWG.

A Disability Reform Concept: DoD Determines Only Fitness to Serve

For members separated from the military for unfitness, the VA would be the sole provider of disability compensation. During the period from the finding of unfitness to separation, the individual would receive a transition benefit paid by the VA and DoD, with both the benefit amount and VA/DoD cost sharing to be determined. A member with 20 or more YOS would receive a DoD retirement benefit without any offset, and the VA would pay all disability-related compensation. Disability compensation would start at the initial VA disability rating, and the rating would be periodically reassessed. Disability compensation would be adjusted accordingly.

This approach eliminates the Temporary Disability Retirement List (TDRL). Currently, an unfit member is separated from the military and placed on the TDRL if the disqualifying condition has not stabilized. The individual may be on TDRL for up to five years, must have a physical examination at least every 18 months, and is assigned a DoD disability rating with a minimum of 50 percent. When the condition has stabilized, the member is usually placed on the Permanent Disability Retirement List (PDRL) and receives a final DoD disability rating; rarely, if the condition has improved, the member may be given a severance payment or found fit and returned to service (President’s Commission on Care for America’s Returning Wounded Warriors [aka the Dole-Shalala Commission], 2007). In contrast, the concept would place the member on PDRL, and the separated member would no longer be at risk of being returned to service if later found fit for duty.

DoD’s responsibility would be limited to determining a member’s fitness to serve, and there would be no need for a DoD disability rating. The fitness decision would, as now, use information provided by the medical examination done for the MEB but would be limited to an “up or down” decision, without calculating the DoD disability rating for the condition(s) leading to unfitness.

The possible advantages of the concept include eliminating the resources needed by DoD to pay disability compensation and reevaluate cases on TDRL. Further, given that DoD’s primary mission is not to address veterans’ needs, giving the VA sole responsibility for veter-

ans' disability compensation better aligns the disability compensation program with agency missions.

Several challenges could impede progress toward transforming the concept into a specific proposal. If the VA had full authority to pay disability compensation, DoD could not be certain its objectives for disability compensation would be met. Today, VA disability compensation compensates for lost earnings on average. It is not meant to recognize the member's loss from a prematurely ended military career, to differentiate compensation based on whether the disability was combat-related as CRDP and CRSC do now, or to address other DoD objectives for recognizing the service and sacrifice of disabled members. The path to achieving a new VA disability compensation schedule would probably have to accommodate DoD objectives in some way.

The VA might not agree to such changes without considerable internal debate. Opening the VA disability compensation schedule to revision would probably also open it to reform. The VA disability ratings schedule is based on the relationship between earnings losses and specific disabilities, such as the "loss of a limb or the loss of hearing," as it was known in the 1940s. Despite significant changes in medicine and the evolution of jobs to be less physically demanding and more knowledge-oriented, the schedule has had only minor revisions. Also, disability compensation based on average earnings loss does not address differential loss by age, education, and gender for any given disability rating. Further, behavioral (mental health) disability has become a major category of disability, and the Veterans Disability Benefits Commission (Christensen et al., 2007) found that veterans with these disabilities were inadequately compensated for their earnings losses. The President's Commission on Care for America's Returning Wounded Warriors, also known as the Dole-Shalala Commission (2007), made two additional points. The VA schedule is not designed to compensate for quality-of-life losses, such as "disfigurement, inability to participate in favorite activities, and social problems." Also, the commission argued that the incentives provided by disability compensation should encourage disabled veterans to regain as much functionality as possible and promote full engagement in work and nonwork activities, but a fixed monthly disability payment does not provide these incentives. Responding to these criticisms, the VA is undertaking a revision of its disability ratings schedule.

Eliminating the DoD disability rating and using only the VA disability rating would affect a member's benefits. This, of course, follows if the VA benefit schedule is changed, but it also follows from the fact that there is no simple mapping between DoD and VA disability ratings. VA ratings are higher than DoD ratings; the VA rating is based on all service-related disabilities, and the DoD rating is based on the subset of conditions that disqualify a member for retention. Given the VA rating, the DoD rating can be any rating at or below it. So, at a given VA rating there is a range of net DoD disability compensation. As a result, no single dollar amount, if added to VADC at that VA rating to adjust for the absence of DoD disability compensation under this concept, would leave members as well off as they are today. Some members would lose and some would gain. Thus, shifting from the current system, in which DoD and the VA each pay disability compensation based on different ratings and different criteria, to a system in which only the VA pays will change the distribution of benefits. This is not necessarily undesirable, but it might not accord with either DoD objectives in compensating service members for their disability or service members' expectations about fair compensation for their disability.

A Specific DoD Disability Compensation Reform Proposal

The DODWG also considered a specific proposal. As mentioned, this proposal was incorporated into its two design concepts, as discussed in Chapter Four, though it left open the door for the approach just discussed.

The proposal would reform DoD disability compensation in two main ways: It would base the disability retirement benefit on the retirement benefit formula with a floor of 12 YOS, thereby eliminating the benefit formula based on the DoD rating (denoted DRP above), and it would eliminate the VADC offset for disability retirees. Qualification for DoD disability retirement would require a 30-percent DoD disability rating *or* at least 12 YOS; the latter serves to expand eligibility. Qualified members would receive disability retirement and otherwise receive disability severance. There would be no change in the severance pay formula.⁷

The proposal would apply the DoD disability rating to determine qualification for disability retirement versus disability severance but would not use it in figuring the disability retirement benefit. In the current retirement system the retirement benefit formula is a multiplier \times YOS \times high-36 months of basic pay, and the multiplier is 0.025. The old-age multiplier would be used in retirement Options A and B, namely, 0.025 for A and 0.020 for B. The multiplier in Option C is 0.020, and in Option D it is 0.0175. The options all have a defined-contribution component that would vest immediately after permanent disability retirement or disability severance. But it would not vest immediately for disability retirees placed on TDRL.

The proposal has several advantages. It eliminates complexity in the current system. The member does not need to think about how to compute the net DoD benefit or how it depends on CRDP or CRSC. Further, the proposal requires no changes by the VA. The VA does not need to change its benefit schedule, and DoD does not need to coordinate its changes with the VA. A disadvantage is that because it eliminates the VA offset, the proposal would increase the cost of DoD disability compensation. But a higher DoD disability benefit comes closer to replacing the value of a military career ended by disability, as shown below. Also, the use of 70 percent as the minimum percentage for TDRL adds to cost, given that the current minimum percentage is 50 percent.

The benefit levels under the proposal can be compared with the levels under the current system for those who would be eligible for CRDP, CRSC, and neither:

- *CRDP*: The net DoD disability benefit under the proposal is the same as the net DoD disability benefit for those receiving a benefit under CRDP—both use the retirement benefit formula and both allow concurrent receipt. The proposal is nominally less restrictive because it does not require a VA rating of 50 percent or more for eligibility; but this makes little difference because most members with a DoD rating of 30 percent or more have a VA rating of 50 percent or more.⁸
- *CRSC*: The proposal largely supplants the benefit under CRSC, although there are exceptions. The proposal's benefit is larger unless most of the VA disability rating is combat-

⁷ As noted in Chapter Four, the proposal would replace the Temporary Disability Retirement List (TDRL) with an Interim Disability Retirement List (IDRL). A member could be placed on the IDRL if determined to have an unfitting disability that is not permanent and stable or for which a disability rating has been delayed. Members found unfit for service, but with a DoD disability rating of less than 30 percent or with fewer than 12 YOS, would receive a lump-sum disability severance payment computed as it is under the current system.

⁸ A current legislative proposal (H.R. 303) would eliminate the 50 percent requirement for CRDP.

related.⁹ Even though much of the VA disability rating could come from combat-related disabilities, often there are additional disabilities that may not be combat-related, for example, tinnitus or heart disease.

- *Neither CRDP nor CRSC*: The net DoD benefit is typically greater under the proposal than under the current system.¹⁰

Net DoD Disability Retirement Compensation Under the Disability Proposal and the Current and Alternative Retirement Benefit Systems

Actual computation of benefits is necessary to see how the various benefit formulas translate into the benefit amount a disability retiree would receive. A major difference between the current disability system and the proposal is the elimination of the VA offset. CRDP and CRSC already take steps toward eliminating the offset, but they are limited to certain populations and have certain eligibility conditions. The proposal eliminates the VADC offset universally. As a result, one expects the net DoD disability benefit to increase—but what are the specifics?

The tables presented below and in Appendix D address this question by computing the disability benefits for illustrative examples of junior, mid-career, and senior enlisted and officer personnel. The examples are (1) a single E-4 with 4 YOS, (2) a married E-5 with 10 YOS and two children under age 18, (3) a married E-7 with 22 YOS and two children, one over age 18, (4) a single O-3 with 8 YOS, (5) a married O-4 with 12 YOS and two children under age 18, and (6) a married O-6 with 24 YOS and two children, one over age 18. Here we show the E-4 and O-4 examples and Appendix D shows the remaining ones.

In the interaction between disability reform and retirement reform, the key parameter is the retirement benefit multiplier. It is used in computing the disability benefit under the current system, where the member takes the larger of the benefit based on the retirement formula and the benefit based on the DoD disability rating. In the proposed disability system, the benefit is based on the retirement formula, hence depends on the multiplier. The tables focus on the disability retirement benefit only and do not include disability severance pay, which is the same in the reform as in the current system. Also, although disability retirees with fewer than 6 YOS become immediately vested in the defined-contribution plan, the gain from this is omitted from the tables.¹¹ Members with more than 6 YOS are already vested, and their defined-contribution estate does not change.

⁹ Let $GRP = \Delta + ARP$ where $\Delta > 0$ if GRP is based on the DoD disability benefit and zero if GRP is based on the retirement formula. The net DoD disability benefit under CRSC is $(1 - t)(\Delta + ARP - VADC) + VADC - CR - \Delta$. The net DoD disability benefit under Proposal 2 is $(1 - t)ARP$. The net DoD benefit is greater under the proposal than under CRSC if $(1 - t)VADC + t\Delta > VADC - CR$. This will be true except when $VADC - CR$ is close to $VADC$, that is, when most of the VA disability rating is combat-related.

¹⁰ The net DoD benefit is $(1 - t)(GRP - VADC)$ under the current system and $(1 - t)ARP$ under the proposal. The potential gain from switching from the current system to the proposal is $(1 - t)(VADC - (GRP - ARP))$, and side calculations indicate that this is typically the case. Note that this is the same condition as for the benefit gain from switching to CRDP for those when the DoD disability rating-based benefit is greater than the retirement-formula based benefit, discussed above.

¹¹ Consider a 23-year-old E-4 with 4 YOS. Five percent of basic pay would have been contributed in YOS 2, 3, and say half of YOS 4, for a total of about \$3,150. Allowing a 4 percent real return to age 60 and a 10 percent personal discount rate, the present value of this is \$395. For a 26-year-old O-2 with 4 YOS and a 6 percent personal discount rate, the present value is \$3,255.

The net DoD disability benefit is computed for the proposed disability reform using retirement benefit multipliers of 0.025 and 0.020, which correspond to Option A and Options B and C, respectively. This computation is straightforward because of the simplicity of the proposed approach. The benefit under the proposal is a single number for each case, i.e., a single number given years of service and basic pay; the benefit is independent of both DoD and VA disability ratings. However, to compare the new benefit to the current system, it is necessary to compute the benefit under the latter, without and with CRSC.

In Tables 7.3 through 7.6, the uppermost panel contains the net DoD disability benefit under the current system and without CRSC. This is followed by a single row containing the benefit under the reform, and below it is a list of differences between the reform benefit and the current benefit. The lower portion of the table does the same but with CRSC; that is, the net DoD disability benefit under the current system includes CRSC. (The row showing the benefit under the reform, of course, does not contain CRSC; there is no VA offset, and therefore no need for CRSC to offset the offset.) The benefit computed under CRSC assumes that the combat-related portion of the VA disability rating is 20 percentage points below the overall VA disability rating. This need not be the case, but is sufficient for seeing how the net DoD disability benefit changes under the disability proposal. In all cases, the tax rate is assumed to be 20 percent, and basic pay is as of FY 2012. There are no tables for CRDP because they are likely to be similar to those for CRSC, as suggested above.

The tables support several findings. First and foremost, the disability proposal increases net DoD disability compensation in nearly all instances. For example, the net disability compensation for an E-4 with 4 YOS, a DoD rating of 40 percent, a VA rating of 60 percent, not under CRSC, and at a multiplier of 0.025, increases from \$0 to \$647. For an O-4 with 12 YOS, a DoD rating of 30 percent, and a VA rating of 50 percent, the benefit increases from \$765 to \$1,926. The benefit increase is, as expected, greater for those not under CRSC, but under CRSC the benefit increase is often substantial. Tables 7.3–7.6 also show the impact of CRSC, which, relative to no CRSC, increases the benefit among those for whom the DoD rating is low, but the VA rating, and the presumed portion related to combat, is high. However, CRSC does little for those with a high DoD disability rating and a similar VA rating.

Monetary Value of the Loss of One's Military Career

A yardstick for judging the adequacy of net DoD disability retirement compensation is the value of the loss from the premature end of a military career. For an AC member, this loss equals the expected value of staying in the AC net of the expected value of a civilian career. An AC member found unfit and discharged is no longer able to choose whether to serve in the AC or RC in future years, and taking away this choice is a form of loss. Further, the value of staying in the AC at a given point in one's career depends on both financial and nonfinancial factors; money matters, but so does intrinsic satisfaction from serving. Also, because disabled retirees would not be able to participate in the RC, the expected value of a civilian career depends solely on expected earnings as a civilian worker. We considered another possible yardstick, namely, the difference between the present value of expected future military earnings and expected future civilian earnings, but felt that our measure was both more comprehensive and more accurate, as discussed below.

Table 7.3
Net DoD Disability Retirement Compensation with 0.025 Multiplier for Proposal Amount:
E-4, 4 YOS, Single

a. No CRSC; Current Benefit (upper panel), Proposal Amount (middle), Difference (lower)

DoD Rating	VA Disability Rating							
	30%	40%	50%	60%	70%	80%	90%	100%
30%	\$206	\$70	\$0	\$0	\$0	\$0	\$0	\$0
40%		\$242	\$53	\$0	\$0	\$0	\$0	\$0
50%			\$225	\$56	\$0	\$0	\$0	\$0
60%				\$228	\$18	\$0	\$0	\$0
70%					\$190	\$26	\$0	\$0
Proposal Amount with 0.025 Multiplier: \$647								
Difference in Net Payment								
30%	\$441	\$577	\$647	\$647	\$647	\$647	\$647	\$647
40%		\$405	\$594	\$647	\$647	\$647	\$647	\$647
50%			\$422	\$592	\$647	\$647	\$647	\$647
60%				\$419	\$629	\$647	\$647	\$647
70%					\$457	\$622	\$647	\$647

b. CRSC; Current Benefit (upper panel), Proposal Amount (middle), Difference (lower)

DoD Rating	VA Disability Rating							
	30%	40%	50%	60%	70%	80%	90%	100%
30%	\$206	\$70	\$0	\$129	\$216	\$216	\$216	\$216
40%		\$242	\$53	\$0	\$150	\$216	\$216	\$216
50%			\$225	\$56	\$0	\$146	\$216	\$216
60%				\$228	\$18	\$0	\$194	\$216
70%					\$190	\$26	\$0	\$184
Proposal Amount with 0.025 Multiplier: \$647								
Difference in Net Payment								
30%	\$441	\$577	\$647	\$519	\$431	\$431	\$431	\$431
40%		\$405	\$594	\$647	\$497	\$431	\$431	\$431
50%				\$592	\$647	\$501	\$431	\$431
60%				\$419	\$629	\$647	\$454	\$431
70%					\$457	\$622	\$647	\$463

Table 7.4
Net DoD Disability Retirement Compensation with 0.02 Multiplier for Proposal Amount:
E-4, 4 YOS, Single

a. No CRSC; Current Benefit (upper panel), Proposal Amount (middle), Difference (lower)

DoD Rating	VA Disability Rating							
	30%	40%	50%	60%	70%	80%	90%	100%
30%	\$206	\$70	\$0	\$0	\$0	\$0	\$0	\$0
40%		\$242	\$53	\$0	\$0	\$0	\$0	\$0
50%			\$225	\$56	\$0	\$0	\$0	\$0
60%				\$228	\$18	\$0	\$0	\$0
70%					\$190	\$26	\$0	\$0
Proposal Amount with 0.020 Multiplier: \$518								
Difference in Net Payment								
30%	\$311	\$448	\$518	\$518	\$518	\$518	\$518	\$518
40%		\$275	\$465	\$518	\$518	\$518	\$518	\$518
50%			\$292	\$462	\$518	\$518	\$518	\$518
60%				\$290	\$500	\$518	\$518	\$518
70%					\$327	\$492	\$518	\$518

b. CRSC; Current Benefit (upper panel), Proposal Amount (middle), Difference (lower)

DoD Rating	VA Disability Rating							
	30%	40%	50%	60%	70%	80%	90%	100%
30%	\$206	\$70	\$0	\$129	\$216	\$216	\$216	\$216
40%		\$242	\$53	\$0	\$150	\$216	\$216	\$216
50%			\$225	\$56	\$0	\$146	\$216	\$216
60%				\$228	\$18	\$0	\$194	\$216
70%					\$190	\$26	\$0	\$184
Proposal Amount with 0.020 Multiplier: \$518								
Difference in Net Payment								
30%	\$311	\$448	\$518	\$389	\$302	\$302	\$302	\$302
40%		\$275	\$465	\$518	\$368	\$302	\$302	\$302
50%				\$462	\$518	\$371	\$302	\$302
60%				\$290	\$500	\$518	\$324	\$302
70%					\$327	\$492	\$518	\$334

Table 7.5
Net DoD Disability Retirement Compensation with 0.025 Multiplier for Proposal
Amount: O-4, 12 YOS, Spouse, with Two Children

a. No CRSC; Current Benefit (upper panel), Proposal Amount (middle), Difference (lower)

DoD Rating	VA Disability Rating							
	30%	40%	50%	60%	70%	80%	90%	100%
30%	\$1,147	\$983	\$765	\$569	\$331	\$138	\$0	\$0
40%		\$1,496	\$1,279	\$1,082	\$844	\$652	\$477	\$0
50%			\$1,792	\$1,596	\$1,358	\$1,165	\$991	\$76
60%				\$2,109	\$1,872	\$1,679	\$1,504	\$590
70%					\$2,385	\$2,192	\$2,018	\$1,103
Proposal Amount with 0.025 Multiplier: \$1,926								
Difference in Net Payment								
30%	\$779	\$943	\$1,160	\$1,357	\$1,595	\$1,788	\$1,926	\$1,926
40%		\$429	\$647	\$844	\$1,081	\$1,274	\$1,448	\$1,926
50%			\$133	\$330	\$568	\$761	\$935	\$1,849
60%				-\$183	\$54	\$247	\$421	\$1,336
70%					-\$459	-\$267	-\$92	\$822

b. CRSC; Current Benefit (upper panel), Proposal Amount (middle), Difference (lower)

DoD Rating	VA Disability Rating							
	30%	40%	50%	60%	70%	80%	90%	100%
30%	\$1,147	\$983	\$872	\$880	\$915	\$968	\$1,127	\$1,368
40%		\$1,496	\$1,279	\$1,082	\$844	\$840	\$962	\$726
50%			\$1,792	\$1,596	\$1,358	\$1,165	\$991	\$160
60%				\$2,109	\$1,872	\$1,679	\$1,504	\$590
70%					\$2,385	\$2,192	\$2,018	\$1,103
Proposal Amount with 0.025 Multiplier: \$1,926								
Difference in Net Payment								
30%	\$779	\$943	\$1,053	\$1,045	\$1,011	\$958	\$799	\$558
40%		\$429	\$647	\$844	\$1,081	\$1,086	\$963	\$1,200
50%				\$330	\$568	\$761	\$935	\$1,765
60%				-\$183	\$54	\$247	\$421	\$1,336
70%					-\$459	-\$267	-\$92	\$822

Table 7.6
Net DoD Disability Retirement Compensation with 0.02 Multiplier for Proposal Amount:
O-4, 12 YOS, Spouse, with Two Children

a. No CRSC; Current Benefit (upper panel), Proposal Amount (middle), Difference (lower)

DoD Rating	VA Disability Rating							
	30%	40%	50%	60%	70%	80%	90%	100%
30%	\$1,147	\$983	\$765	\$569	\$331	\$138	\$0	\$0
40%		\$1,496	\$1,279	\$1,082	\$844	\$652	\$477	\$0
50%			\$1,792	\$1,596	\$1,358	\$1,165	\$991	\$76
60%				\$2,109	\$1,872	\$1,679	\$1,504	\$590
70%					\$2,385	\$2,192	\$2,018	\$1,103
Proposal Amount with 0.020 Multiplier: \$1,541								
Difference in Net Payment								
30%	\$394	\$558	\$775	\$972	\$1,210	\$1,402	\$1,541	\$1,541
40%		\$44	\$262	\$458	\$696	\$889	\$1,063	\$1,541
50%			-\$252	-\$55	\$183	\$375	\$550	\$1,464
60%				-\$569	-\$331	-\$138	\$36	\$951
70%					-\$844	-\$652	-\$477	\$437

b. CRSC; Current Benefit (upper panel), Proposal Amount (middle), Difference (lower)

DoD Rating	VA Disability Rating							
	30%	40%	50%	60%	70%	80%	90%	100%
30%	\$1,147	\$983	\$872	\$880	\$915	\$968	\$1,127	\$1,368
40%		\$1,496	\$1,279	\$1,082	\$844	\$840	\$962	\$726
50%			\$1,792	\$1,596	\$1,358	\$1,165	\$991	\$160
60%				\$2,109	\$1,872	\$1,679	\$1,504	\$590
70%					\$2,385	\$2,192	\$2,018	\$1,103
Proposal Amount with 0.020 Multiplier: \$1,541								
Difference in Net Payment								
30%	\$394	\$558	\$668	\$660	\$626	\$573	\$414	\$173
40%		\$44	\$262	\$458	\$696	\$701	\$578	\$815
50%				-\$55	\$183	\$375	\$550	\$1,380
60%				-\$569	-\$331	-\$138	\$36	\$951
70%					-\$844	-\$652	-\$477	\$437

In this subsection, we first discuss how we compute the value of the loss of one's military career, and show estimates of the loss under the current disability and compensation system. We then ask to what extent the loss is compensated for under the current and proposed DoD disability compensation approach. Because the value of the loss we use is based on our model, it accounts for both monetary and nonmonetary factors. As discussed in the context of the model in Chapter Three, these factors include the value of public service to the member, the camaraderie of military service, and other quality-of-life factors.

To compute the loss of one's military career net of the civilian career, we need an estimate of the disabled retiree's civilian earnings. Studies discussed later (Buddin and Kapur, 2005; Buddin and Han 2012) have shown that disabled veterans have a loss of civilian earnings, and that VADC compensates for nearly all of the civilian earnings loss (and overcompensates for the loss for the most severely disabled, with VA ratings of 90 or 100 percent).¹² Because VADC largely compensates for civilian earnings loss, civilian earnings for nondisabled workers are a reasonable initial estimate of a disabled retiree's civilian earnings. However, this is discussed further below, because the earnings loss is greater for veterans with a disability severance or disability retirement. Finally, for a member with 20 or more YOS but not yet retired, the value of a civilian-only career will include military retirement benefits; the member is eligible to receive them. Similar statements apply to an RC member found unfit.

When an AC career is prematurely ended by disability, the member who would have preferred to stay longer forgoes both the financial and nonfinancial returns. The financial returns to an AC career at a point in the career include (1) the expected value of AC pay over the remainder of the AC career, that is, for as long as one chooses to stay in the AC; (2) the expected value of civilian pay if one chooses to stay in the current period but leave in a future period; (3) the expected value of AC retirement benefits if one qualifies for them and then becomes a civilian; and (4) the expected value of future service in the RC if one leaves the AC. The nonfinancial returns to an AC career at a point in time include (1) the value of one's taste for military service, that is, the value one attaches to military service apart from military compensation, and (2) the expected value of the future choice among "active," "reserve," and "civilian."

The DRM can compute the value of AC career loss at each year of service, taking into account the financial and nonfinancial returns. Given that tastes for the military differ (as the model allows), the value is averaged across tastes among service members for those serving at each given year of service. Also, to obtain an overall estimate, the values are averaged across the services; this is done for enlisted personnel and officers separately. The value computed by the model is a stock—a present value—and this is "annualized" to a monthly basis to permit comparison with net DoD disability benefits, a flow.

As mentioned, another possible yardstick of the premature loss of a military career is the difference between the present value of expected future military earnings and the present value of expected future civilian earnings. The computation of expected future military earnings could be done conditional on staying for a "full" military career of at least 20 and perhaps 30 YOS; or conditional on leaving at some particular point, e.g., at 20 YOS; or conditional on the

¹² This point refers to veterans with a DoD disability severance or disability retirements. A study by Christensen et al. (2007) of veterans with a VA disability rating—a much broader category of veterans—found that for those who first apply by age 45, the subset with a 100 percent disability rating falls short of full replacement of earnings loss by about 10 percent, and the veterans determined to be unemployable fall short by about 25 percent.

probability of leaving the military in a given future year of service having stayed to that point; or as an expected value of all possible future years of leaving (the probability of staying to year t then leaving, the probability of staying to $t+1$ then leaving, etc.). This approach has several shortcomings. It is mechanistic and does not allow for optimizing behavior regarding when a member would *choose* to leave, it does not account for the option value of staying, and it does not account for person-specific factors related to what we have called the taste for military service. In contrast, the dynamic retention approach accounts for all of these factors. Moreover, it takes account of selective retention, e.g., members with higher taste for the military are more likely to stay, which means that its predictions will be more accurate. Without accounting for the range of factors and selective retention, the simple comparison of DPVs is incomplete and inaccurate.

Before describing the results of the computations we do with the DRM, we want to recognize the point that the model does not explicitly include the possibility of a premature end to a military career resulting from a disability retirement, although one might be concerned that it should. However, we think this omission has little effect on the model's parameter estimates or its usefulness as a yardstick. The DoD Actuary (2012) reports that there were 8,994 disability retirees in 2011. With an AC force size of 1.4 million, the empirical probability of being a disability retiree in 2011 was 0.006. Further, the Actuary's (2011) disability rate tables indicate that disability rates are lower in the years of service where most members serve; in years 0 to 20 the rates are generally less than 1 in 1,000. The rates are higher after 20 YOS, and these higher rates bring up the overall disability rate to higher values, e.g., 0.003 in 2006 and 0.006 in 2011.

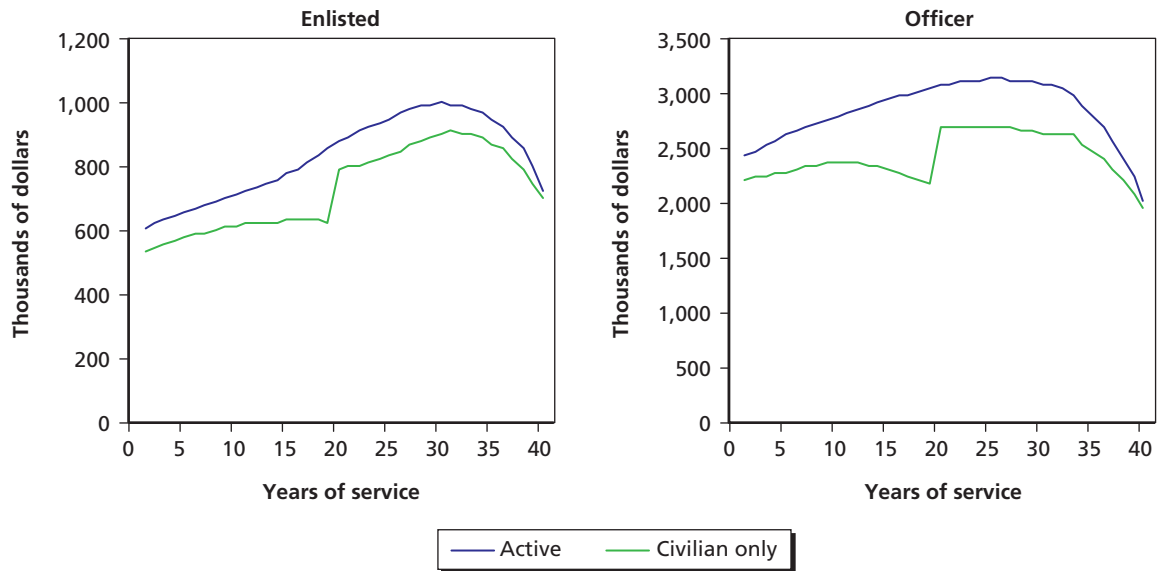
Figure 7.1 depicts the value of being able to continue in active service at each given year of service, and the value of a civilian career if leaving active service at that year. The vertical difference between the curves gives the value of the loss of a military career at that year. For example, the loss of an AC enlisted career at year of service 13 is \$120,000. This is the difference between the value of the AC career, about \$750,000, and the value of a civilian-only career, about \$630,000. The civilian career curve shifts up at 20 YOS because from then on the civilian career includes the military retirement benefit. Both curves turn down after year 30. The civilian curve turns down because there are fewer remaining years of work life, and the AC curve turns down and approaches the civilian curve because there are fewer possible years of service and fewer years of work life after service.¹³

The story for officers is similar, but the values are larger. The value of an AC career at YOS 13 is about \$2.9 million, and the value of a civilian-only career at that point is about \$2.35 million, so the value of losing the AC career is \$550,000. Both the AC and civilian curves turn down after YOS 30 or so, and the AC curve approaches the civilian curve. A difference between the enlisted and officer figures is that the officer's civilian curve turns down between YOS 12 and 20, whereas the enlisted curve is flat. The officer curve turns down because his/her late-career civilian earnings tend to decrease.

Figure 7.2 shows the value of the lost AC career expressed in dollars per month. This is done by service for enlisted and officers. In both panels, the loss increases to YOS 20, steps down because civilian compensation now includes military retirement benefits, increases somewhat to the late 20s, then decreases to YOS 40.

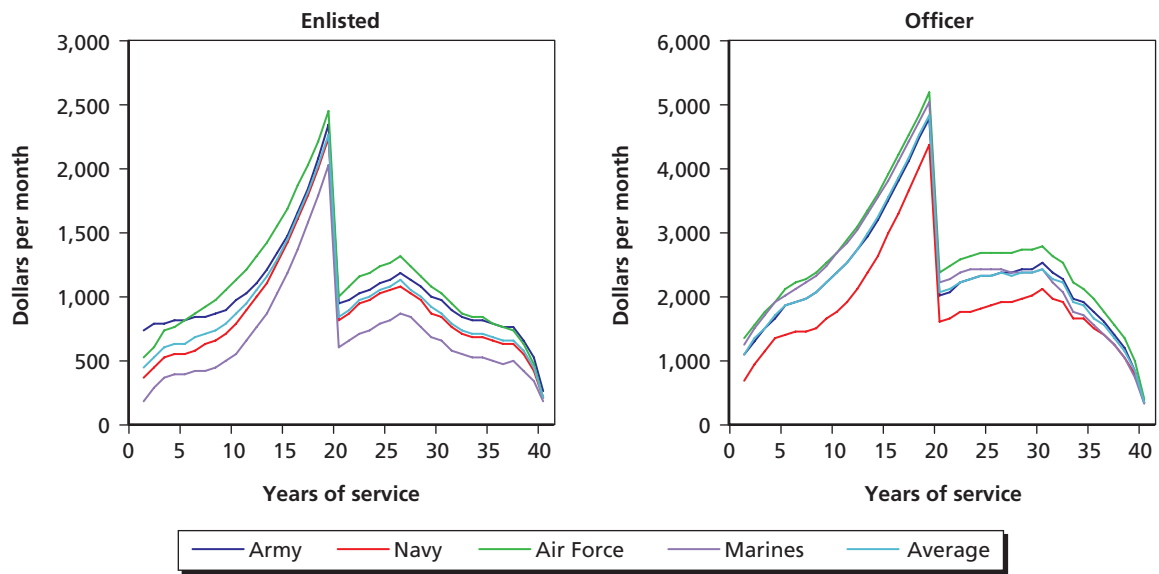
¹³ The values of the military career by year of service are computed under the current compensation system. But the values would be much the same under the compensation alternatives under consideration because they all come close to replicating the current retention profile, implying that the continuation value at each year of service is quite similar to that in the current compensation system.

Figure 7.1
Value of Active Component and Civilian-Only Careers at Each Year of Service



RAND RR501-7.1

Figure 7.2
Expected Value of Active Career Loss (\$/month), by Service

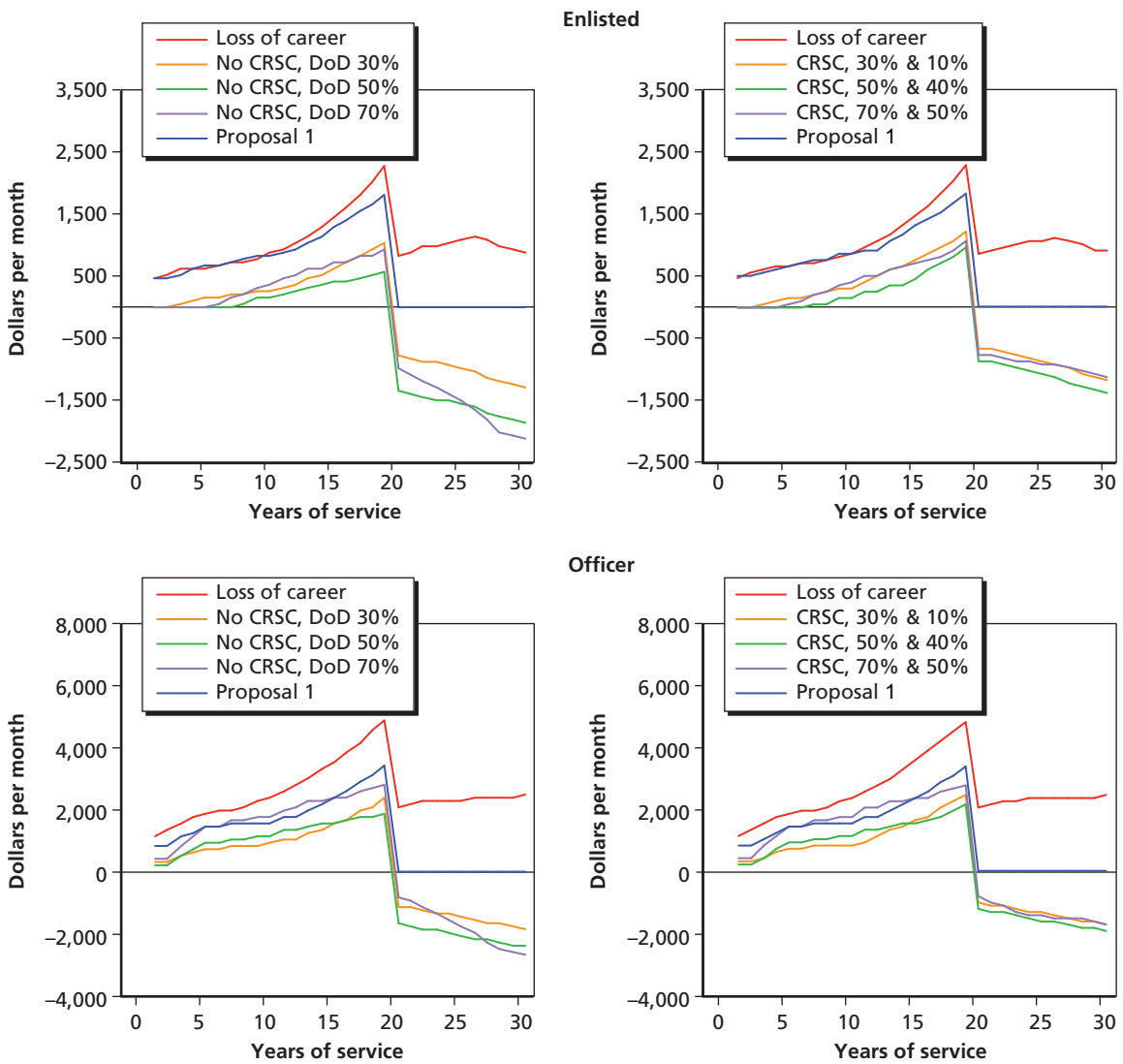


RAND RR501-7.2

Current and Proposed Compensation Compared with the Monetary Value of the Loss of One’s Military Career

Figure 7.3 compares the average net DoD disability benefit by years of service,¹⁴ expressed in dollars per month, with the average expected value of AC career loss, also expressed in dollars per month. The comparisons are made for different values of the DoD disability rating and without, and with, CRSC. The figure also shows the net DoD disability benefit under the disability reform proposal (labeled “proposal 1”) where we assume a retired pay multiplier of 0.025.

Figure 7.3
Average Net DoD Disability Compensation and Average Expected Value of Active Career Loss (\$/month)



RAND RR501-7.3

¹⁴ This computation uses a joint distribution of DoD and VA disability ratings. For a given DoD rating (as shown in the figure), the average is computed over the marginal VA rating distribution at that rating.

The average net benefit under the current system as well as under the proposal tends to increase with years of service. This is because of the increase in basic pay. Also, the presence or absence of CRSC has little effect on the current system's average benefit, though its impact is clearly positive at a DoD rating of 50 percent among enlisted. The main implication of the figure is that the proposed reform comes closer to compensating for the career loss than the current system. Nearly all of the career loss is replaced for enlisted members, and this holds whether or not a CRSC benefit is available. For officers, the reform provides higher compensation than the current system at DoD ratings of 30 and 50 percent and a similar amount at 70 percent. About three-fourths of the officer career loss is replaced.

In the figure, the net benefit after 20 YOS is negative under the current system. The reason is that a member reaching 20 YOS would have been entitled to a non-disability retirement benefit anyway, so disability compensation should be evaluated as an increment to it, not as a total including the retirement benefit. Thus, the (pre-tax) net benefit in the current system is $GRP - VADC - ARP$. Often, this quantity is negative.¹⁵ However, it is zero under the reform; the benefit equals the retirement payment and there is no VA offset.

Overall, the reform comes close to fully compensating enlisted personnel for their loss and compensates officers for about three-fourths of their loss. The main reason for this is that the reform eliminates the VA offset. As mentioned, the disability reform was incorporated into both of the DODWG's design concepts.

Cost of the Proposal

The DoD Actuary estimated the cost of the disability compensation proposal, along with costing the four retirement options via the model for estimating the annual accrual charge, taking into account disability severance and disability retirement costs. There are two variants of each option, one holding reserve current compensation in its present form and the other changing to a day's pay approach. The cost estimates in Table 7.7 are for the *change* in disability cost under each option relative to the current system; the costs differ by option because of differences in the retirement multiplier. The costs are in FY 2013 dollars.

The estimates assume that AC and RC retention profiles remain unchanged under the options. This is a simplifying assumption, but reasonably accurate because the retirement options are optimized to hold the baseline force size and shape constant. The retention profile under the optimized options predicted by our model is not the same as the baseline force, but the differences are assumed to be small enough to be acceptable.

Another caveat is that the estimates do not account for the movement from TDRL to PDRL. In actuality, disability retirees are placed on TDRL when their conditions have not stabilized, and they may remain there up to five years. When their conditions stabilize, they are placed on PDRL or in rare instances given a severance payment or returned to service.

¹⁵ Under the current system $GRP = \max(ARP, DRP)$. Thus, the expression above is equivalent to $\max(ARP, DRP) - VADC - ARP$. If $\max(ARP, DRP) = ARP$, then the preceding expression equals $-VADC$, which is negative. If $\max(ARP, DRP) = DRP$, we can write $DRP = ARP + \Delta$ and the preceding expression equals $\Delta - VADC$, which is negative unless Δ is sufficiently large. In practice, it is negative. Under the proposal, the disability benefit is ARP , and ARP would have been received anyway for those with 20 or more YOS; we have $ARP - ARP = 0$.

The incremental cost of the disability proposal is positive under retirement Options A, B, C, and D and their specific cases (Table 7.7). Additionally, the incremental disability cost, assuming the current retirement system does not change, is approximately the same as the incremental cost under Option A, case 3. This is because Option A's retirement benefit multiplier is the same as under the current system, 0.025, and case 3 keeps reserve pay in its current form.

Most of the incremental cost comes from elimination of the VA offset for disability retirees, although some is due to the increase in the minimum payment for TDRL. The incremental cost is less when the retirement benefit multiplier is lower, e.g., 0.020 instead of 0.025.

Related Issues

In the following subsections, we address a question raised by the DODWG about the adequacy of involuntary separation pay to serve as the basis of payment for a disability retirement. We find that separation pay is far less than the value of a lost military career, and by implication separation pay does not do as well in compensating for this loss as does the proposed reform. We also extend our discussion to bring attention to an empirical finding about the civilian wage loss felt by DoD disability retirees. VA disability compensation is supposed to compensate disabled veterans for their earnings loss on average and does so. Less well known, however, is the extent of civilian earnings loss among disability retirees, which is considerably larger than the earnings loss of nondisability veterans. This finding is in the regression results in the recent study by Buddin and Han (2012), and we use the finding along with wage information we develop from the 2012 March Current Population Survey to obtain explicit estimates of the wage loss. We include these findings for the purpose of informing policymakers about the disparity in covering the civilian earnings loss of disability retirees versus disabled veterans on average, leaving open the question of whether this earnings loss should be compensated and, if so, by which agency or agencies.

Table 7.7
Increment in Annual Accrual Cost from Changing from the Current to the Proposed Disability Compensation System (million FY 2013 \$)

	Concept I		Concept II		
	Option A Multiplier = 2.5%; reduced retired pay until age 65	Option B Multiplier = 2.0%; reduced retired pay until age 62	Option C Multiplier = 2.0%; full retired pay immediately	Option D Multiplier = 1.75%; full retired pay immediately	
Case 3	530	310	Case 2	460	330
Case 5	520	310	Case 4	440	320

NOTES:

Case 2: RC pay = no change (two drills/day); RC retired pay = no annuity until age 60.

Case 3: RC pay = no change (two drills/day); RC retired pay = reduced retired pay until age 65 (A) or 62 (B).

Case 4: RC pay = RMC approach (one drill/day); RC retired pay = no annuity until age 60.

Case 5: RC pay = RMC approach (one drill/day); RC retired pay = reduced retired pay until age 65 (A) or 62 (B).

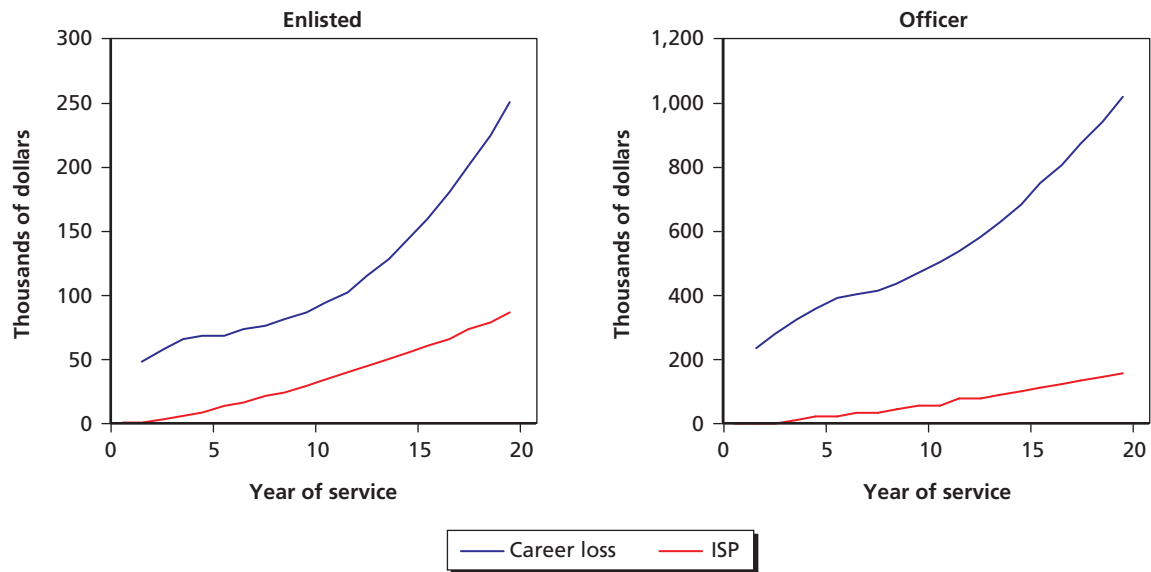
Would Involuntary Separation Pay Be an Adequate Alternative?

Another possible reform to DoD disability compensation that could be pursued in the future would be to provide a lump-sum payment to disability retirees with fewer than 20 YOS. This notion would suit the concept of shifting the responsibility for disability payments entirely to the VA, and conceivably the lump-sum payment could be structured in accordance with DoD objectives, including compensating for the value of a lost career. Although the amount of such a payment would need to be worked out, the payment could be judged with respect to the present value of career loss seen in Figure 7.1. Involuntary Separation Pay (ISP) is an existing vehicle for a lump-sum payment. ISP is paid to members involuntarily separated from the military at an amount equal to 12 times monthly basic pay times 0.1. At 10 YOS, ISP equals a year's worth of basic pay. As Figure 7.4 shows, ISP would cover only a small part of career loss for officers and more for enlisted, but far less than under the proposal.

Does VA Disability Compensation Replace Lost Civilian Earnings of Disability Retirees?

Buddin and Han (2012) studied the post-service earnings of veterans who left active military service between 1993 and 2004, following them through 2005. This study was a sequel to Buddin and Kapur (2005), which was limited to military retirees. Unlike the 2005 study, Buddin and Han (2012) included veterans who left at all years of service. A subpart of the study, of interest here, concerns the civilian earnings loss of DoD disability separations. The study used the VA disability rating to indicate the overall extent of disability and the DoD disability rating to identify DoD disability severance and disability retirees. DoD and VA disability ratings were derived from DoD and VA pay files, and civilian earnings were based on military personnel records matched with Social Security earnings records, with average earn-

Figure 7.4
Involuntary Separation Pay and the Value of Career Loss



ings by cell (not individual earnings).¹⁶ The study sought to answer whether disabled veterans had an earnings loss relative to nondisabled veterans and whether disability compensation offset the loss. A particular finding was that “veterans with disability separations from active duty have much lower earnings than do comparable other veterans with the same [VA] rating,” where disability separations include DoD disability severances and DoD disability retirees.

We used the study’s regression coefficients, along with civilian earnings from the March 2009 Current Population Survey and VA disability compensation from the 2009 VA disability compensation schedule, to compute the expected civilian earnings loss and VA compensation. This was done relative to nondisabled veterans, and the computations were done for three groups: DoD disability severances, DoD disability retirees, and neither, i.e., veterans having a VA disability rating but not a DoD disability severance or disability retirement. Tables 7.8 and 7.9 show the expected earnings loss, the level of VA compensation, and the difference, for enlisted and officer veterans by age range. The difference is the amount of earnings loss not compensated for by VA disability compensation.

The rows in the tables indicate the VA disability rating, which in some cases is grouped because of small sample size. The first three columns show the earnings difference between nondisabled veterans—those with no VA disability rating—and the earnings of disabled veterans who are neither disability severances nor disability retired (“neither” in the table), disability severances, and disability retired, respectively. The earnings in this case are expected earnings that allow for a change in annual earnings, given that the veteran is working, and in the probability of working in a year. The next two columns are VA disability compensation (VADC) and tax-adjusted VADC. The tax adjustment is made because VADC is untaxed, and the adjustment makes VADC comparable to earnings, which are taxable. The next columns show the extent to which tax-adjusted VADC compensates for the earnings loss, and this is shown as a dollar amount and as a percentage.

Veterans with a disability severance have, by definition, a DoD disability rating of less than 30 percent, so it is likely that their VA disability ratings mainly fall in the range of 10 percent to 40 percent. Similarly, veterans with a disability retirement have a DoD disability rating of 30 percent or higher, and it is likely that many have a VA rating of 30 to 70 percent. In these ranges, Table 7.8 shows that VADC more than compensates for the earnings loss of disabled veterans who are neither disability severances nor disability retired, but undercompensates for those with disability severances and disability retirements except at higher VA ratings. In addition, the extent to which VADC replaces lost earnings decreases as age increases; the older age groups are shown in the lower panels of the table. This occurs because civilian earnings increase with age while VADC does not, and side tabulations show that much of the increase comes by age 40. A disability-retired veteran with a VA rating of 50 percent can expect an annual uncompensated earnings loss of \$1,928 at ages 23–27, \$3,840 at ages 28–32, and \$4,848 at ages 33–37. By comparison, a veteran with a VA rating of 50 percent but who is neither a disability severance nor a disability retired can expect VADC to exceed the earnings loss by \$4,144 per year at ages 23–27, \$3,004 at ages 28–32, and \$2,403 at ages 33–37.

¹⁶ The Social Security Administration does not provide individual earnings records to researchers. Instead, it provides average earnings by cell, where the definition of the cell is given by the researcher, but with the constraint that the cell size (i.e., number of individuals in the cell) must be large enough so that individual earnings cannot be inferred from the cell average. Also, the DoD disability rating was not available for those with a disability severance, so we used the VA rating in these cases. Also, the VA rating used in the study was the initial VA rating; later ratings might differ because of reevaluation.

VADC undercompensates the loss in expected earnings for an officer disabled retiree with a VA rating of 50–60 percent by \$8,326 per year at ages 23–27, \$15,816 at ages 28–32, and \$20,201 at ages 33–37. For a similar veteran who was not medically retired, VADC covers \$6,465 more than the earnings loss at ages 23–27, \$3,348 at age 28–32, and \$1,523 at ages 33–37. The difference in the pattern between officers and enlisted—with officers having a larger uncompensated loss—arises because the VA disability compensation schedule is independent of officer/enlisted status. VA disability compensation, as mentioned, is intended to cover the *average* earnings loss at a VA rating.¹⁷

Broadly speaking, Tables 7.8 and 7.9 indicate that the earnings loss uncompensated by VADC is on the order of 10 percent of expected annual earnings for enlisted personnel and 20–30 percent for officers who left service through the DoD disability system. This estimate is based on data for veterans who left between 1993 and 2003, taking into account their earnings through 2005. The specific causes of the decrease in expected earnings are not obvious from the data. The service-connected disability could have been the main cause, but other possibilities include a voluntary decision to work less or to accept jobs that pay less or offer fewer benefits.

Having recognized the greater uncompensated civilian earnings loss of veterans with a DoD disability retirement or severance relative to other disabled veterans, we leave open the question of whether this should be compensated and, if so, by which agency. The proposed DoD disability compensation reform is more generous than the current system and would come closer to compensating for both the value of a lost military career and the additional civilian earnings loss. A revision to the VA disability compensation schedule with special provision for DoD disability retirees and severances could also provide additional compensation.

Conclusion

In this chapter, we considered possible reforms to the DoD disability compensation system. We reviewed the current DoD and VA systems, including the CRDP and CRSC amendments to the DoD system, and discussed a concept for reform and a different, more specific proposal for reform that was included in the DODWG's two design concepts. The disability reform concept would in effect shift the responsibility for disability compensation entirely to the VA, although DoD could still offer lump-sum payments upon separation from the service if there were certain DoD objectives served by doing so.

The proposal included in the DODWG design concepts would alter the DoD disability compensation system to compensate for the lost career opportunity. The altered system would employ a single formula, based on the years-of-service retirement benefit formula, to determine the amount of compensation, and would determine eligibility for disability retirement on the basis of either a DoD disability rating of at least 30 percent or 12 YOS. Importantly, there would no longer be VADC offset for disability retirees.

We discussed the benefit formulas in depth and considered how they would change under the current retirement benefit system and the four retirement reforms under consideration.

¹⁷ Heaton, Loughran, and Miller (2012) study earnings loss and replacement for service members deployed to Iraq and Afghanistan who were injured and referred for treatment. However, this study does not identify earnings loss and VADC replacement rates for medical retirees.

Table 7.8
Earnings Loss and VA Disability Compensation: Enlisted Veterans

VA Disability Rating	Earnings Change			VADC		Earnings Change Plus VADC with Tax Advantage			Percentage Change		
	Neither	Disability Severance	Disability Retirement	Raw	With Tax Advantage	Neither	Disability Severance	Disability Retirement	Neither	Disability Severance	Disability Retirement
Age 23–27: average civilian earnings for a male high school graduate = \$30,264											
10%	-1,506	-5,711		1,476	1,908	\$402	-\$3,803		1	-13	
20%	-2,767	-6,875		2,916	3,770	\$1,002	-\$3,105		3	-10	
30%	-5,236	-9,150	-11,339	5,052	6,531	\$1,296	-\$2,618	-\$4,808	4	-9	-16
40%	-5,475	-9,423	-11,742	7,212	9,324	\$3,849	-\$99	-\$2,418	13	0	-8
50%	-8,965	-12,585	-15,037	1,014,0	13,109	\$4,144	\$524	-\$1,928	14	2	-6
60–70%	-11,975	-15,398	-18,081	14,382	18,593	\$6,618	\$3,195	\$512	22	11	2
80–100%	-20,412		-24,975	24,436	31,591	\$11,180		\$6,617	37		22
Age 28–32: average civilian earnings for a male high school graduate = \$34,112											
10%	-1,697	-6,437		1,476	1,908	\$211	-\$4,529		1	-13	
20%	-3,119	-7,749		2,916	3,770	\$651	-\$3,979		2	-12	
30%	-5,901	-10,313	-12,781	5,052	6,531	\$630	-\$3,782	-\$6,249	2	-11	-18
40%	-6,171	-10,621	-13,235	7,212	9,324	\$3,153	-\$1,297	-\$3,911	9	-4	-11
50%	-10,105	-14,185	-16,949	10,140	13,109	\$3,004	-\$1,076	-\$3,840	9	-3	-11
60–70%	-13,498	-17,356	-20,380	14,382	18,593	\$5,096	\$1,237	-\$1,787	15	4	-5
80–100%	-23,007		-28,150	24,436	31,591	\$8,585		\$3,441	25		10
Age 33–37: average civilian earnings for a male high school graduate = \$36,140											
10%	-1,798	-6,820		1,476	1,908	\$110	-\$4,911		0	-14	
20%	-3,305	-8,209		2,916	3,770	\$465	-\$4,440		1	-12	
30%	-6,252	-10,926	-13,540	5,052	6,531	\$279	-\$4,395	-\$7,009	1	-12	-19
40%	-6,538	-11,252	-14,022	7,212	9,324	\$2,786	-\$1,928	-\$4,698	8	-5	-13
50%	-10,706	-15,029	-17,957	10,140	13,109	\$2,403	-\$1,920	-\$4,848	7	-5	-13
60–70%	-14,300	-18,388	-21,592	14,382	18,593	\$4,293	\$205	-\$2,999	12	1	-8
80–100%	-24,375		-29,824	24,436	31,591	\$7,217		\$1,768	20		5

Table 7.9
Earnings Loss and VA Disability Compensation: Officer Veterans

VA Disability Rating	Earnings Change			VADC		Earnings Change plus VADC with Tax Advantage			Percentage Change		
	Neither	Disability Severance	Disability Retirement	Raw	With Tax Advantage	Neither	Disability Severance	Disability Retirement	Neither	Disability Severance	Disability Retirement
Age 23–27: average civilian earnings for a male 4-year college graduate = \$43,264											
10–20%	-4,495	-11,717		2,196	3,261	-\$1,235	-\$8,456		-3	-20	
30–40%	-6,347	-13,532	-21,592	6,132	9,105	\$2,757	-\$4,427	-\$12,487	6	-10	-29
50–60%	-10,542	-17,515	-25,333	11,454	17,007	\$6,465	-\$508	-\$8,326	15	-1	-19
70–100%	-19,221		-32,898	22,326	33,149	\$13,928		\$251	32		1
Age 28–32: average civilian earnings for a male 4-year college graduate = \$56,056											
10–20%	-5,824	-15,181		2,196	3,261	-\$2,564	-\$11,921		-5	-21	
30–40%	-8,224	-17,532	-27,976	6,132	9,105	\$881	-\$8,428	-\$18,871	2	-15	-34
50–60%	-13,659	-22,693	-32,823	11,454	17,007	\$3,348	-\$5,687	-\$15,816	6	-10	-28
70–100%	-24,904		-42,625	22,326	33,149	\$8,245		-\$9,476	15		-17
Age 33–37: average civilian earnings for a male 4-year college graduate = \$63,544											
10–20%	-6,602	-17,209		2,196	3,261	-\$3,342	-\$13,949		-5	-22	
30–40%	-9,323	-19,874	-31,713	6,132	9,105	-\$218	-\$10,770	-\$22,608	0	-17	-36
50–60%	-15,484	-25,725	-37,207	11,454	17,007	\$1,523	-\$8,718	-\$20,201	2	-14	-32
70–100%	-28,230		-48,319	22,326	33,149	\$4,919		-\$15,170	8		-24

This discussion suggested that the disability proposal incorporated into the DODWG's design concepts would increase the amount of DoD and VA disability compensation going to disability retirees. For instance, junior enlisted would see an increase in \$300 to more than \$600 per month in the DoD disability retirement benefit, and junior officers would see an increase often upward of \$500 per month and more than \$1,000 per month for some. An exception to the broad pattern of increases in the DoD disability benefit occurs among junior officers (e.g., O-3 or O-4) with a DoD disability rating of 70 percent and a VA disability rating of 70 percent or higher. Their benefit would be about \$100 to \$800 per month less under the proposal.

To judge the performance of the current and proposed system, we suggested using the value of the lost military career as a yardstick and provided estimates of this value for AC members by year of service. The results from comparing net DoD disability benefits under the current and proposed disability compensation systems with the value of career loss indicate that the proposal comes close to replacing all of that loss for enlisted members and about three-fourths of the loss for officers. This is noticeably higher than the replacement rate for enlisted under the current system, and is as good or better for officers than under the current system.

We then considered two sidelights, namely, whether the current involuntary separation payment formula would be a competitive alternative to the proposal—the answer was no—and whether VADC in fact replaced the lost earnings of veterans with a disability severance or disability retirement—again the answer was no. Allowing for VADC not fully compensating disabled retirees for the lost civilian earnings, if the residual were viewed as the responsibility of DoD (which is an open question), then it would be more accurate to say that the proposal would replace much of, but not all of, the value of a career loss for enlisted and somewhat less than three-fourths of that value for officers.

Cost estimates of the disability proposal prepared by the DoD Actuary found that it would cost more than the current DoD disability compensation system, with specific estimates depending on the retirement system under consideration. Inclusive of this increase in cost, Options A, B, C, and D nevertheless produced cost savings.

Closing Thoughts

To place the findings of our study in context, we return to the issues that must be balanced when considering compensation reform. Past commissions and reviews that have critiqued the military compensation system find it inequitable, inefficient, and inflexible. And yet the system has functioned to meet manning requirements and has its advantages from the perspective of the service member. That said, the system is complex and, as our review of the DoD disability retirement benefit indicated, may not be adequately compensating service members for lost careers. What have we learned, and what then should be changed?

Deficiencies in the Compensation System

Past studies viewed the system as inequitable because only a minority of military members qualified for retirement benefits—roughly one in seven of an enlistment cohort and one in three of an officer cohort. The sense of inequity is manifested by the significant benefits awaiting members reaching 20 YOS as compared with zero retirement benefits for those with fewer than 20 YOS. The military retirement benefit system, though stable for more than 60 years, also has come to differ from civilian retirement benefit plans. The Employee Retirement Income Security Act in 1974 contained provisions setting standards for vesting, and since 2002 employers with qualified retirement plans must offer full vesting after three years of employment or vest on a graduated basis with 100 percent vesting after six years.

The military, with vesting at 20 YOS, may be perceived as out of step with civilian employers, a disparity if not an outright inequity. But vesting at 20 YOS has brought certain advantages to the military by stabilizing the retention of mid-career personnel who bring considerable training, experience, and leadership and who ultimately make up the pool of candidates for top leadership positions—and whose abrupt departure would pose considerable downside risk to capability and cost. Thus, the policy question raised by these competing perspectives is whether equity can be increased without abandoning the benefits of vesting at 20 YOS.

The military compensation system is inefficient because it places so much compensation in the form of deferred payments. Because of discounting, members value a dollar paid today more than a dollar paid tomorrow. The government discounts, too, but the government's discount rate is lower than that of members. As mentioned, a dollar tomorrow is worth about 94 cents today to an officer and 90 cents to an enlisted member, but the government must invest 97 cents today to pay tomorrow's dollar. Bringing compensation forward creates gains from trade. An officer or enlisted member would be better off with a payment of 95 cents today than a dollar tomorrow, and it would cost the government 2 cents less to pay the 95 cents today.

But the argument only goes so far, because an objective of military retirement benefits is to provide old-age income, and having an explicit retirement benefit system ensures that money will be saved for retirement. This mechanism would be weakened if all compensation were paid as current compensation.

Two other objectives of the military retirement benefit system are to provide funds for a successful transition from the military to a civilian career and to provide additional income during the second career. Past study groups recognized the merit of support for the transition from military to civilian life, and this objective remains as relevant as ever. But the case for second-career benefits may have weakened. Longer life spans and improvements in health care have lengthened the span of work life for many individuals, and changes in the nature of work allow workers with limitations of various sorts, such as service-connected disabilities, to function effectively at many jobs. The policy question is how much deferred compensation to bring forward as current compensation while protecting adequate old-age income, transition income, and, perhaps to a less extent, second-career income.

The military compensation system is also viewed as inflexible. Inflexibility is a form of inefficiency if it leads to a suboptimal allocation of resources, e.g., careers that should be longer or shorter than they are. There are several reasons to expect the optimal career length to differ by occupational specialty, including training costs, the value of experience on the job, and the value of specific knowledge about plans, equipment, tactics, policies, and regulations. But the retirement benefit system, with its vesting at 20 YOS and immediately available retirement benefits, induces similar retention profiles, and this has meant that manpower requirements have to be conditioned on these profiles rather than the other way around. Here, the policy question is how to conserve stability and predictability in retention and yet provide the means to allow retention profiles to differ flexibly across occupations and, if desired, within an occupation over time.

Past Studies and Reviews Recommend a Hybrid Approach

The deficiencies of the current system identified by past studies and reviews affect the shape and nature of compensation reform. A reform must conserve the strengths of the current system and yet address its deficiencies. Not surprisingly, this implies a class of reforms that are a hybrid of defined-benefit and defined-contribution systems, and have less deferred compensation and more current compensation. Recent studies, reviews, and commissions, including the DACMC and the Tenth QRMC, have recommended a hybrid approach.

A defined-benefit plan has the advantage to the member of providing a predictable source of income for old age, and a benefit that is available immediately upon separation also provides a transition benefit as members embark on their second career. A defined-contribution plan has the advantage of being portable and provides individual choice and flexibility regarding how plan funds are invested. Earlier vesting of either or both of the defined-benefit and defined-contribution plans can improve equity by increasing the likelihood that a given entrant will become vested. A hybrid plan can also accommodate the services' needs for an efficient and flexible force management tool. Depending on how retired pay is computed in the defined-benefit element, on how retirement eligibility criteria are defined, and on when payouts are made, the system can be designed to induce members to stay until certain career points and then induce them to leave when desired. As mentioned, less deferred compensation and more

current compensation can reduce costs while sustaining retention, and targeting current compensation can help shape career retention profiles across communities.

Hybrid Options We Analyzed Proved Feasible and Efficient

The hybrids analyzed in this study, Options A, B, C, and D, derived from months of quantitative research directed by the DODWG, which sorted through a dozen alternatives and explored their effect on AC and RC retention, cost, and outlays. Options A and B represent variants of one concept, which we refer to as Concept I, and Options C and D represent variants of the second, which we refer to as Concept II. Both concepts keep a substantial portion of compensation as deferred compensation in a defined-benefit plan and keep vesting for this plan at 20 YOS as well as in a defined-contribution plan that vests earlier, after 6 YOS, but begins payout in old age. But a portion of deferred compensation is brought forward in the form of continuation and transition pay. In our analysis, the amount of these pays was optimized to come as close as possible to replicating the size and experience mix of the current force structure.

Our results show that both concepts are able to reproduce the baseline AC and RC force size. Further, Concept II closely approximates the baseline experience mix of the AC and RC forces. While there was no presumption that future requirements will call for the same size and mix as the baseline force, a criterion for assessment was that any reform alternative could achieve the baseline. Concept I would lead to some small changes in experience mix, however. For enlisted members, Concept I has lower AC retention than baseline after 20 YOS, and for officers Concept I has lower AC retention in the years just before and after 20 YOS. For Option A this continues to 30 YOS, while for Option B retention is lower until 20 YOS and then higher. In the RC, Concept I produces higher retention prior to 20 YOS and lower retention post-20 YOS than baseline, generating a less senior force. Unlike Concept II, Concept I provides an immediate annuity to RC members. Thus, not surprisingly, more mid-career RC members stay until reaching retirement eligibility at 20 YOS, but then leave to claim the immediate annuity. These findings are of fundamental importance to assure the viability of these options: The options can feasibly recreate force size and nearly create force shape.

The options all produce a gain in efficiency as a consequence of bringing some compensation forward. In particular, our analysis shows that both concepts can obtain a force of the current size and nearly the same shape at lower cost. We estimate annual steady-state cost savings to be \$1.78 billion under Option A, \$4.43 billion under Option B, \$1.37 billion under Option C, and \$4.29 billion under Option D. These cost savings estimates take into account the cost of reforming DoD disability compensation and the Survivor Benefit Plan, adding a defined-contribution plan, higher continuation pay, and the inclusion of transition pay. The estimates assume that the RC current compensation system was retained; we estimate that cost savings are somewhat greater under the day's pay RC compensation system recommended by the Eleventh QRMC.

The Options Improved Equity and Added Potential Flexibility

As mentioned, one element of the hybrid approach is a defined-contribution plan like a TSP. DoD would begin contributing 5 percent of annual basic pay to members completing 2 YOS under the plan, contributions would continue to 20 YOS, and the accumulated sum would be available to the member at age 59½. The benefit would vest at 6 YOS, and as expected this plan greatly increases the percentage of service members who have at least some service-related retirement benefit.

Our analysis implied that different values of continuation and transition pay multipliers could alter the size and experience mix of the force if desired. In our simulations, continuation and transition pay multipliers were the same across occupations; continuation pay multipliers differed between services and between officer and enlisted communities within a service but not by occupation, and, at the request of the DODWG, transition pay multipliers were common for all but vary by the option and case. Still, given legislative authority, a service could offer continuation pays at different rates by occupation and thus could shape its occupation retention profiles.

Transition pay, however, would probably not afford this flexibility. Including the cost of transition pay in the accrual charge protects it from annual, line item funding decisions, and transition pay would presumably be a stable, predictable element of the retirement benefit system with a common transition pay multiplier—such as we have analyzed. This would, however, constrain the services not to vary the multiplier. The common multiplier might encourage more retention—longer careers—than optimal in some occupations, and shorter careers than optimal in other occupations. In the latter case, a service might add incentive pay to lengthen the career, assuming an appropriate type of senior incentive pay was available.

Both Concepts Achieve Cost Savings

During the transition, DoD's costs relative to baseline begin to decrease as soon as the new system is implemented. This is because the retirement accrual charge is lower as a result of the lower defined benefits under the options and despite the costs of the defined-contribution plan, continuation pay, transition pay, disability reform, and survivor benefit reform, which are also rolled into the accrual charge. DoD costs continue to decrease—though sometimes with a pause after 12 years from implementation as DoD begins to pay continuation pay—and reach a steady state in 30 years. In the steady state, the cost savings range from \$1.37 billion to \$4.43 billion, depending on the concept and specific option.

In tandem with the cost decrease is an initial increase in outlays relative to baseline. The increase begins six years after implementation as expenditures begin for defined-contribution accounts for vested members, and increase further for continuation pay and transition pay. But defined-benefit retirement annuities are lower in the options than in the current system, and the lower outlays for these benefits gradually decrease total outlays below their baseline level. Thus, during the first 30 or so years after implementation, costs decrease, while outlays increase and then decrease. Both then reach a steady state below baseline. The relatively high transition multipliers in Options A and B (Concept I) cause the increase in near-term outlays to be larger than those for Options C and D (Concept II), while the partial second-career annuity under

Concept I causes a more rapid decline in outlays when outlays eventually drop than under Concept II.

Costs Decrease Faster If Members Can Opt In to the New System

The process of transitioning to a new system can take a generation, as members grandfathered under the current system eventually leave the military and collect benefits for the remainder of their life. But our analysis shows that allowing grandfathered members to opt in to the proposed system accelerates the transition. This choice benefits the member; the member is grandfathered and cannot be made worse off by not opting in, but some members determine that they are better off under the new system and gain by opting in. We find that opt-in rates vary across service and for officers and enlisted personnel, though opt-in rates are higher for junior personnel and often higher for Concept I compared with Concept II. Our analysis shows that allowing grandfathered members to opt in causes larger cost savings to occur sooner, and causes outlays to become higher sooner and then later become lower sooner. These effects differ between Concepts I and II. The increase in outlays under Concept I generally occurs more rapidly with the opt-in feature than for Concept II, because opt-in rates are typically higher, but the eventual drop in outlays also generally occurs sooner as well.

The Proposed Reform in DoD Disability Retirement Benefit Is Fairer and Simpler

The current DoD disability retirement benefit has grown more generous in some ways with the addition of the CRDP and CRSC. CRDP allows individuals who are year-of-service retirees or disability retirees and who have a VA disability rating of 50 percent or more to receive DoD retirement benefits and VA disability benefits concurrently. CRSC is a supplement to DoD disability compensation available to retired members, including disability retirees, with combat-related injuries and a VA disability rating of at least 10 percent. However, CRDP and CRSC have added complexity and created distinctions among retirees that some may view as arbitrary. The proposed reform does away with this complexity and makes no arbitrary distinctions. The proposal compensates service members found unfit for retention and having a DoD disability rating of at least 30 percent or, alternatively, 12 YOS with a benefit based on the years-of-service retirement benefit formula, and eliminates the VA benefit offset. Our analysis shows that this approach typically increases the net DoD benefit received by disability retirees, whether or not they are eligible for CRSC or CRDP. Moreover, using a standard of compensation based on the value of a lost military career, a value we estimated from the DRM, we find that the proposal comes close to compensating enlisted members for the loss of their career, whereas the current system did not. Also, the proposal comes closer to this standard for officers than does the current system. The proposal would increase DoD costs for disability compensation, but based on the analysis, the compensation would more accurately reflect the loss suffered by members who were found unfit to continue in service.

In Conclusion

Our analysis illustrates the complexity of retirement reform. Even though Concepts I and II improve efficiency and fairness and have the potential to improve flexibility, they differ in the formula determining second-career benefits, the old-age retirement benefit multiplier, in whether retirement benefits begin immediately or at age 60, and in the cost savings and outlays in the steady state and in the transition. Both concepts replicate, or nearly replicate, the current AC force size and shape, yet Concept I, which offers immediate retirement benefits to reservists, would generate a more junior reserve force, while Concept II can replicate the current reserve force. Given the differences, there is no simple way of concluding that one concept is preferable to the other.

Broadly speaking, the findings of our analysis offer assurance to the military services that current manpower requirements can be met under Concept I and II reforms. Such assurance is of fundamental importance for national defense. Both types of reforms can also attain force sizes and shapes different than those existing today. In our analyses for the DODWG, we treated continuation and transition pays in the concepts as force-wide elements of compensation, but in principle a service could differentiate them to vary career lengths by field or occupation. DoD and the services are also interested in cost savings, and Concept I and II reforms both provide them. Finally, the concepts keep faith with service members by maintaining a significant, secure retirement benefit, but one restructured to include a defined contribution with early vesting.

The concepts all require an increase in outlays, and the increase is higher and sooner under Concept I, although the eventual decrease in outlays also occurs sooner under Concept I. The increase in outlays under Concept II ramps up more gradually, which creates less immediate pressure on the federal budget. Allowing members to opt in makes currently serving members better off by giving them a choice, and allows cost savings to be realized sooner. When grandfathered members are allowed to opt in to the new system, the increase in outlays under any of the options does not exceed \$2 billion a year and is less in most years. This amount is “small” relative to the total personnel budget of \$155 billion in 2013 (Congressional Budget Office, 2013).

The increase in the percentage of service members that vest would bring the military retirement system into closer alignment with defined-contribution plans offered by private-sector employers. The payment of a transition pay of 2.5–3 times annual pay (Concept I) or 0.5–0.75 times annual pay (Concept II) can provide funds to assist service members in various ways, e.g., in the transition to new careers, relocation, making down payments, paying for college for their children, and so forth. The concepts still reserve a large portion of funds for second-career and old-age retirement benefits. Also, the defined-contribution funds—following the TSP model—would be placed in government-approved funds that protect against high risk or fraudulent investment vehicles.

The policy discussion over military retirement will continue and no doubt expand to consider other reform ideas. Still, the concepts developed by the DODWG have a number of merits from the perspectives of the military, the government, and the service member.

Preliminary Results

Table A.1
Summary of Analysis of Defined-Benefit Retirement Alternatives 1, 3, 5, 8, 9, 10, 11, and 12

Alternative Number	1	3	5	8	9	10	11	12
Renamed Designation	A	B			C			D
Defined-benefit vesting	20	20	20	20	20	20	20	20
Defined-benefit multiplier in old age	2.50%	2.00%	1.00%	0.00%	2.00%	1.50%	1.00%	1.75%
Defined-benefit full retirement age	65	62	60	NA ^a	NA ^a	NA ^a	NA ^a	NA ^a
Defined-benefit payment in second career	Partial	Partial	Partial	NA ^a	Full	Full	Full	Full
Army								
Enlisted percentage change in cost per person from baseline	-1.14%	-2.05%	-5.70%	-8.84%	-1.01%	-3.19%	-5.08%	-2.04%
Enlisted percentage change in DPV at YOS 20 ^b	11.86%	5.83%	-10.76%	-12.97%	-0.69%	-6.28%	-8.64%	-2.90%
Officer percentage change in cost per person from baseline	0.56%	-0.51%	-7.63%	-16.06%	-1.39%	-6.06%	-9.63%	-2.37%
Officer percentage change in DPV at YOS 20 ^b	6.75%	-1.46%	7.04%	11.49%	5.55%	6.75%	7.75%	5.26%
Navy								
Enlisted percentage change in cost per person from baseline	-0.97%	-1.80%	-5.12%	-9.84%	-1.10%	-2.91%	-4.99%	-2.15%
Enlisted percentage change in DPV at YOS 20 ^b	16.55%	9.90%	10.06%	16.90%	1.59%	5.76%	8.63%	1.96%
Officer percentage change in cost per person from baseline	0.10%	-1.30%	-5.76%	-10.00%	-1.16%	-3.40%	-5.77%	-2.23%
Officer percentage change in DPV at YOS 20 ^b	10.04%	5.26%	20.19%	31.52%	6.63%	17.90%	22.96%	8.97%

Table A.1—continued

Alternative Number	1	3	5	8	9	10	11	12
Renamed Designation	A	B			C			D
Air Force								
Enlisted percentage change in cost per person from baseline	-1.46%	-2.44%	-7.89%	-13.02%	-1.47%	-4.62%	-7.42%	-1.14%
Enlisted percentage change in DPV at YOS 20 ^b	16.56%	7.20%	-5.36%	-6.57%	-2.36%	-3.25%	-4.30%	11.86%
Officer percentage change in cost per person from baseline	0.53%	-0.96%	-8.09%	-15.42%	-1.31%	-6.14%	-9.54%	-2.44%
Officer percentage change in DPV at YOS 20 ^b	8.82%	1.11%	16.33%	28.41%	8.62%	14.23%	18.39%	9.82%
Marine Corps								
Enlisted percentage change in cost per person from baseline	0.03%	0.33%	-3.64%	-6.53%	-0.43%	-2.09%	-3.48%	-1.28%
Enlisted percentage change in DPV at YOS 20 ^b	13.60%	5.26%	10.48%	13.37%	-1.41%	6.43%	8.95%	-2.72%
Officer percentage change in cost per person from baseline	0.09%	-0.60%	-8.35%	-14.35%	-1.52%	-5.86%	-9.06%	-2.21%
Officer percentage change in DPV at YOS 20 ^b	6.90%	-1.67%	3.39%	10.68%	3.63%	6.44%	7.96%	4.63%

NOTE: Alternative 12 was added later, but we have included the results for completeness.

^a NA: Alternative 8 does not include a defined-benefit plan. Alternatives 9–12 make no distinction between the second career and old age. The annuity is the same during both periods under these alternatives.

^bThe DPV of a 20-year career in the baseline is \$24,789 for enlisted personnel and \$194,301 for officers.

Steady-State Retention Results for the Navy, Air Force, and Marine Corps

The figures in this appendix follow the same form as those for the Army in Chapter Five. For each service, the figures first show the results for enlisted personnel for Options A, B, C, and D, and then do the same for officers. The results for the Air Force include figures for rated officers, followed by figures for nonrated officers.

Figure B.1
Navy Enlisted Retention, Option A (black = baseline, red = proposal)

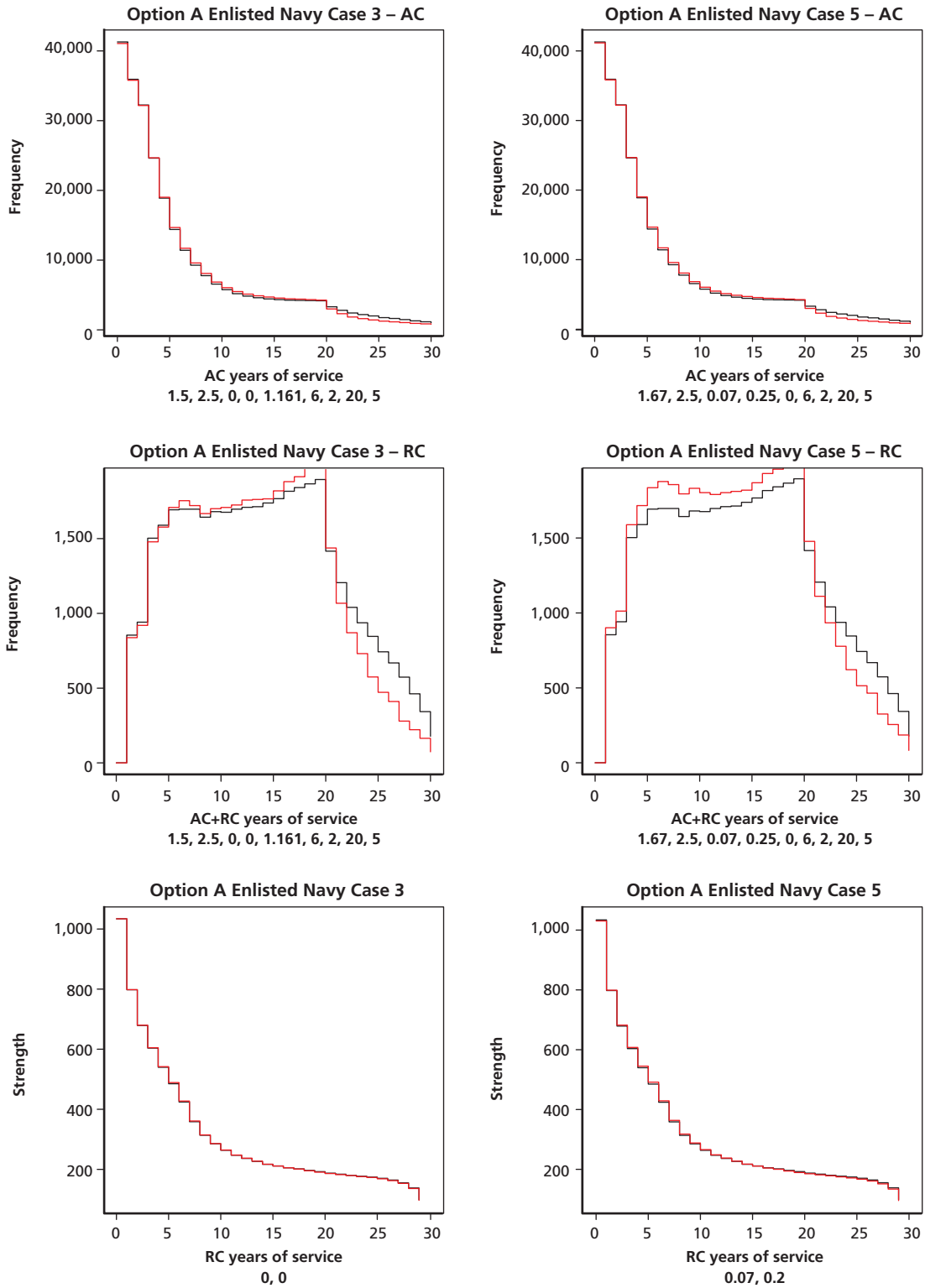


Figure B.2
Navy Enlisted Retention, Option B (black = baseline, red = proposal)

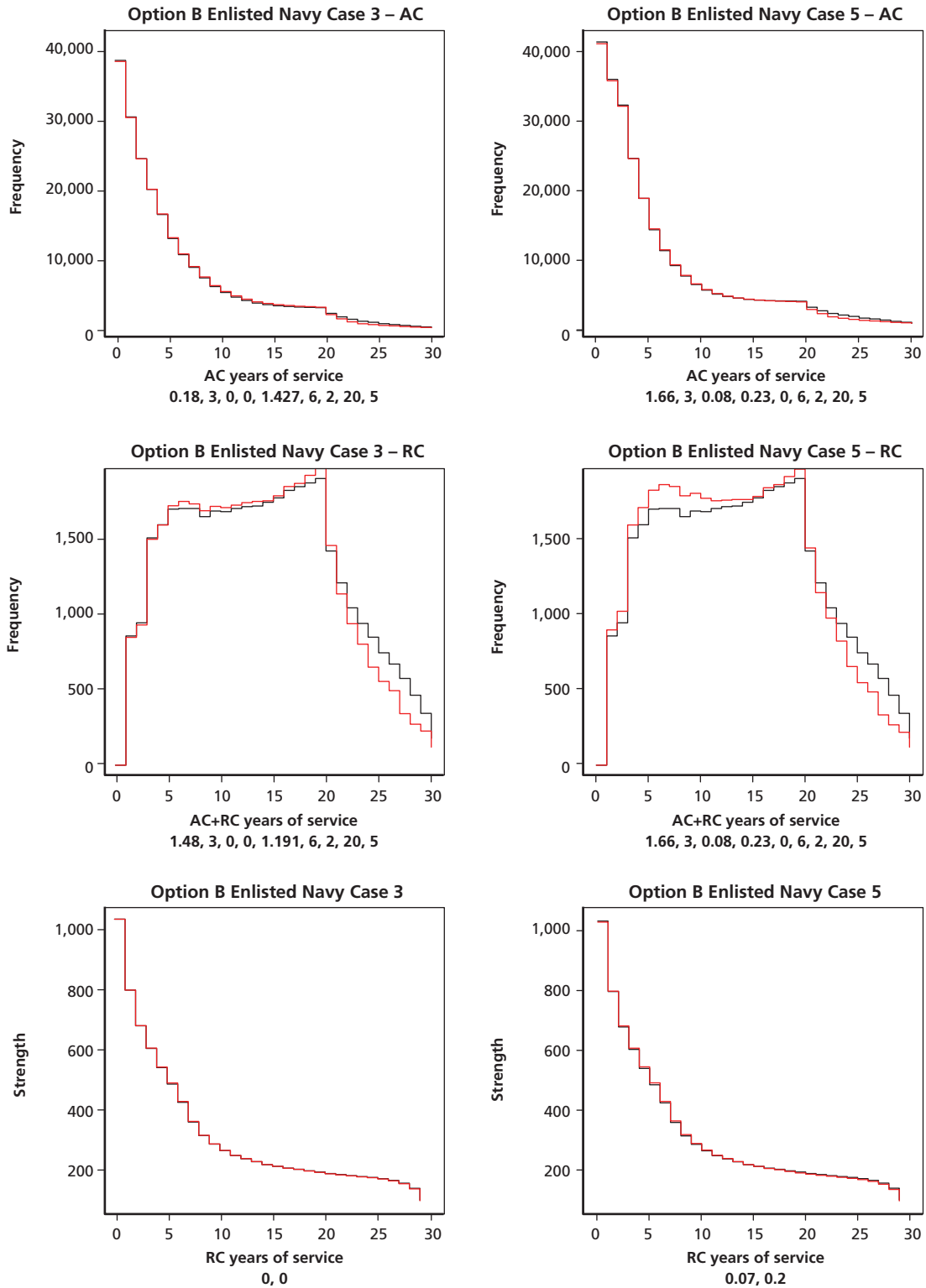


Figure B.3
Navy Enlisted Retention, Option C (black = baseline, red = proposal)

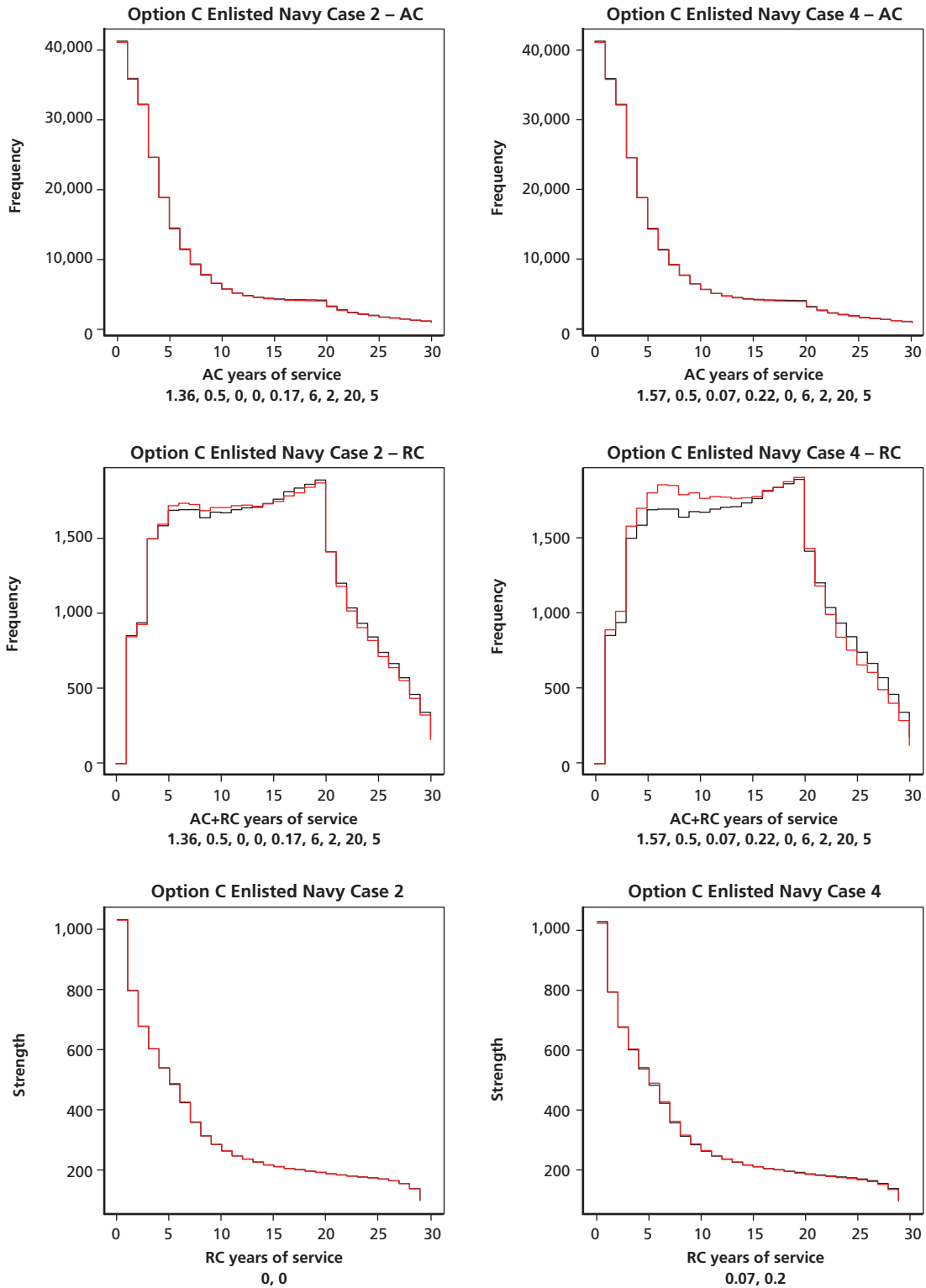


Figure B.4
Navy Enlisted Retention, Option D (black = baseline, red = proposal)

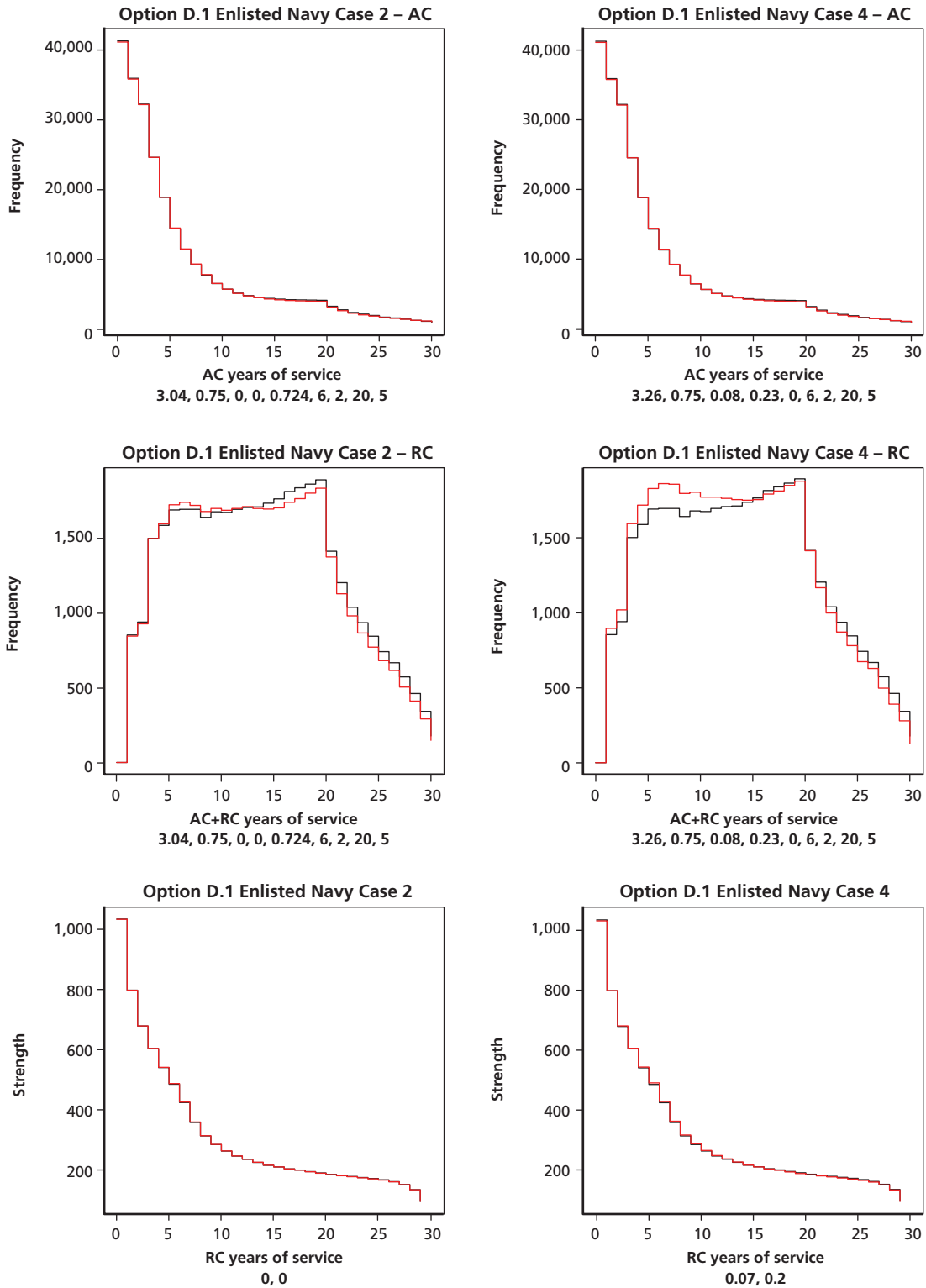


Figure B.5
Navy Officer Retention, Option A (black = baseline, red = proposal)

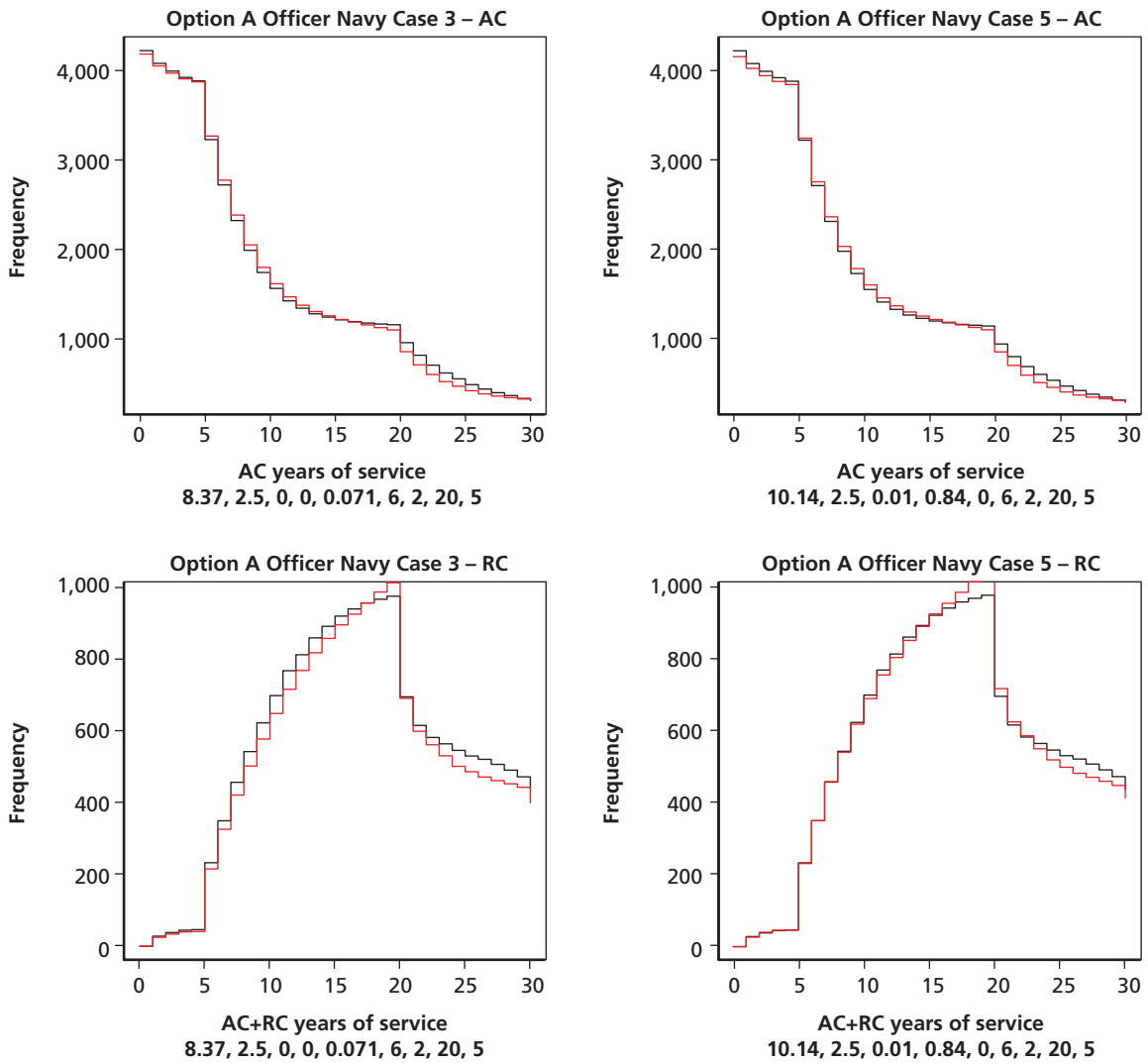


Figure B.6
Navy Officer Retention, Option B (black = baseline, red = proposal)

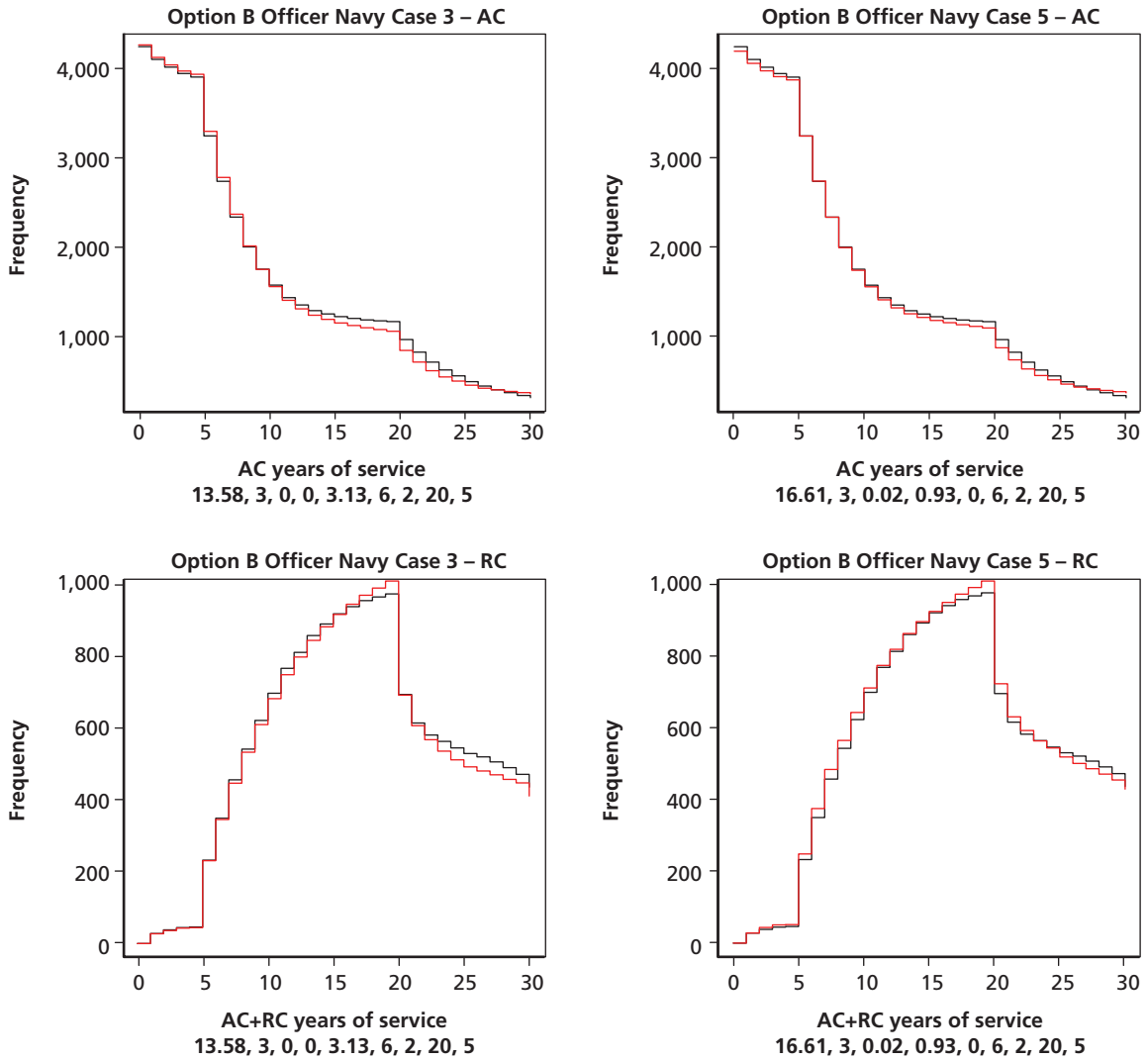


Figure B.7
Navy Officer Retention, Option C (black = baseline, red = proposal)

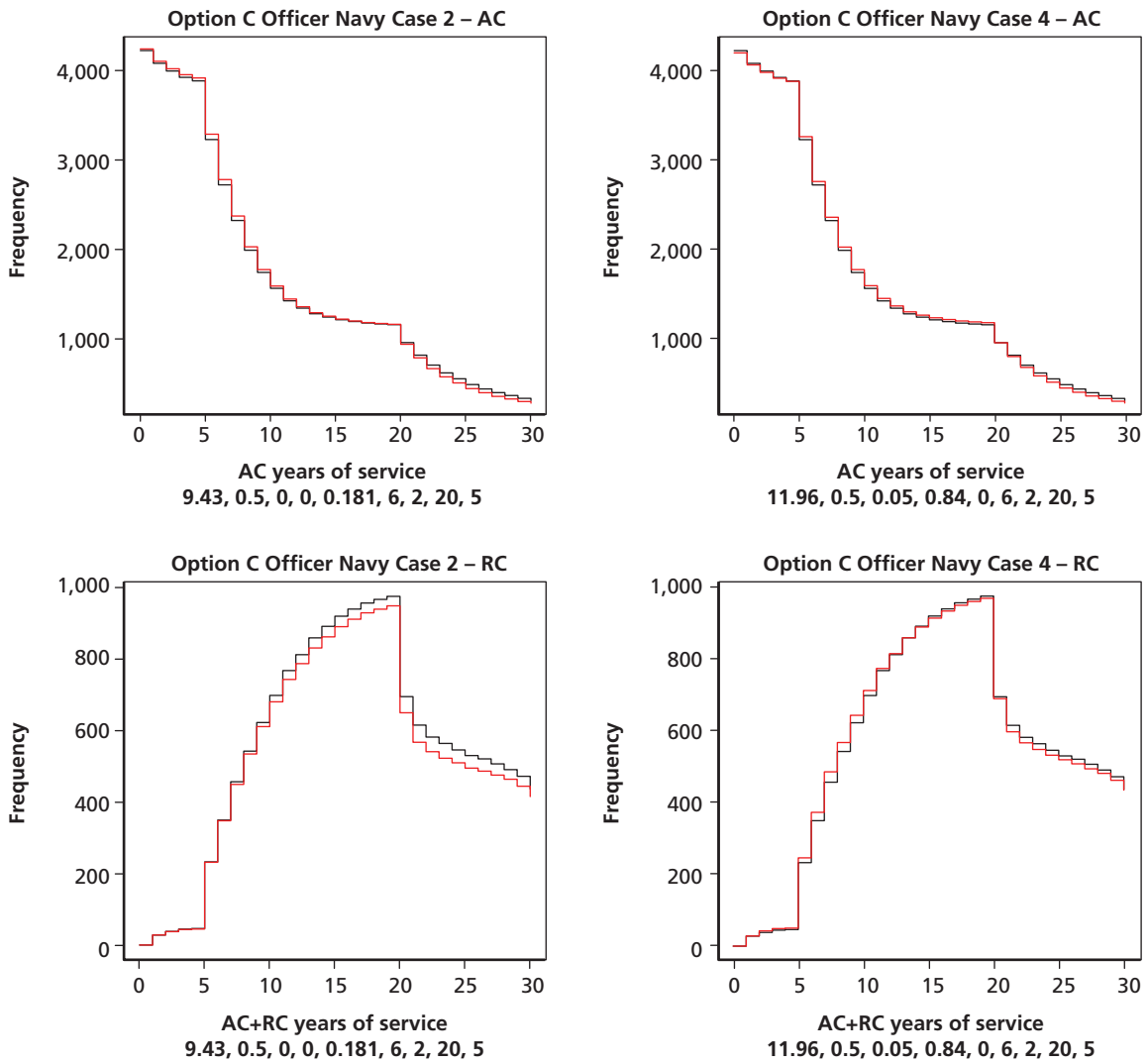


Figure B.8
Navy Officer Retention, Option D (black = baseline, red = proposal)

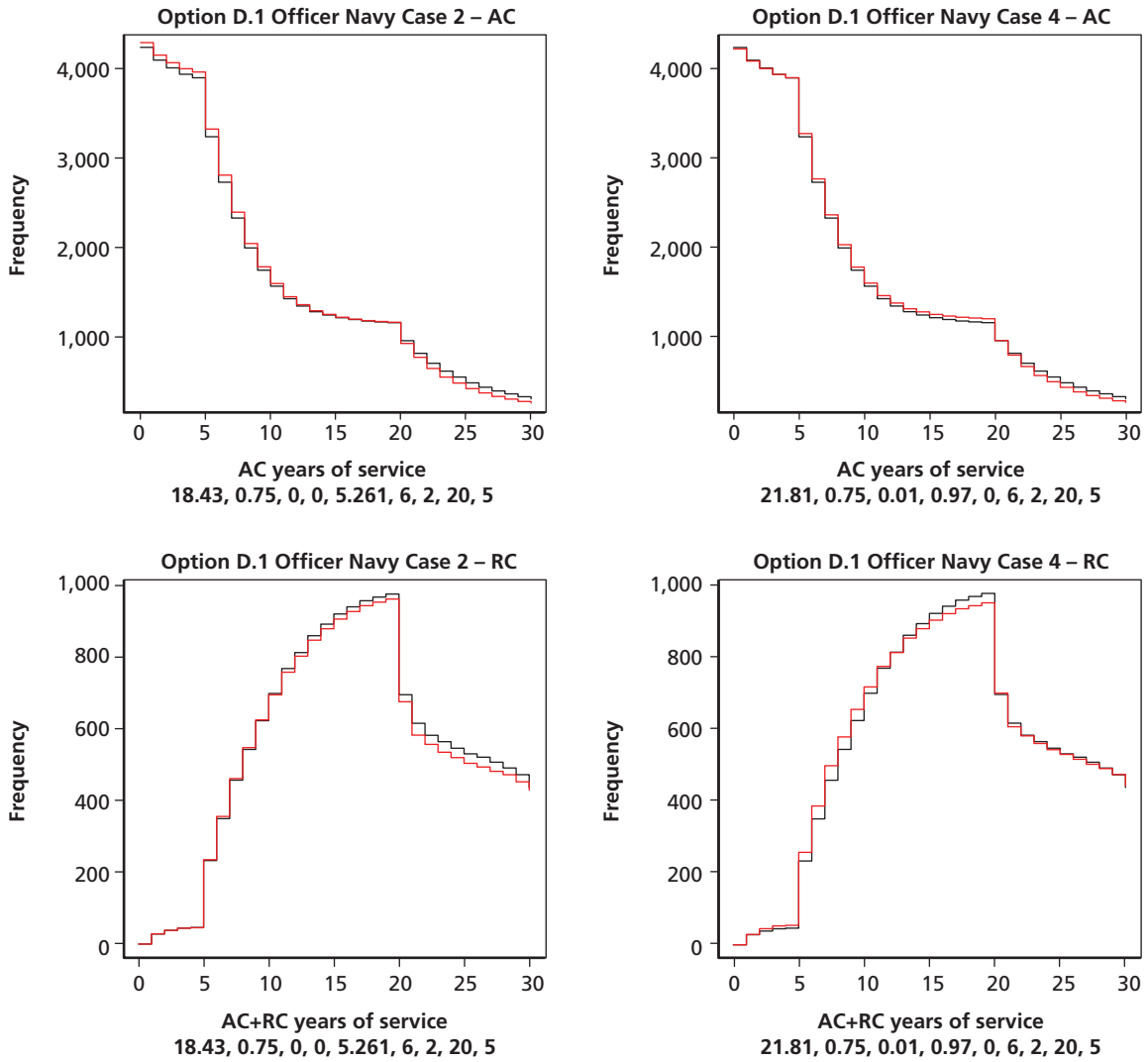


Figure B.9
Air Force Enlisted Retention, Option A (black = baseline, red = proposal)

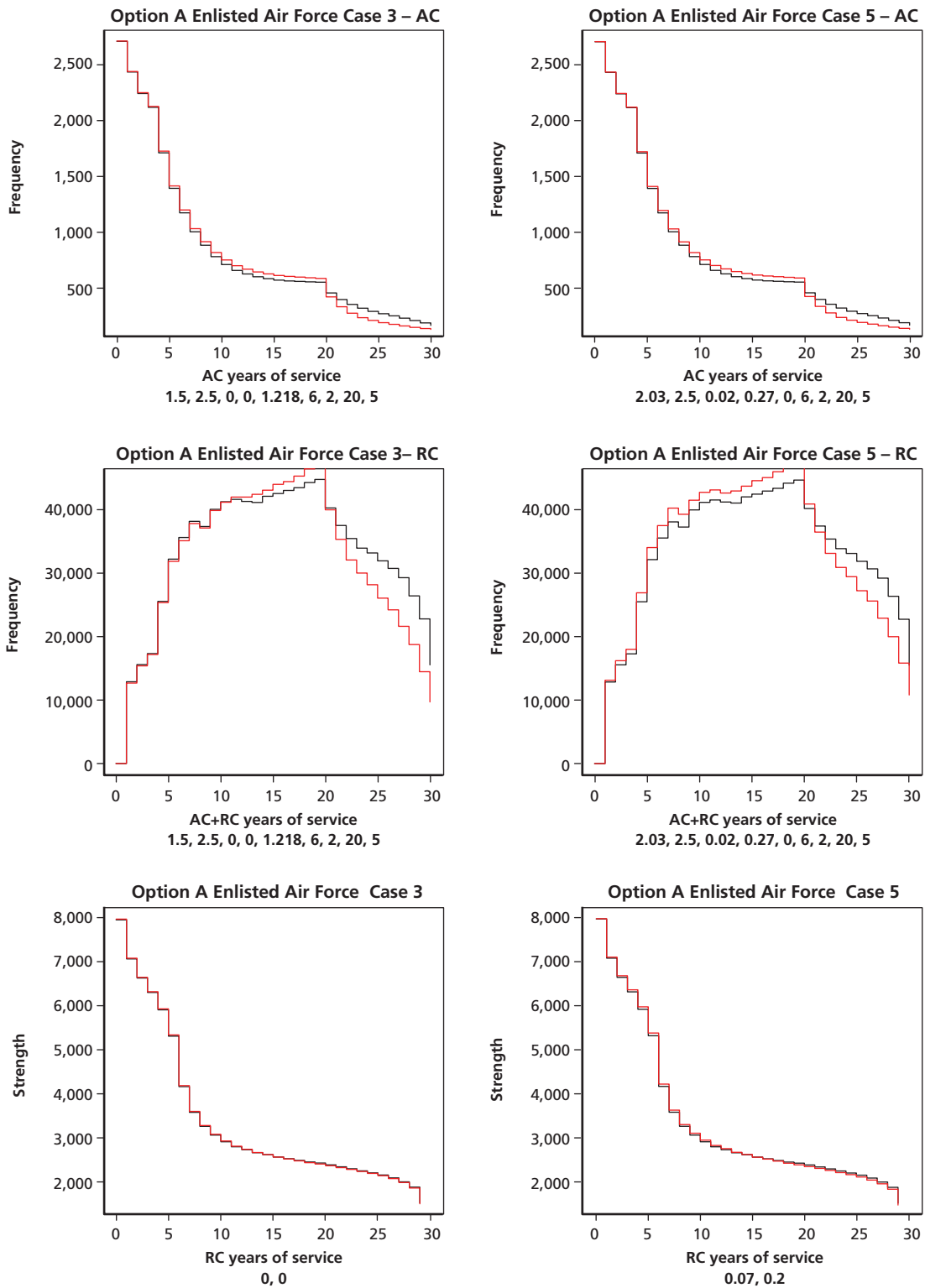


Figure B.10
Air Force Enlisted Retention, Option B (black = baseline, red = proposal)

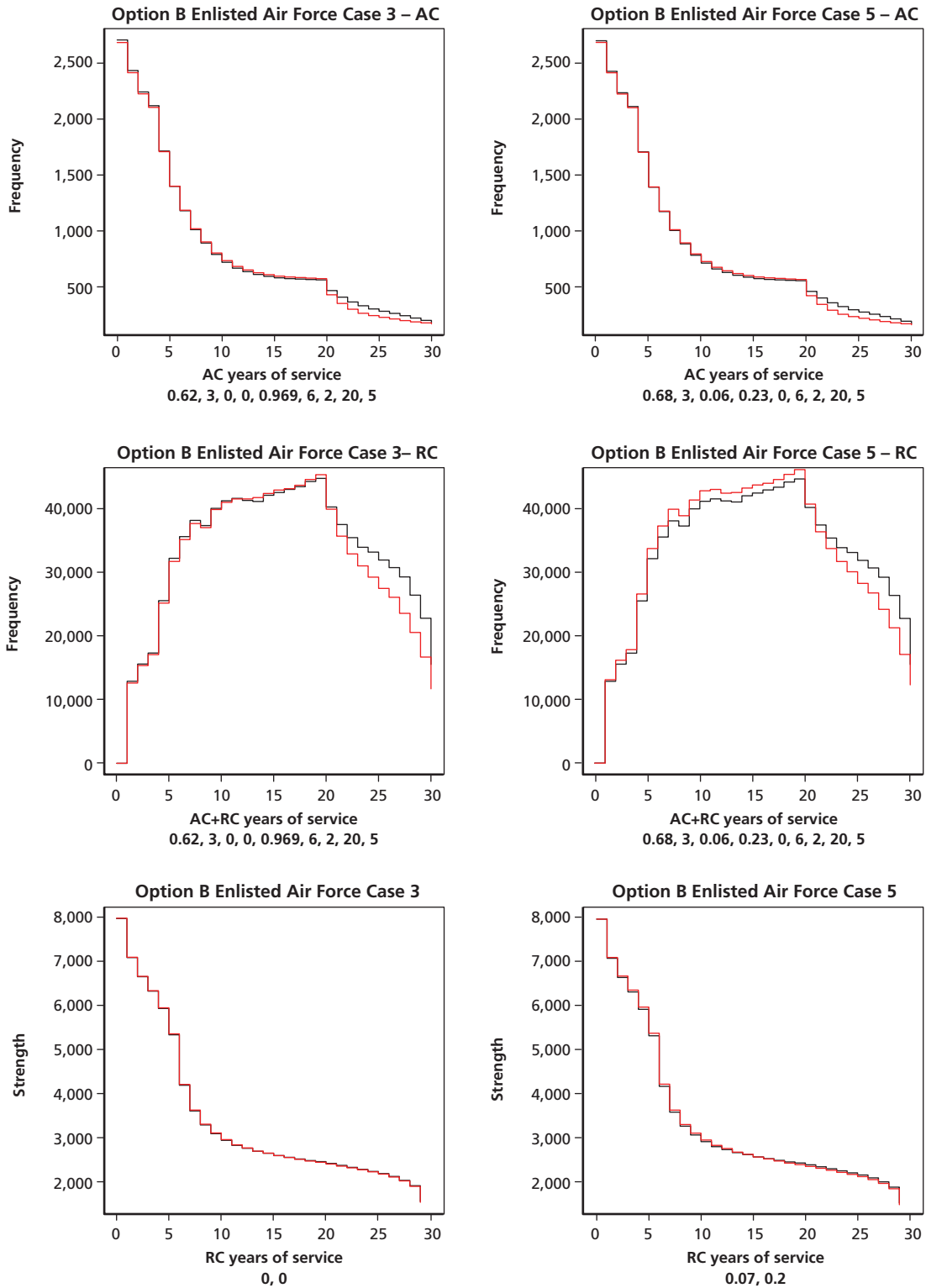


Figure B.11
Air Force Enlisted Retention, Option C (black = baseline, red = proposal)

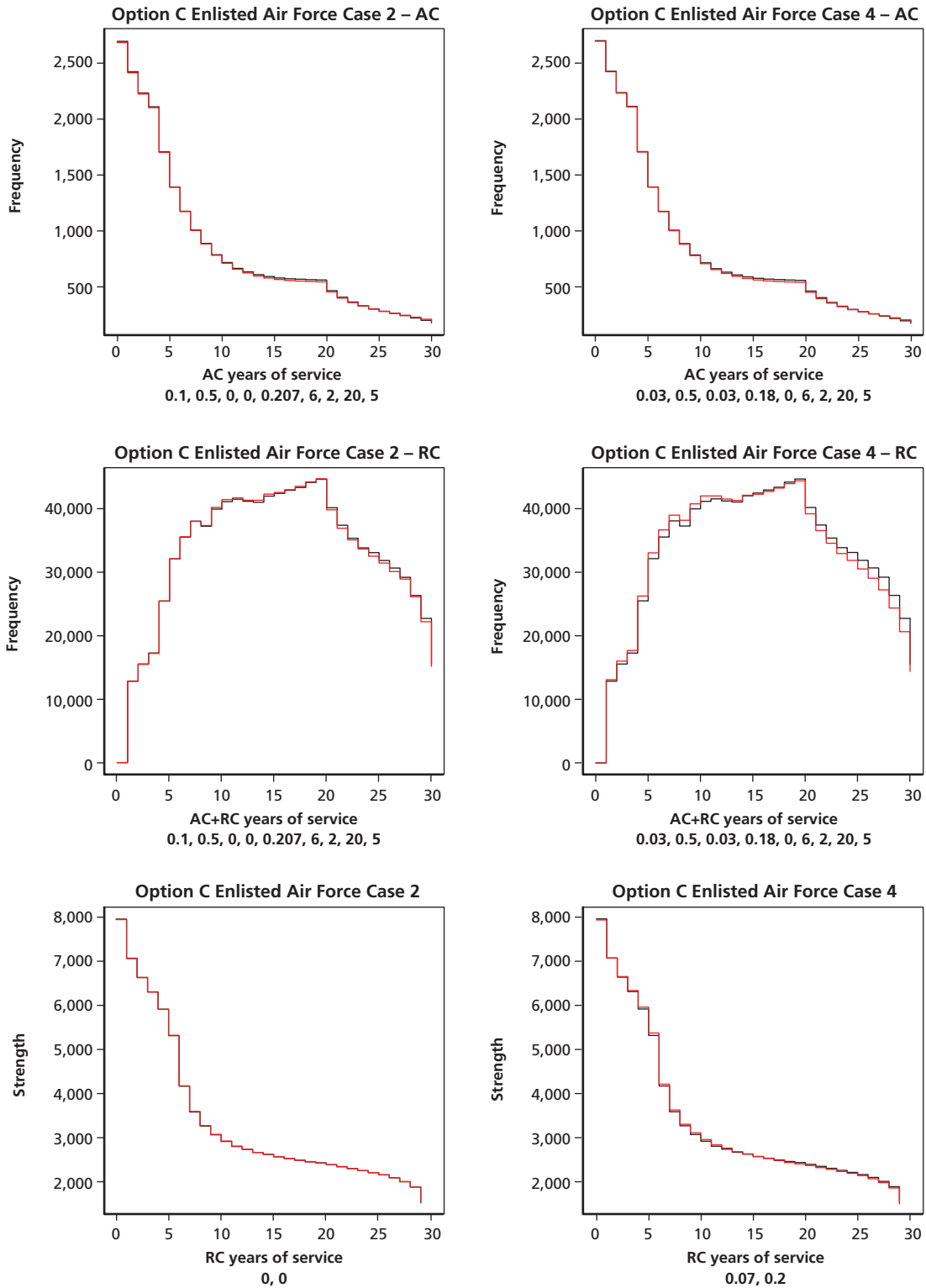


Figure B.12
Air Force Enlisted Retention, Option D (black = baseline, red = proposal)

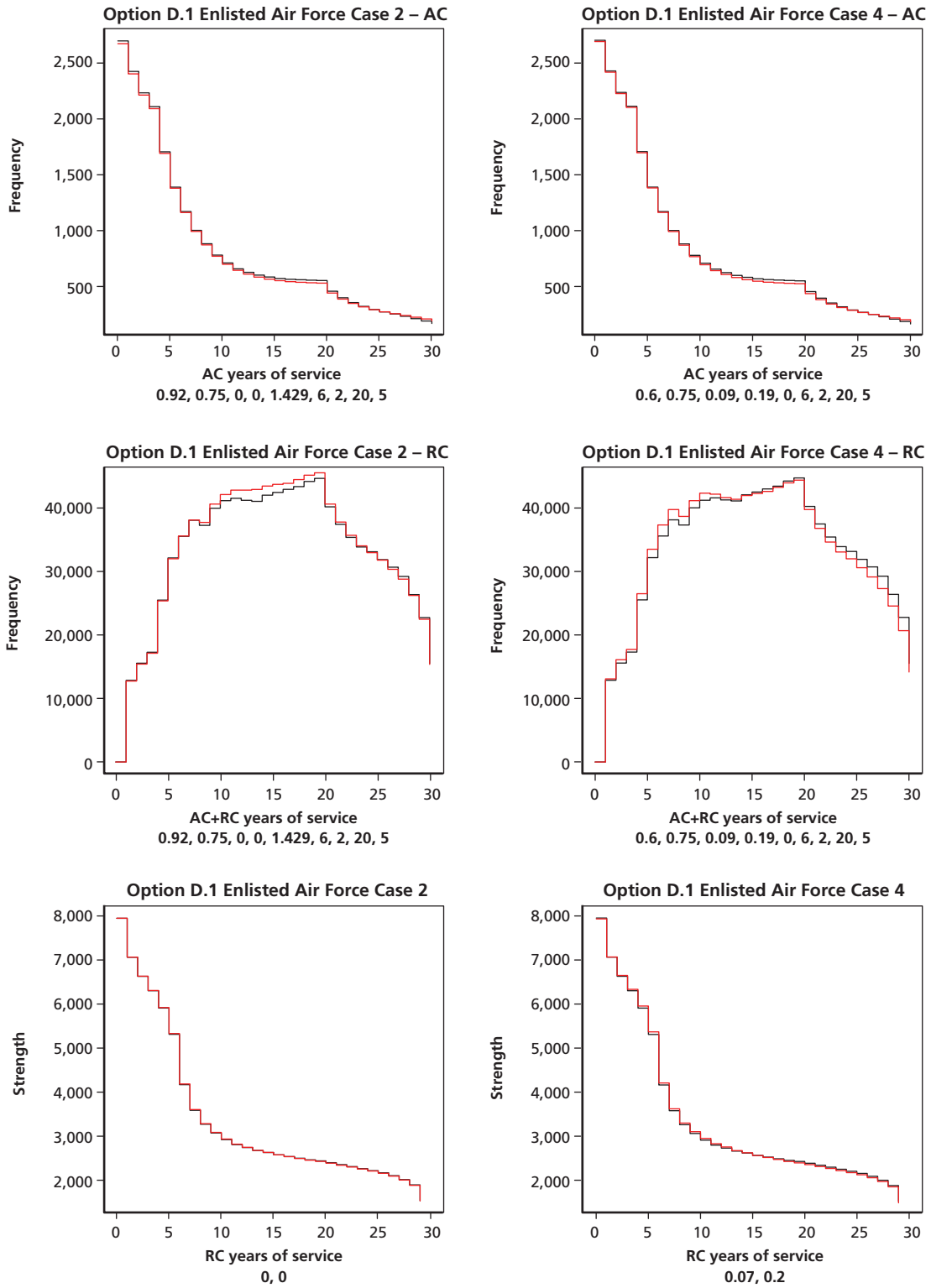


Figure B.13
Air Force Rated Officer Retention, Option A (black = baseline, red = proposal)

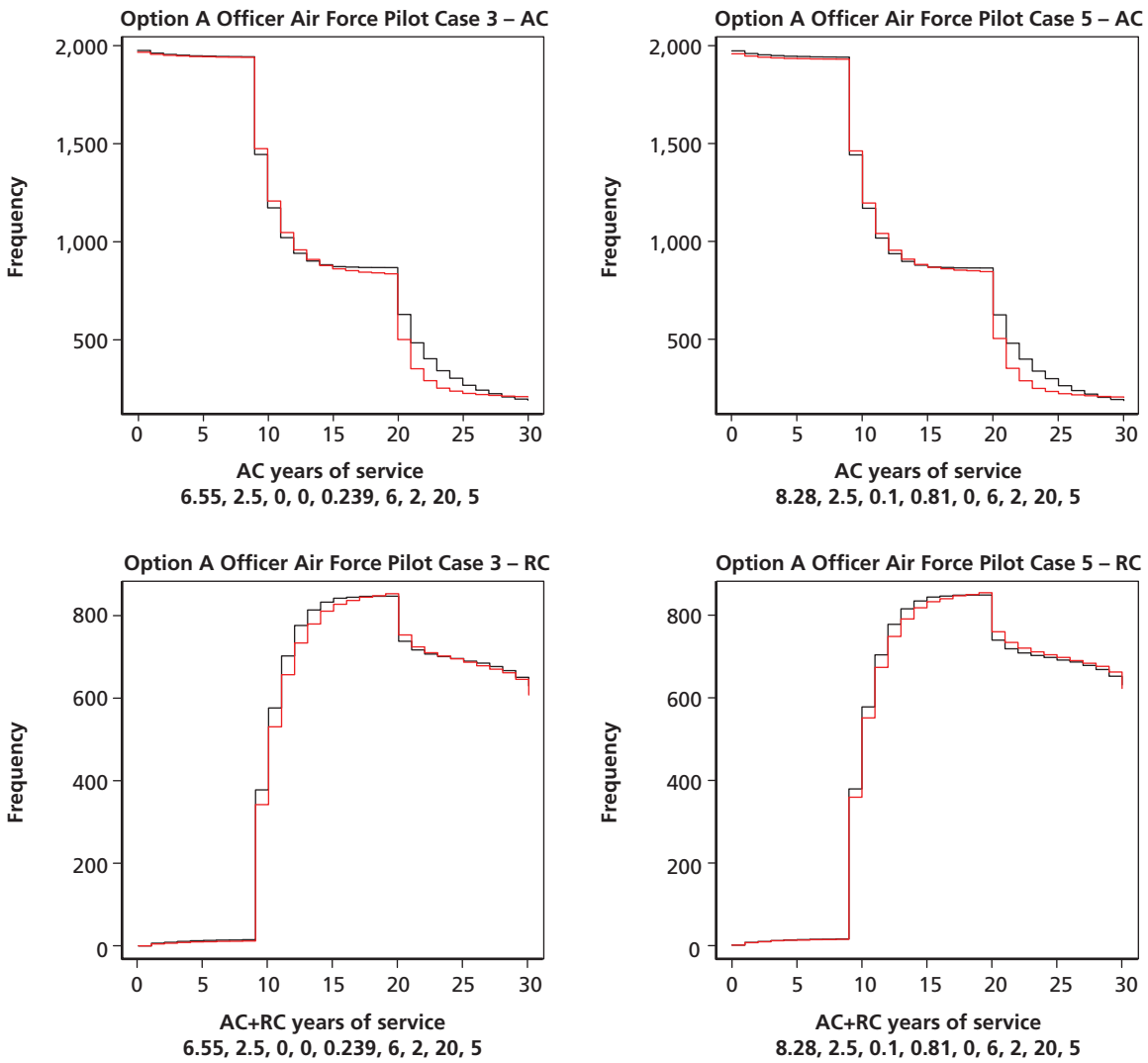


Figure B.14
Air Force Rated Officer Retention, Option B (black = baseline, red = proposal)

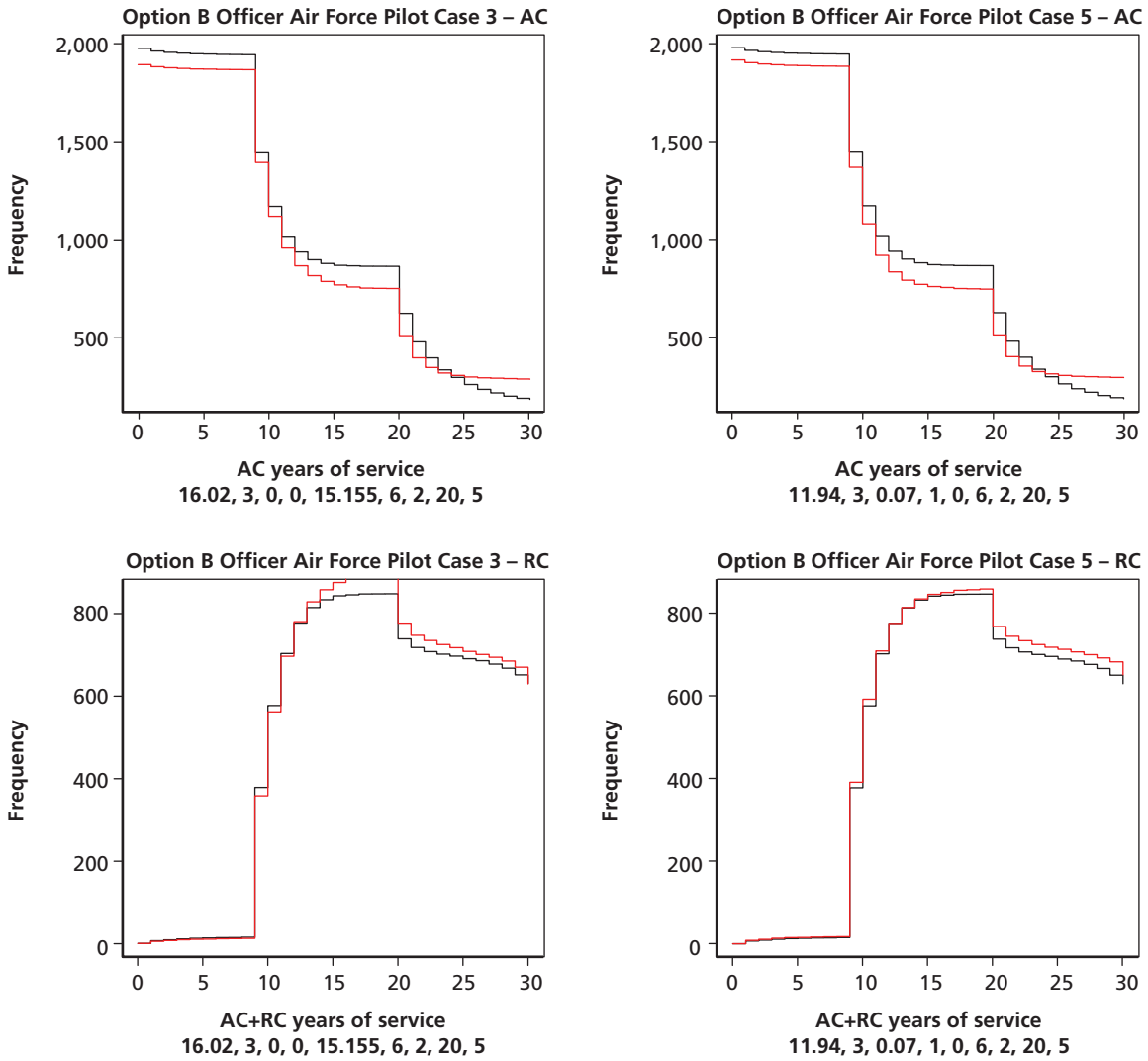


Figure B.15
Air Force Rated Officer Retention, Option C (black = baseline, red = proposal)

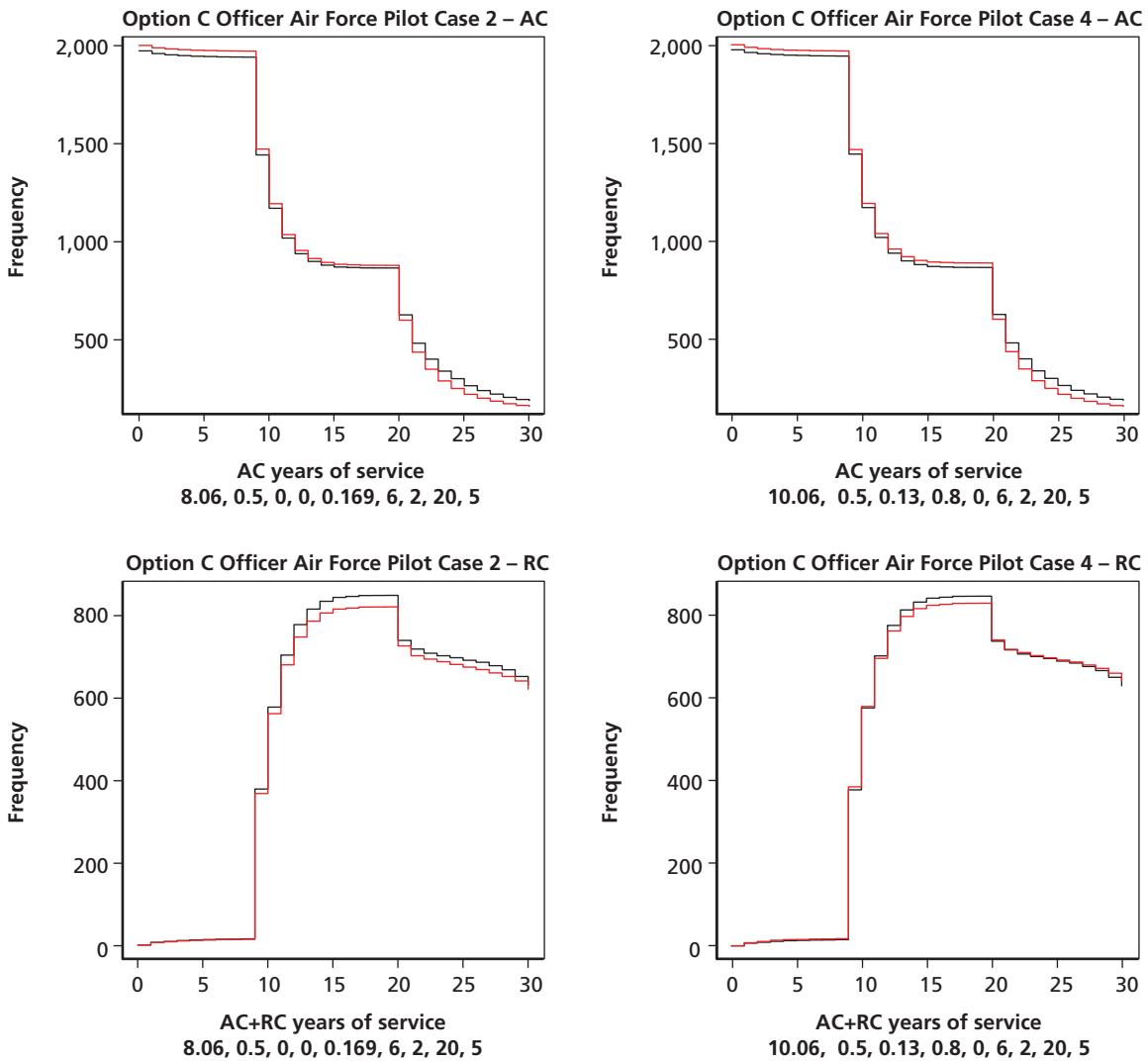


Figure B.16
Air Force Rated Officer Retention, Option D (black = baseline, red = proposal)

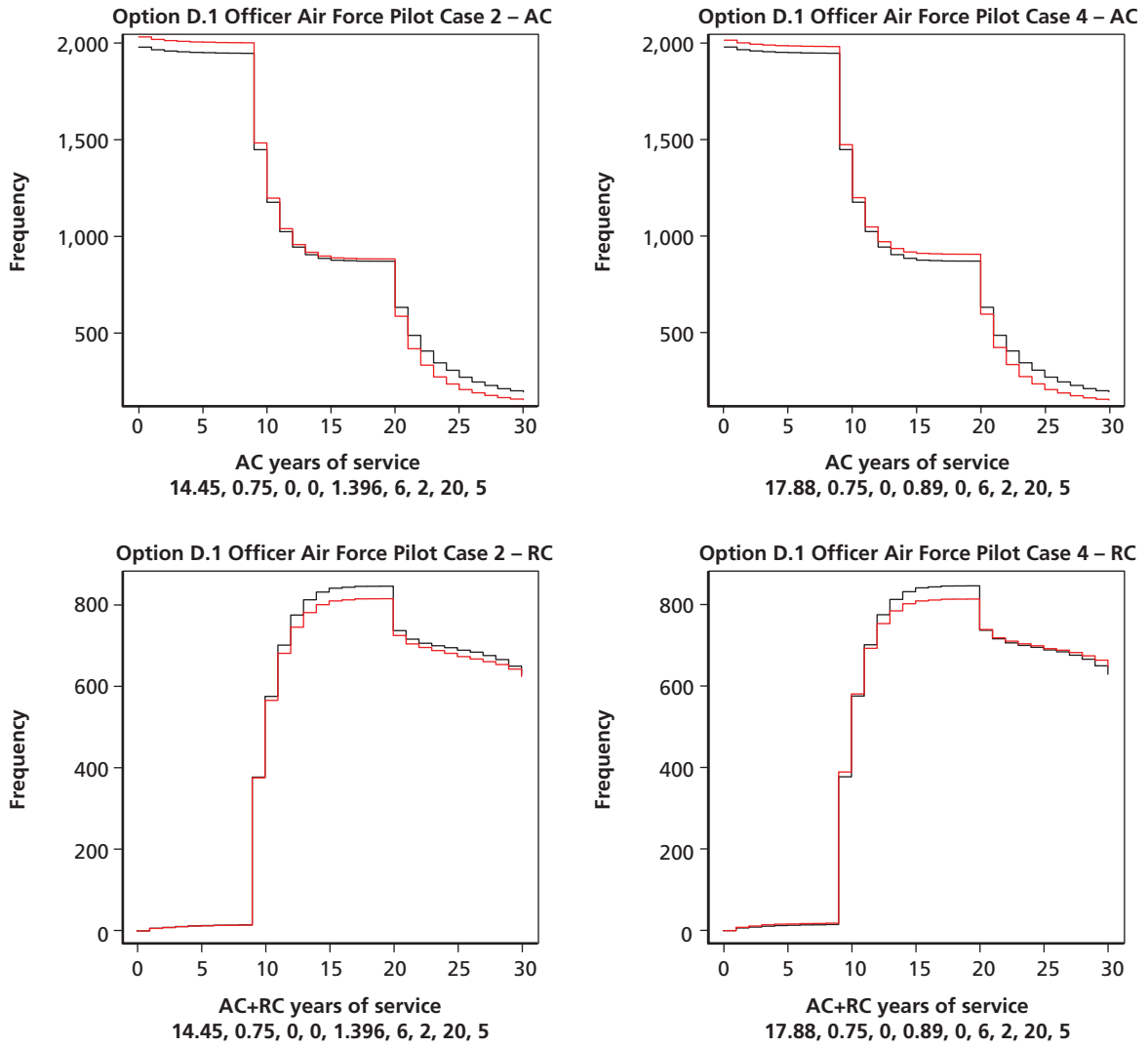


Figure B.17
Air Force Nonrated Officer Retention, Option A (black = baseline, red = proposal)

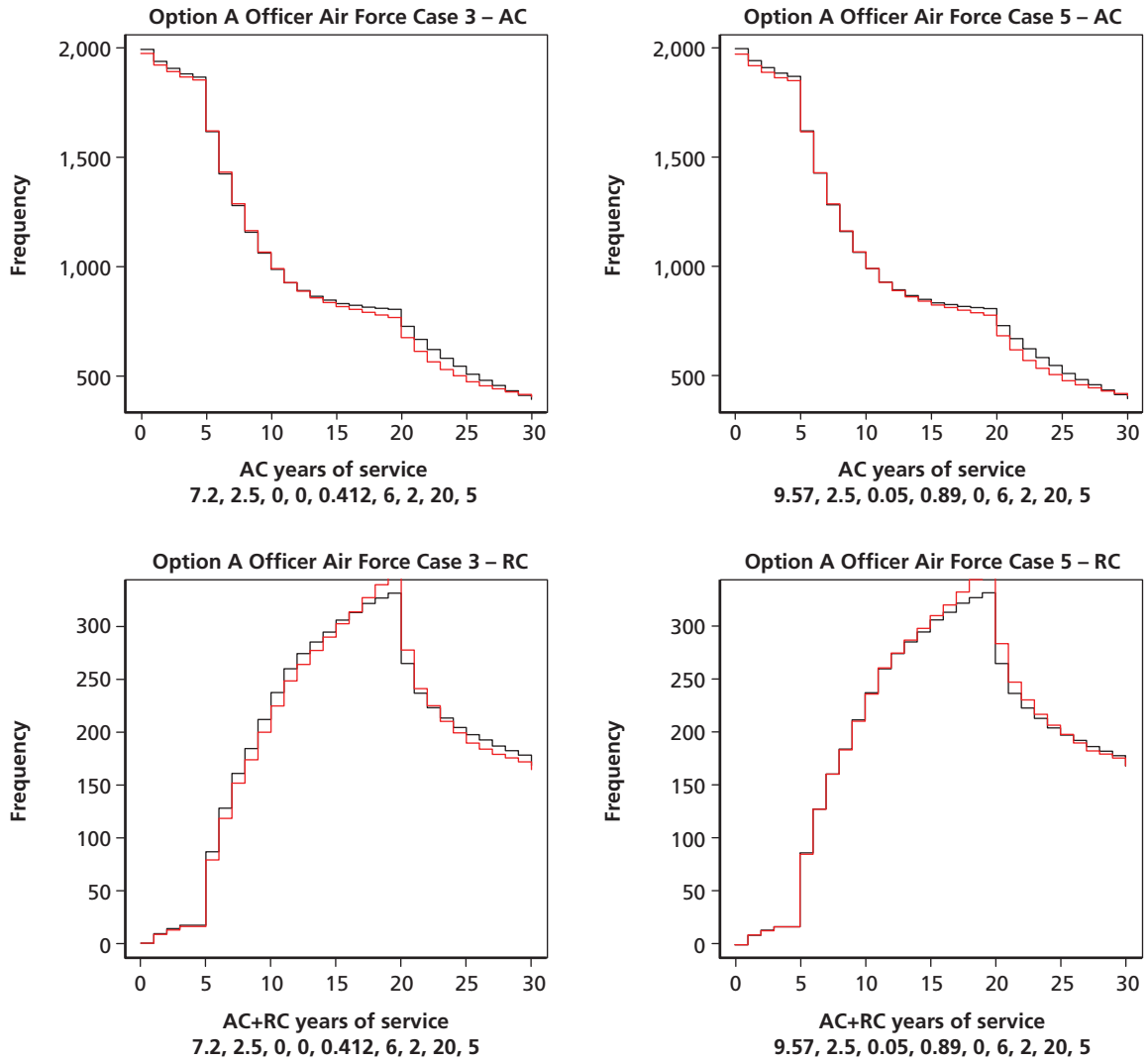


Figure B.18
Air Force Nonrated Officer Retention, Option B (black = baseline, red = proposal)

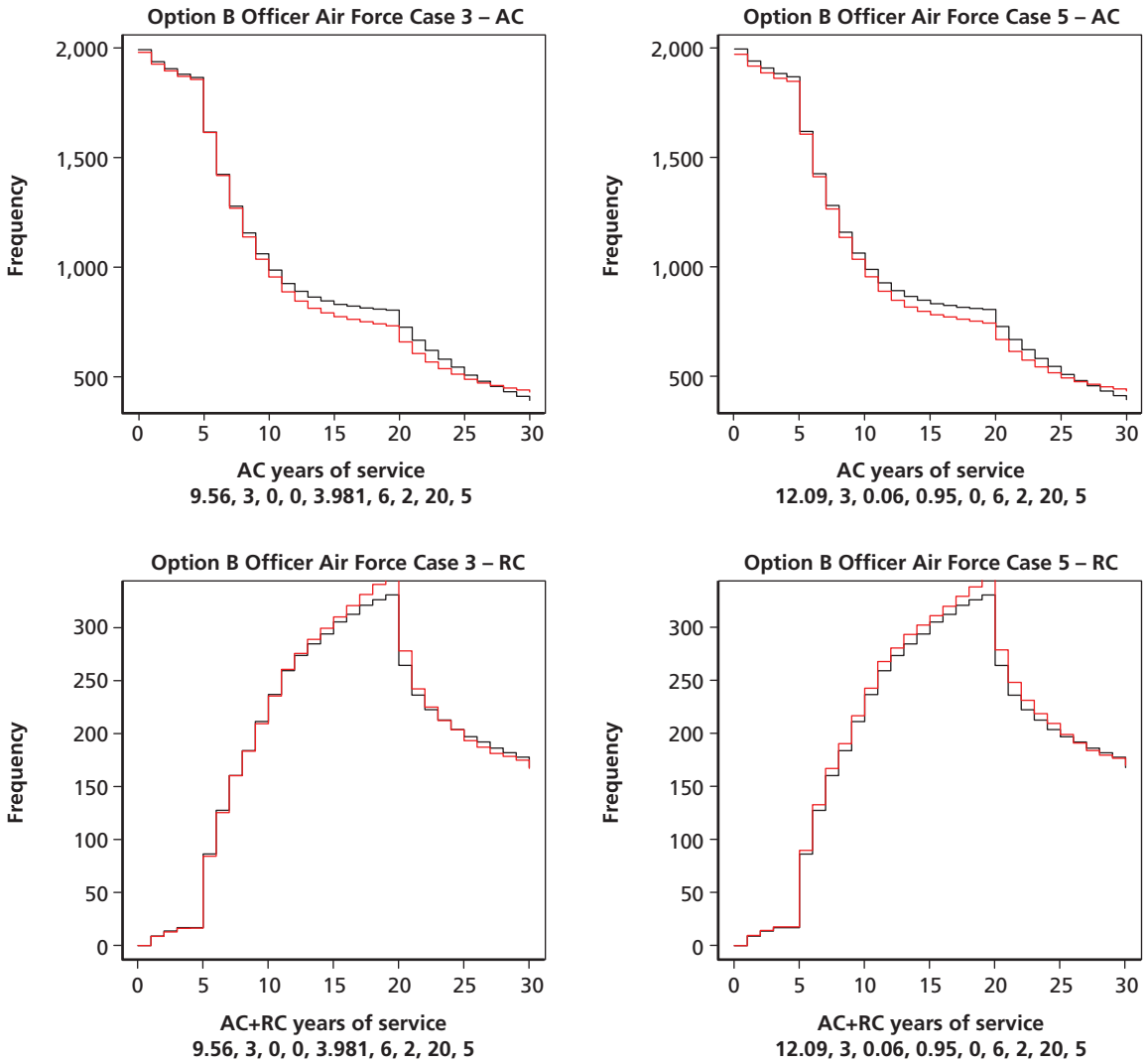


Figure B.19
Air Force Nonrated Officer Retention, Option C (black = baseline, red = proposal)

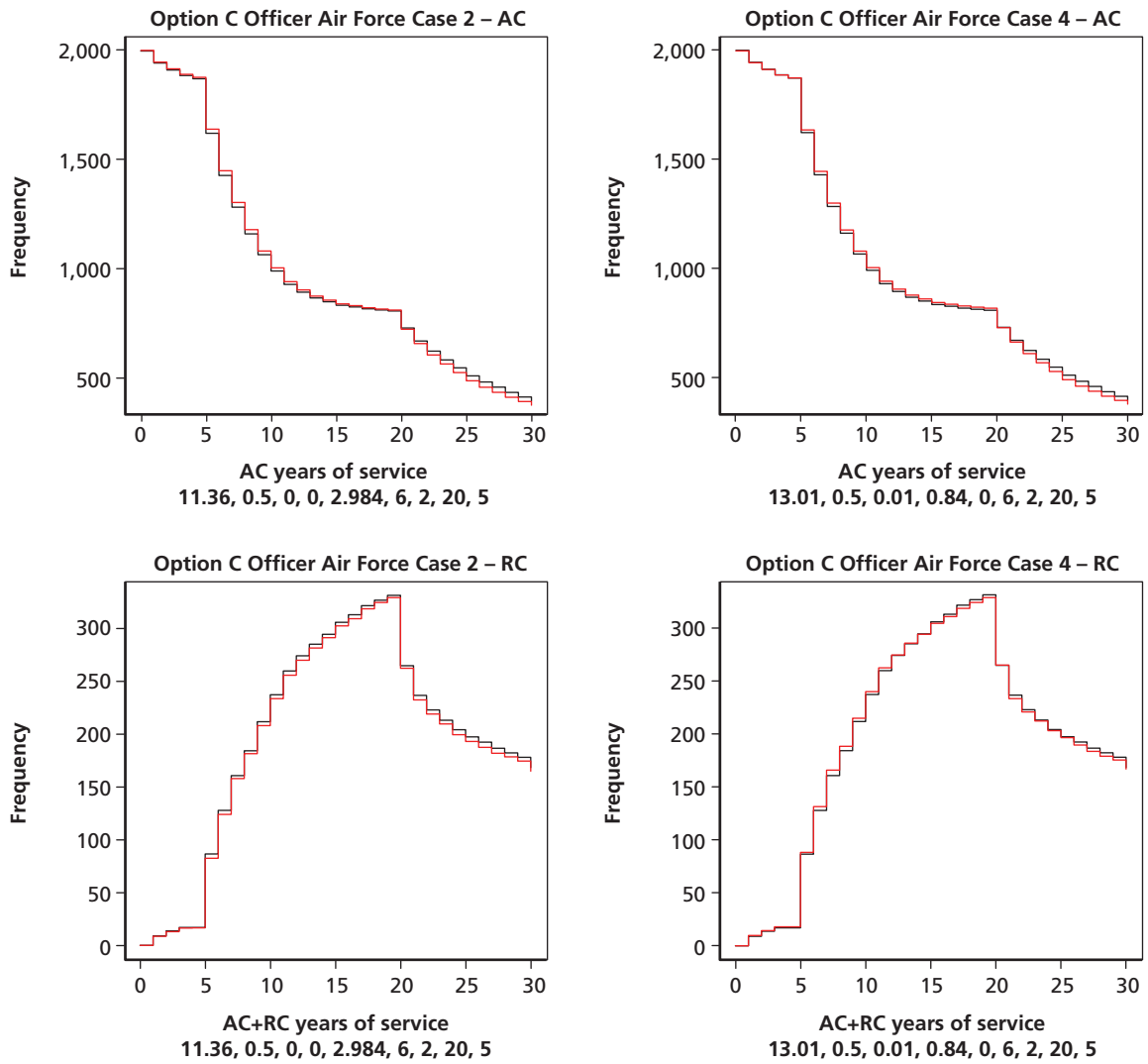


Figure B.20
Air Force Nonrated Officer Retention, Option D (black = baseline, red = proposal)

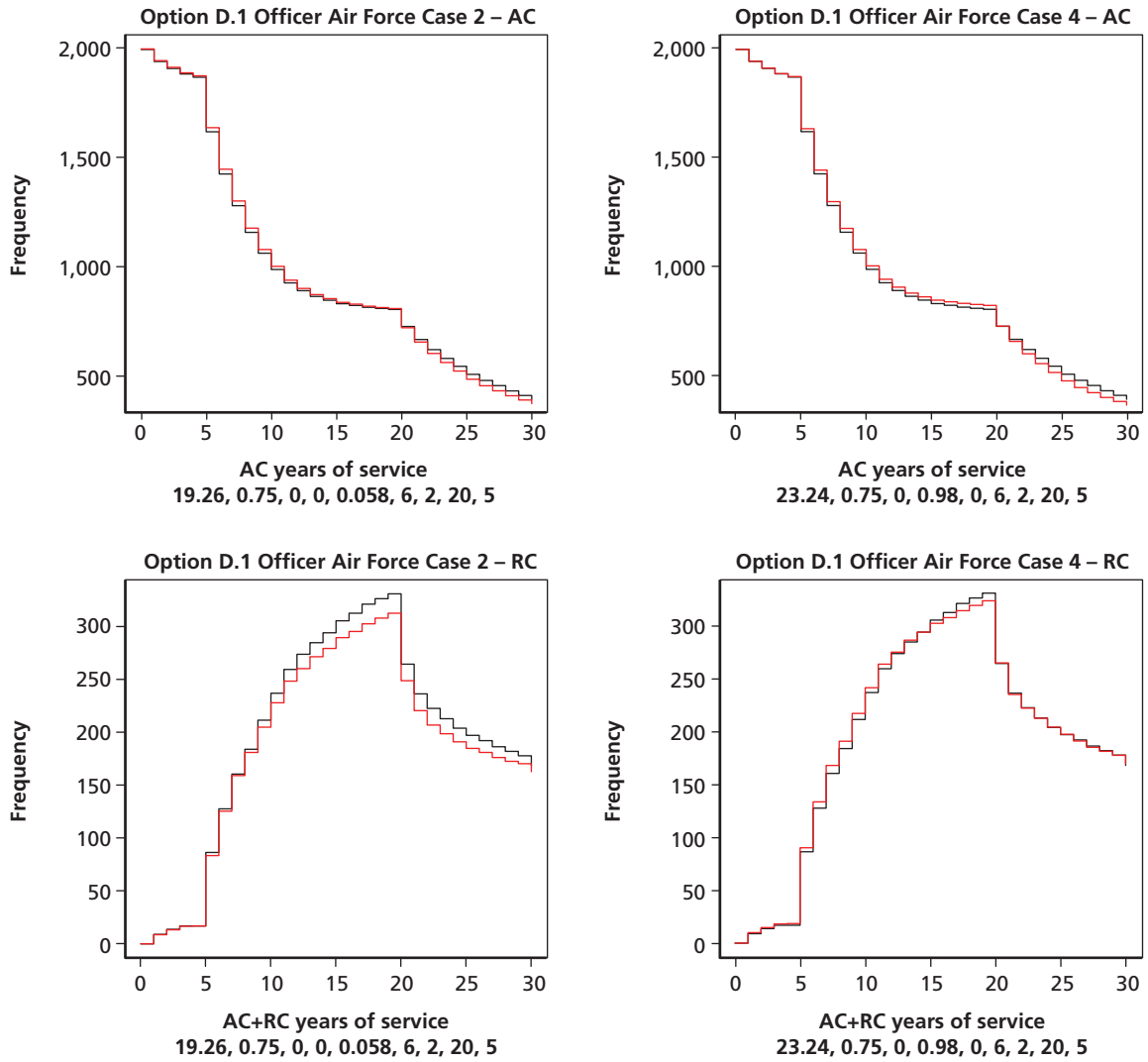


Figure B.21
Marine Corps Enlisted Retention, Option A (black = baseline, red = proposal)

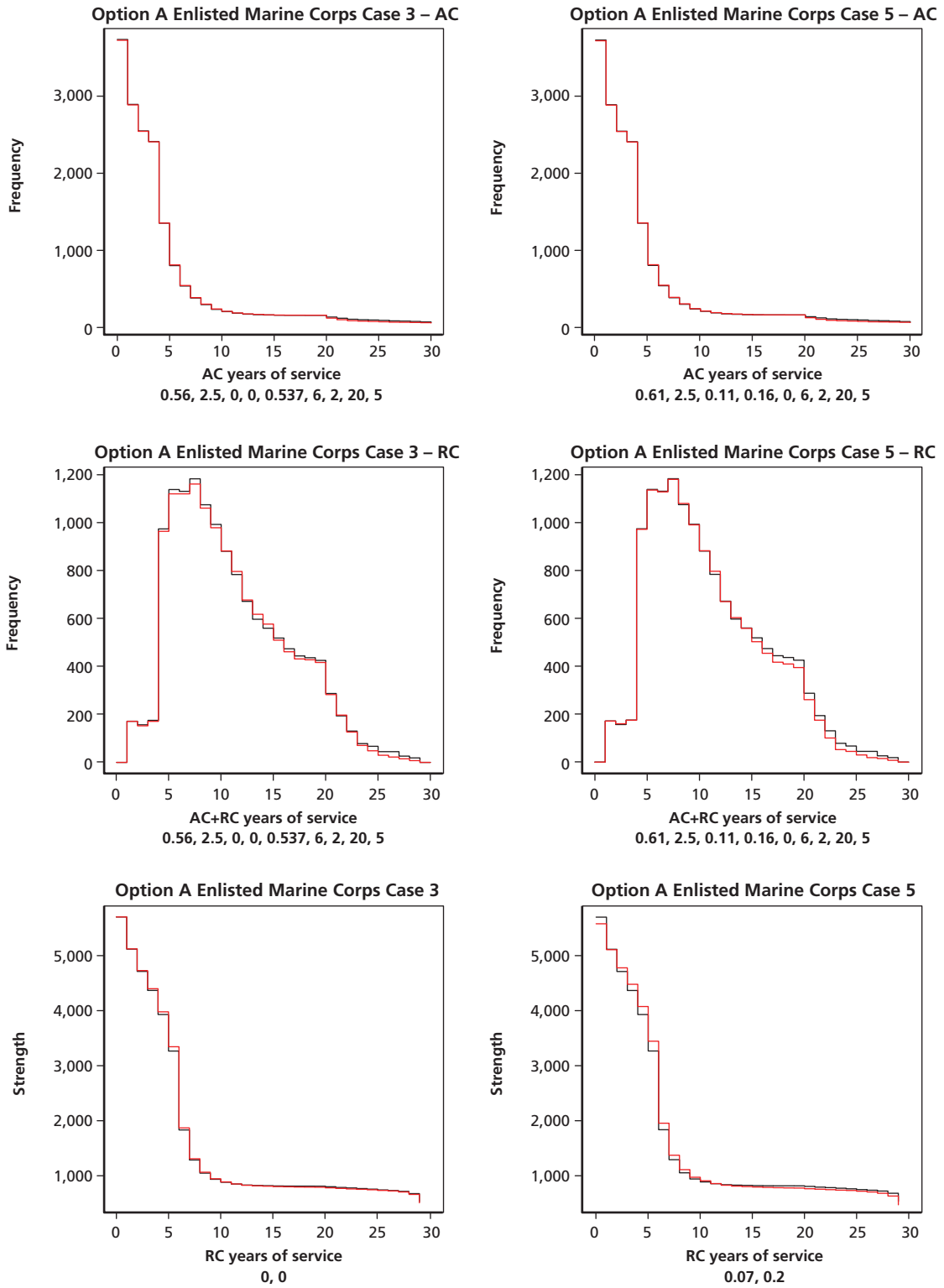


Figure B.22
Marine Corps Enlisted Retention, Option B (black = baseline, red = proposal)

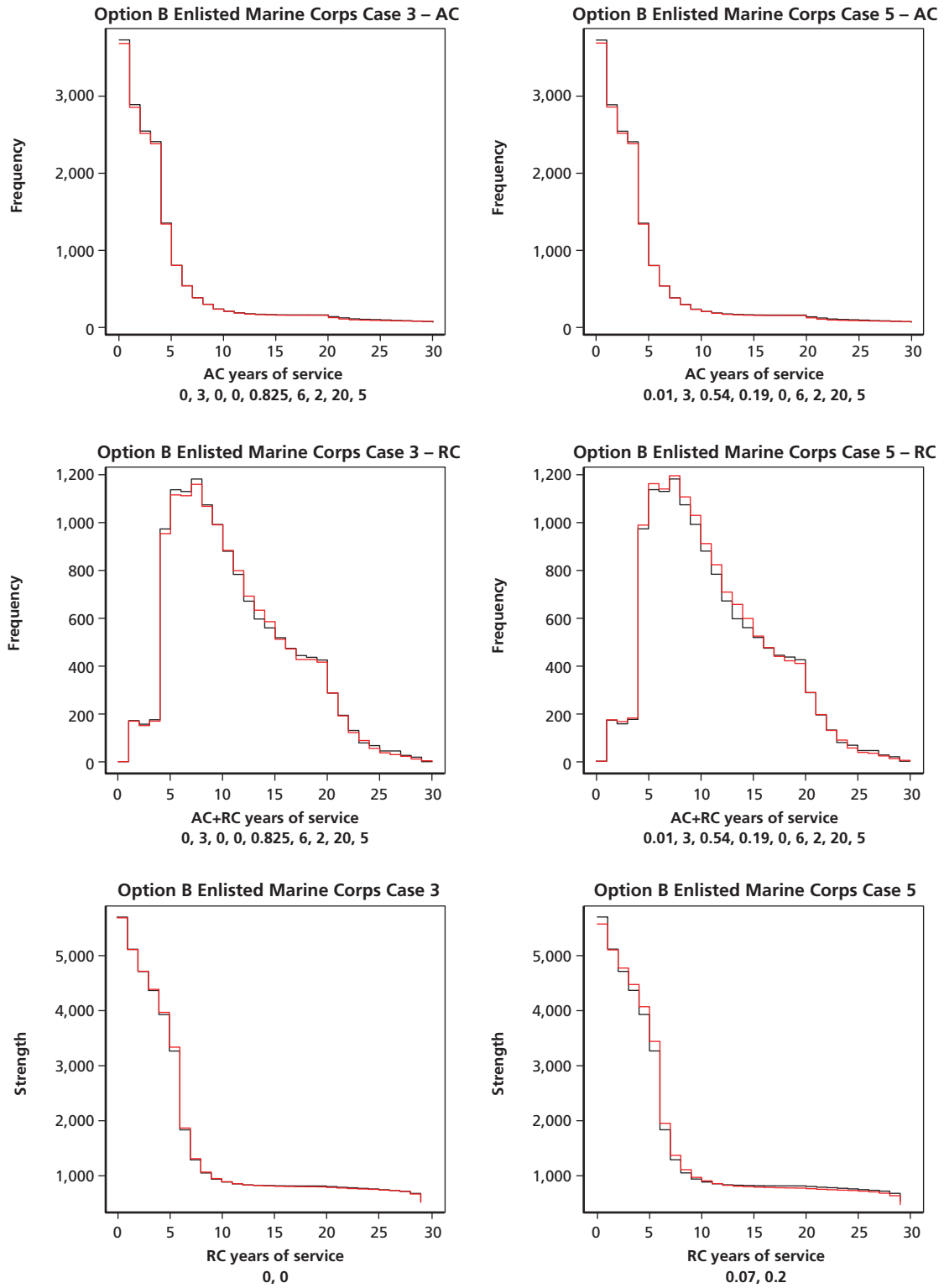


Figure B.23
Marine Corps Enlisted Retention, Option C (black = baseline, red = proposal)

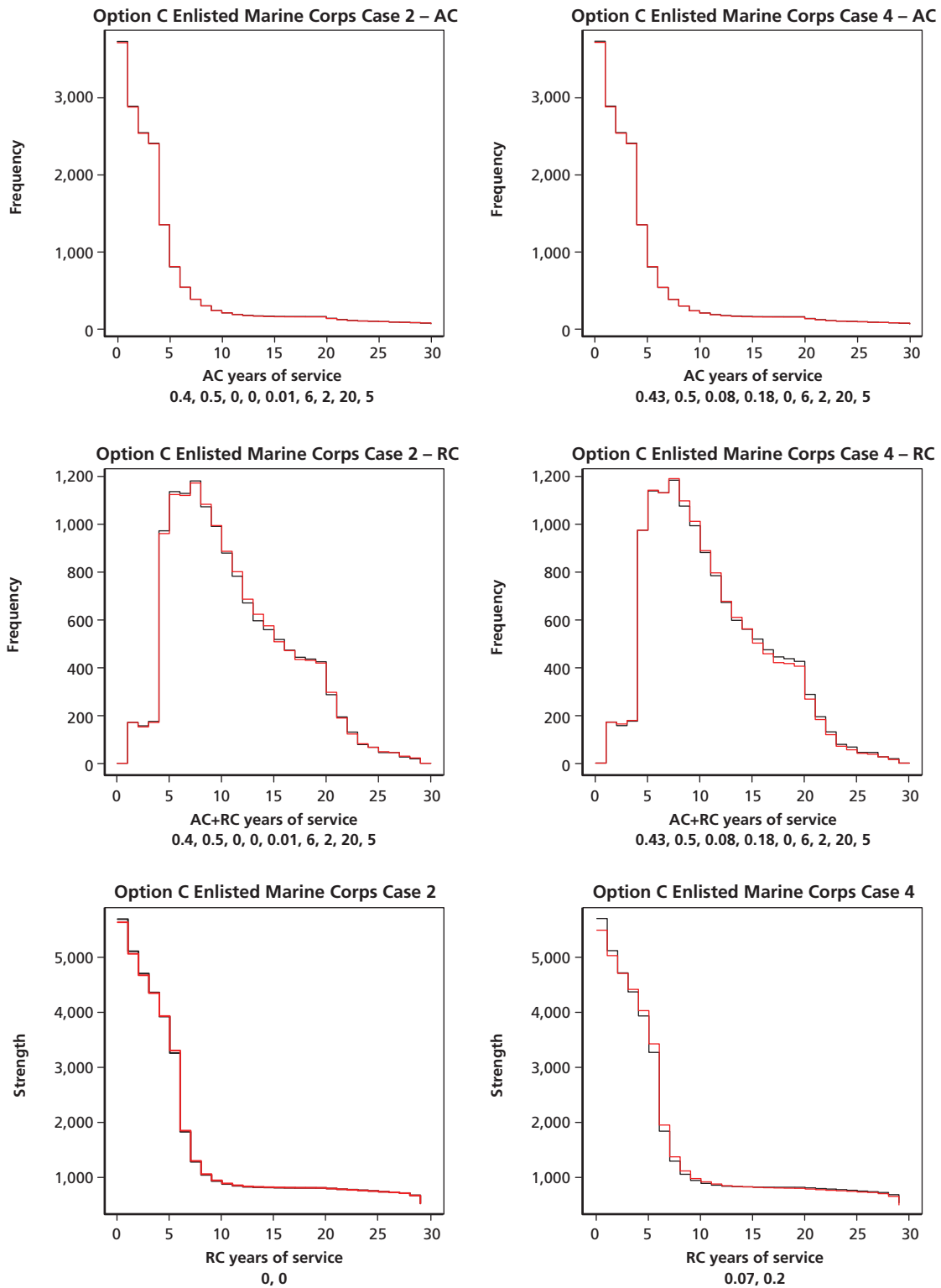


Figure B.24
Marine Corps Enlisted Retention, Option D (black = baseline, red = proposal)

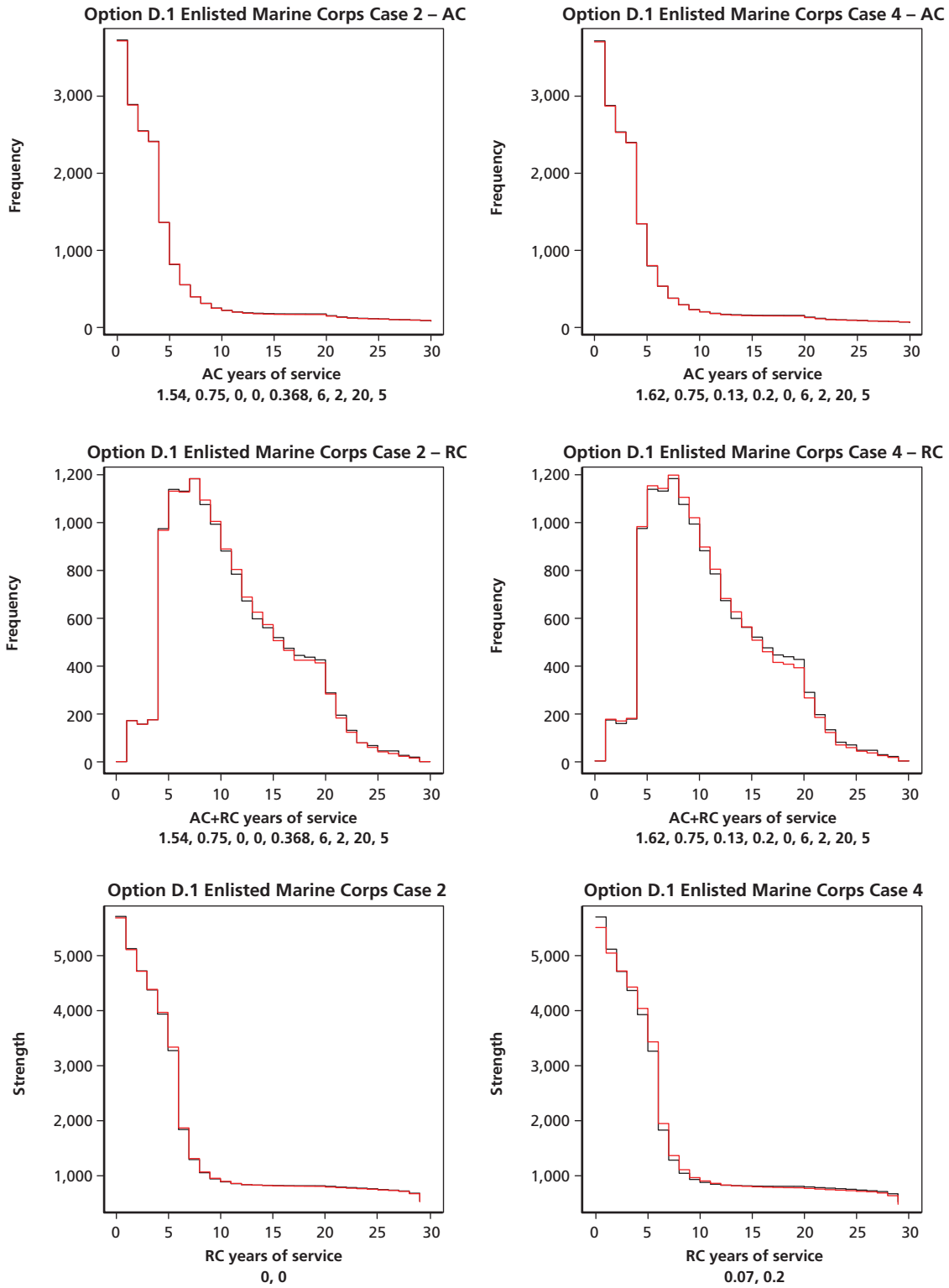


Figure B.25
Marine Corps Officer Retention, Option A (black = baseline, red = proposal)

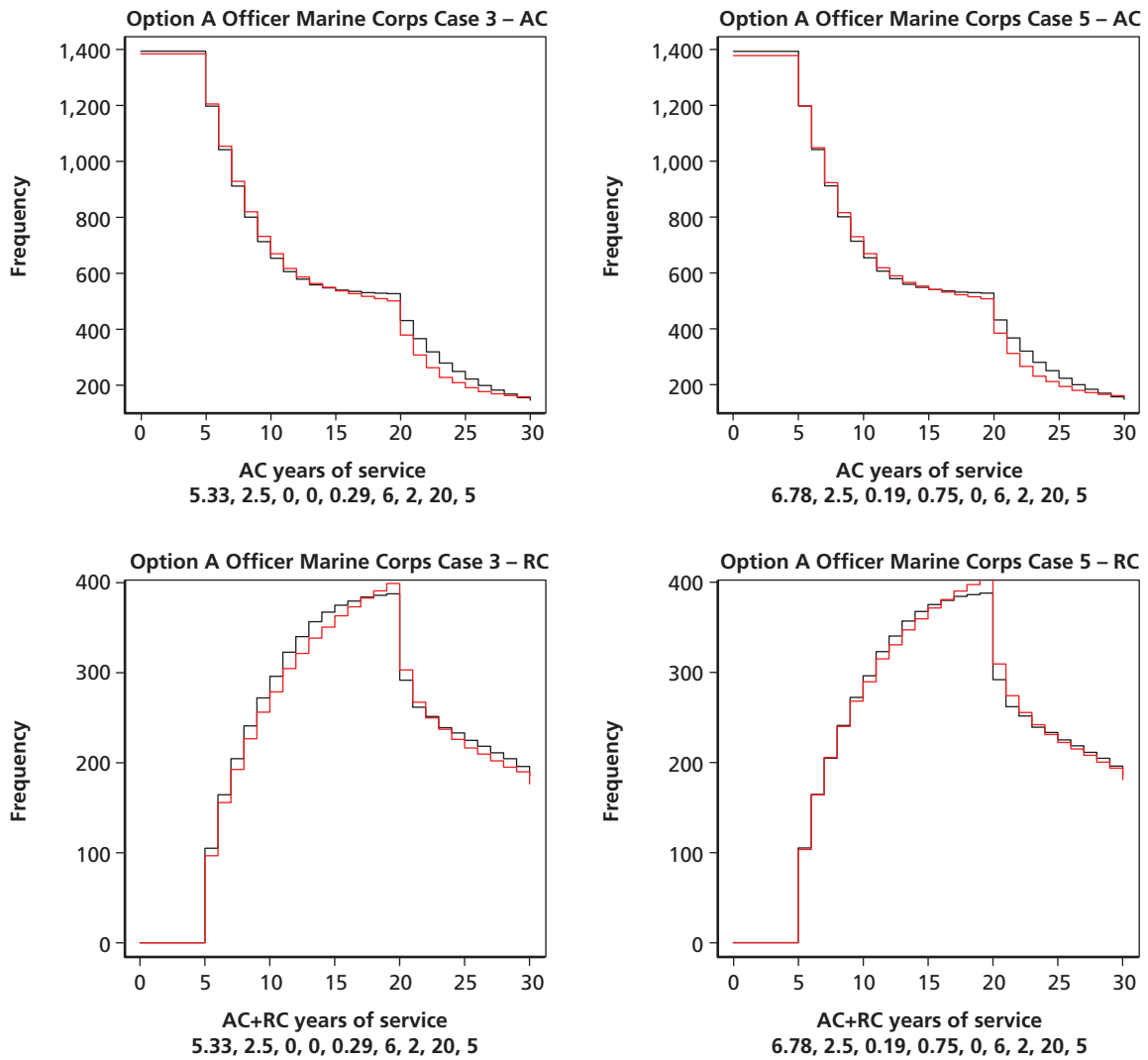


Figure B.26
Marine Corps Officer Retention, Option B (black = baseline, red = proposal)

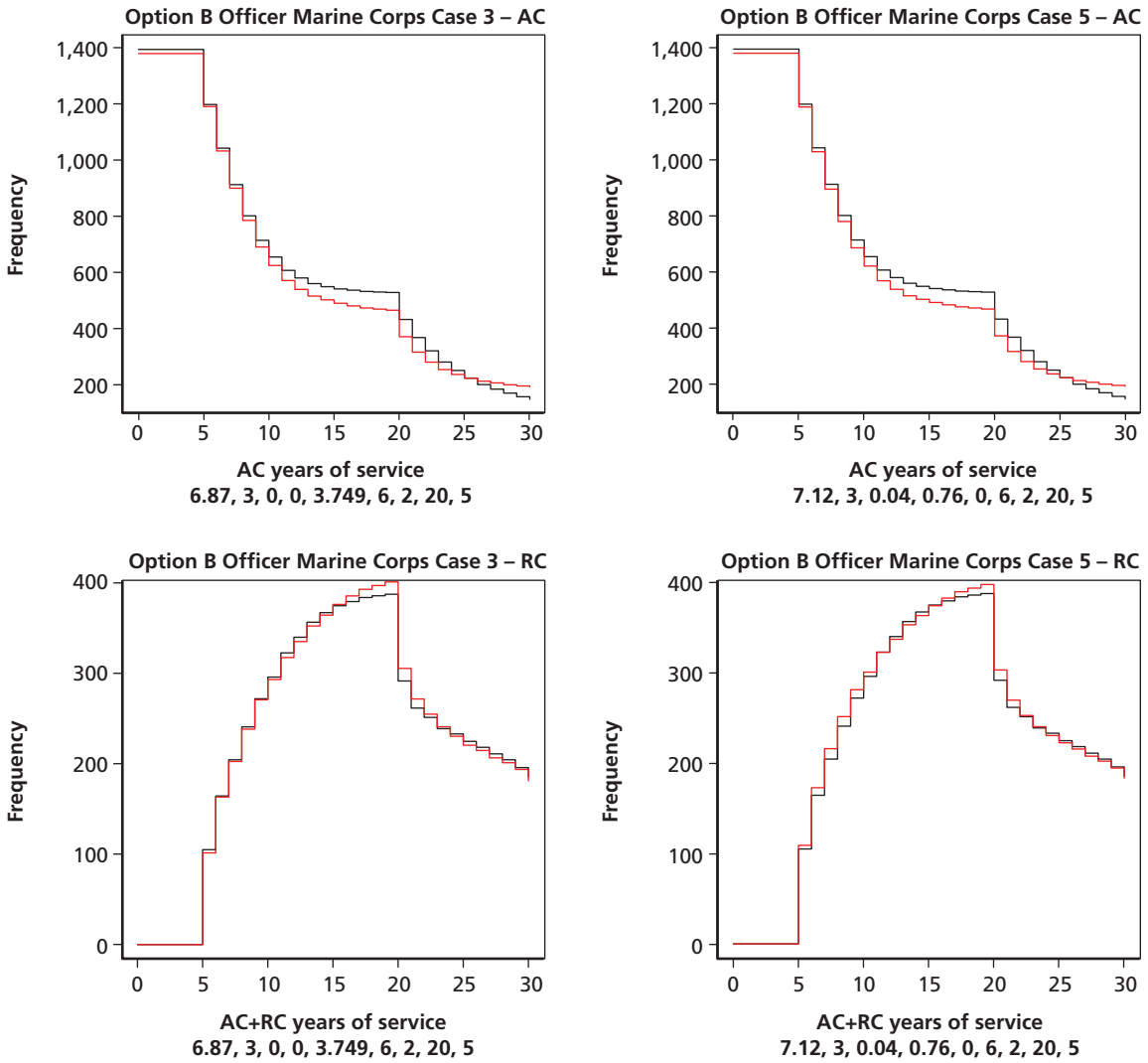


Figure B.27
Marine Corps Officer Retention, Option C (black = baseline, red = proposal)

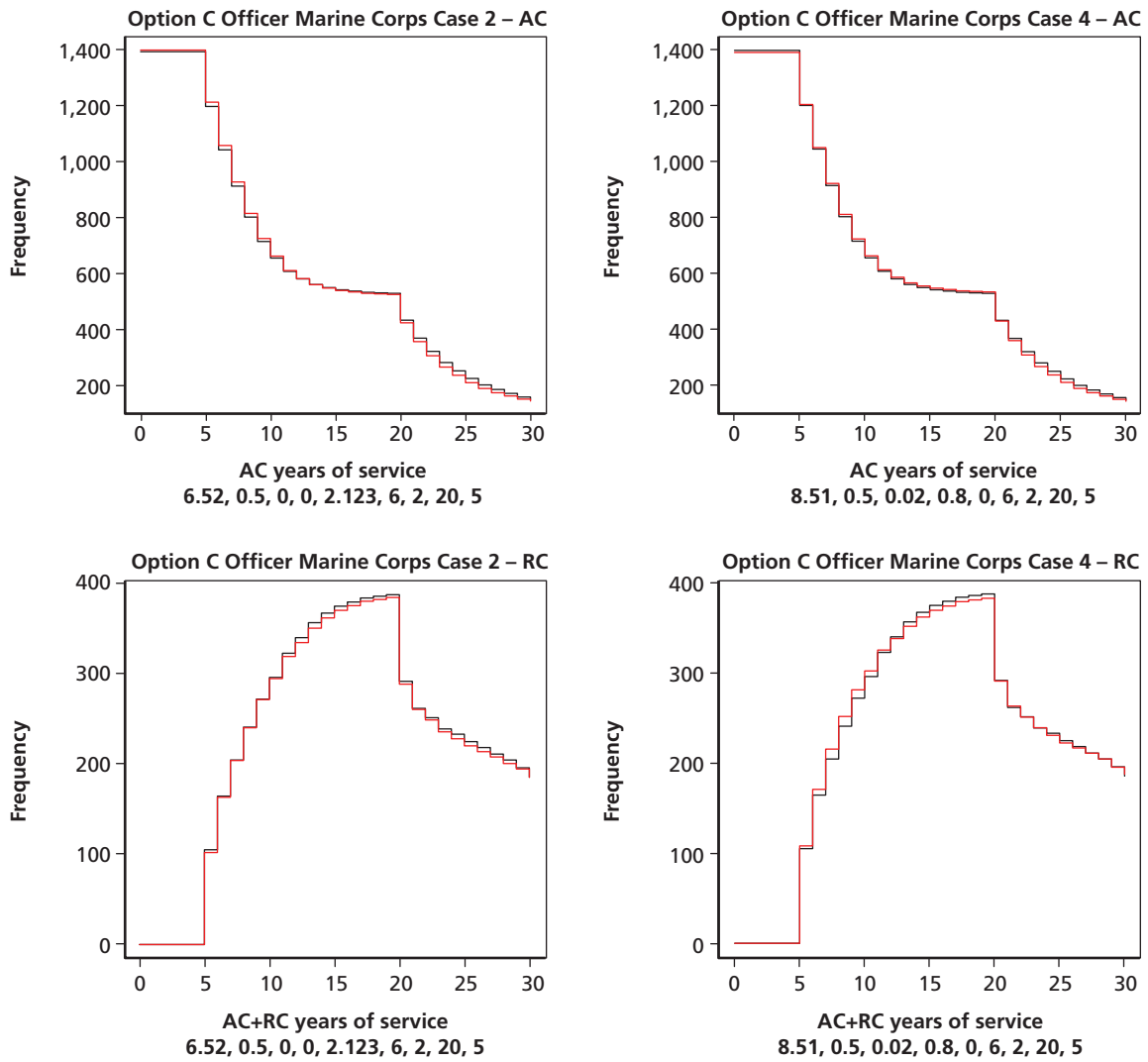
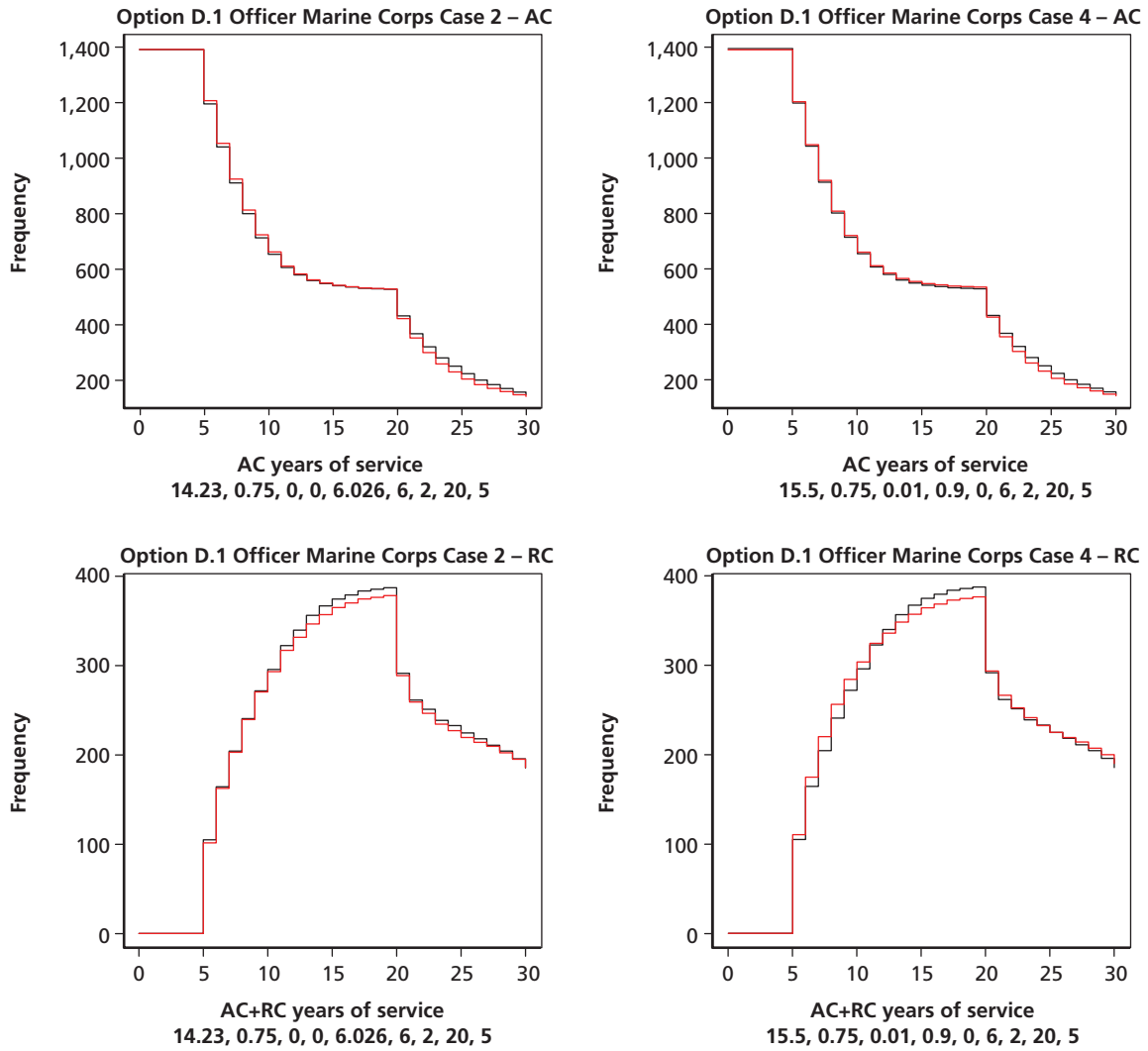


Figure B.28
Marine Corps Officer Retention, Option D (black = baseline, red = proposal)



Additional Results for the Transition Period

Figure C.1a
Percentage of Army Enlisted Personnel Who Opt In Under the Concept I Alternatives

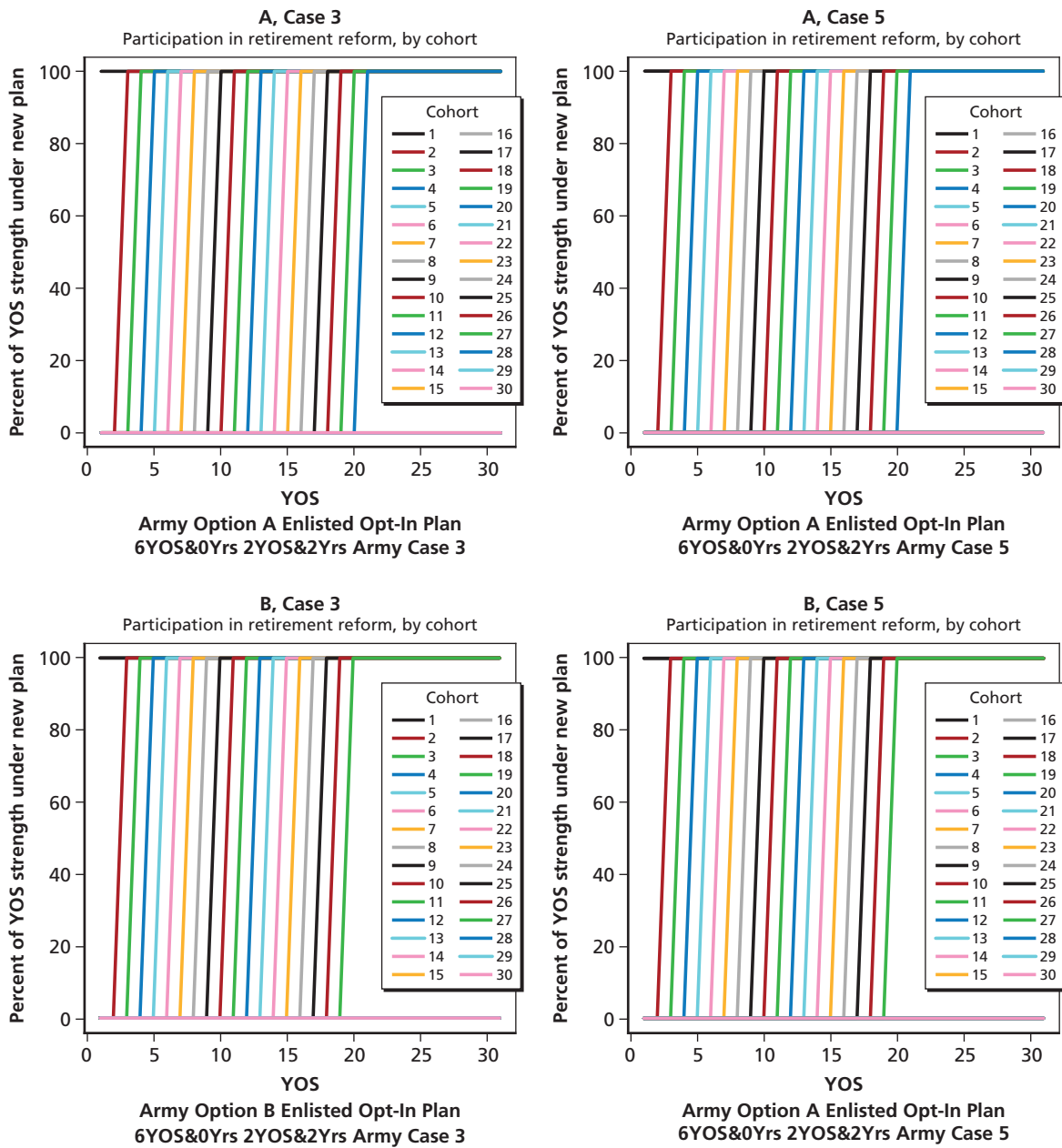


Figure C.1b
Percentage of Army Enlisted Personnel Who Opt In Under the Concept II Alternatives

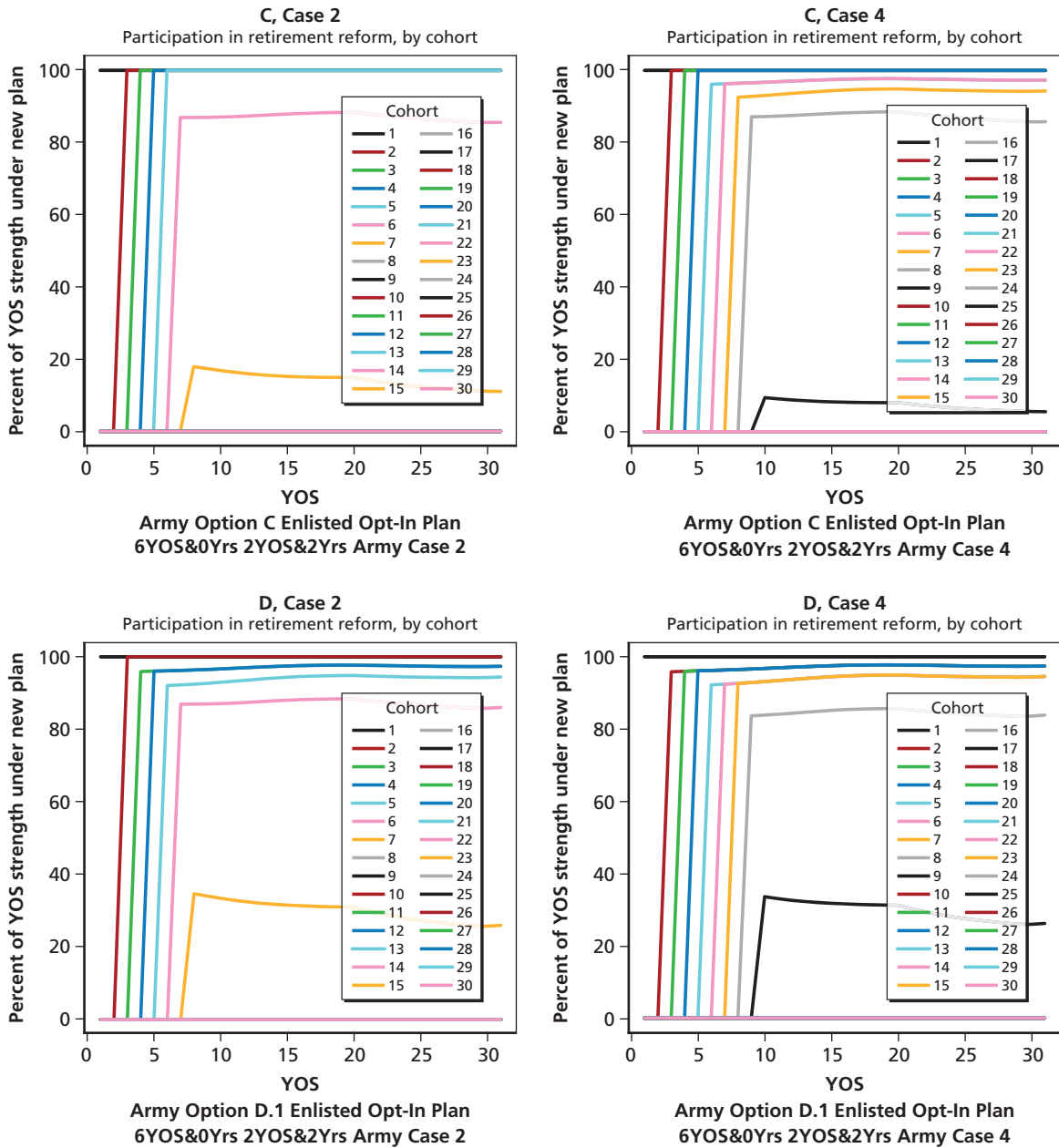


Figure C.2a
Percentage of Army Officers Who Opt In Under the Concept I Alternatives

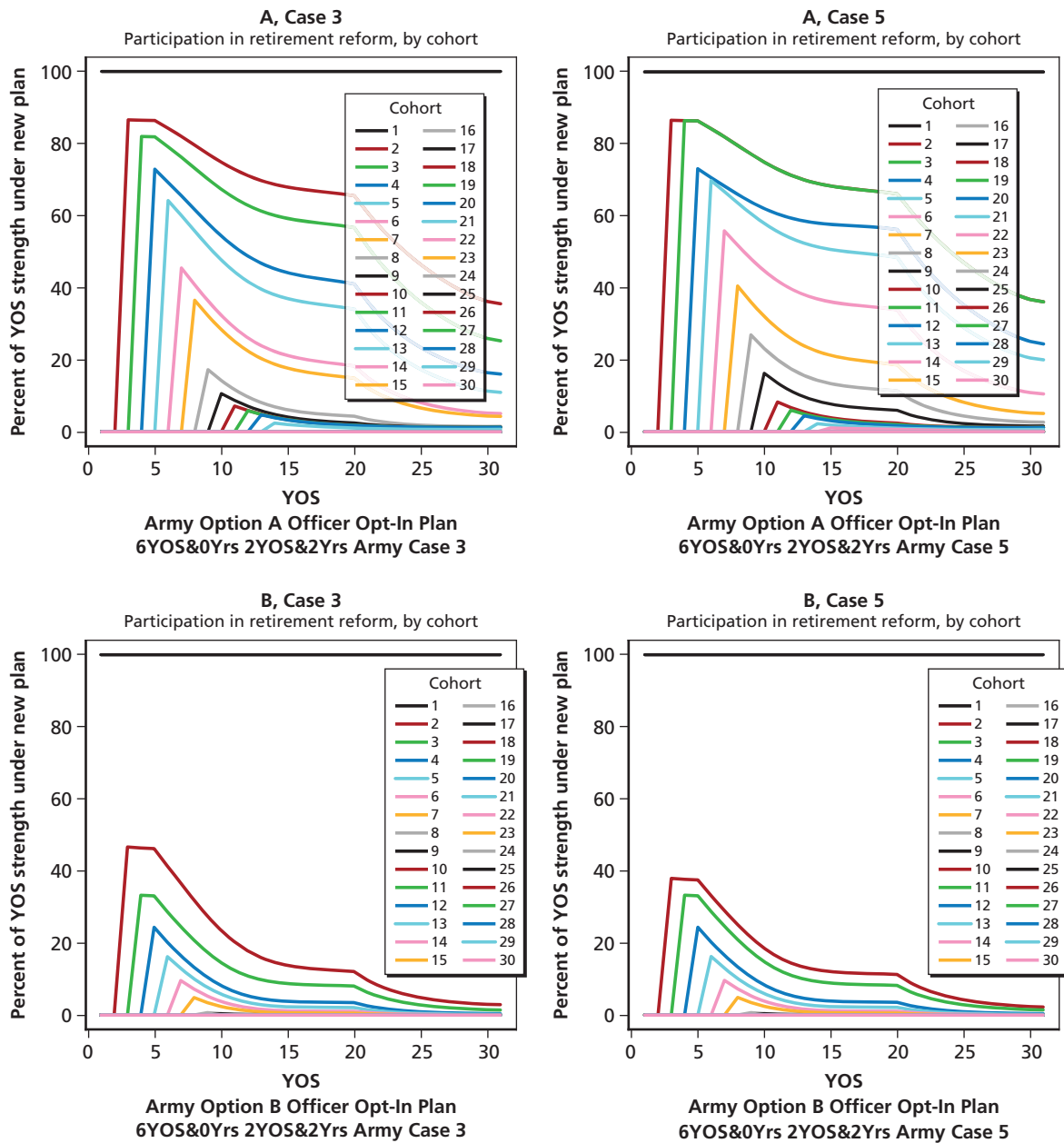


Figure C.2b
Percentage of Army Officers Who Opt In Under the Concept II Alternatives

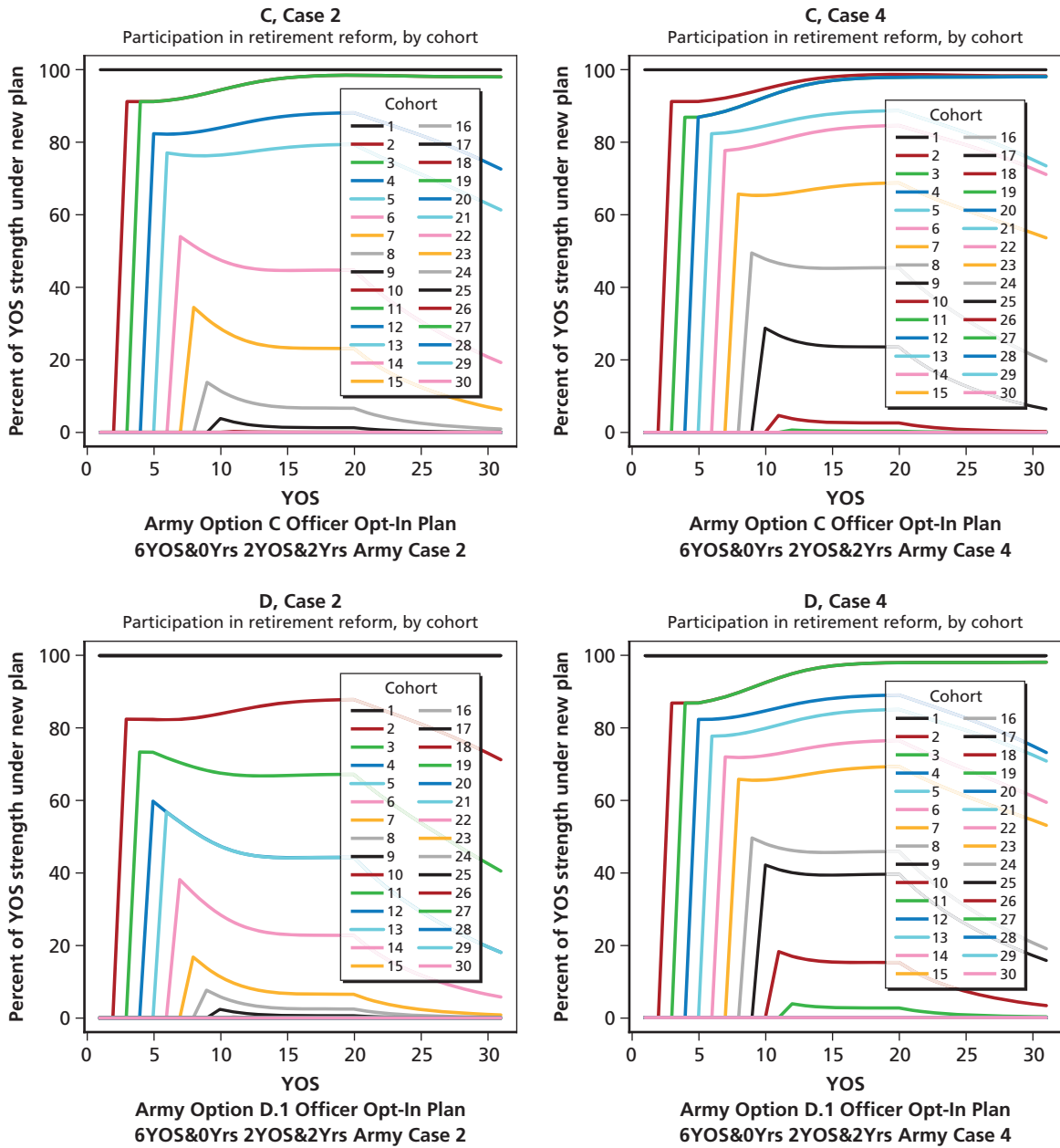


Figure C.3a
Percentage of Navy Enlisted Personnel Who Opt In Under the Concept I Alternatives

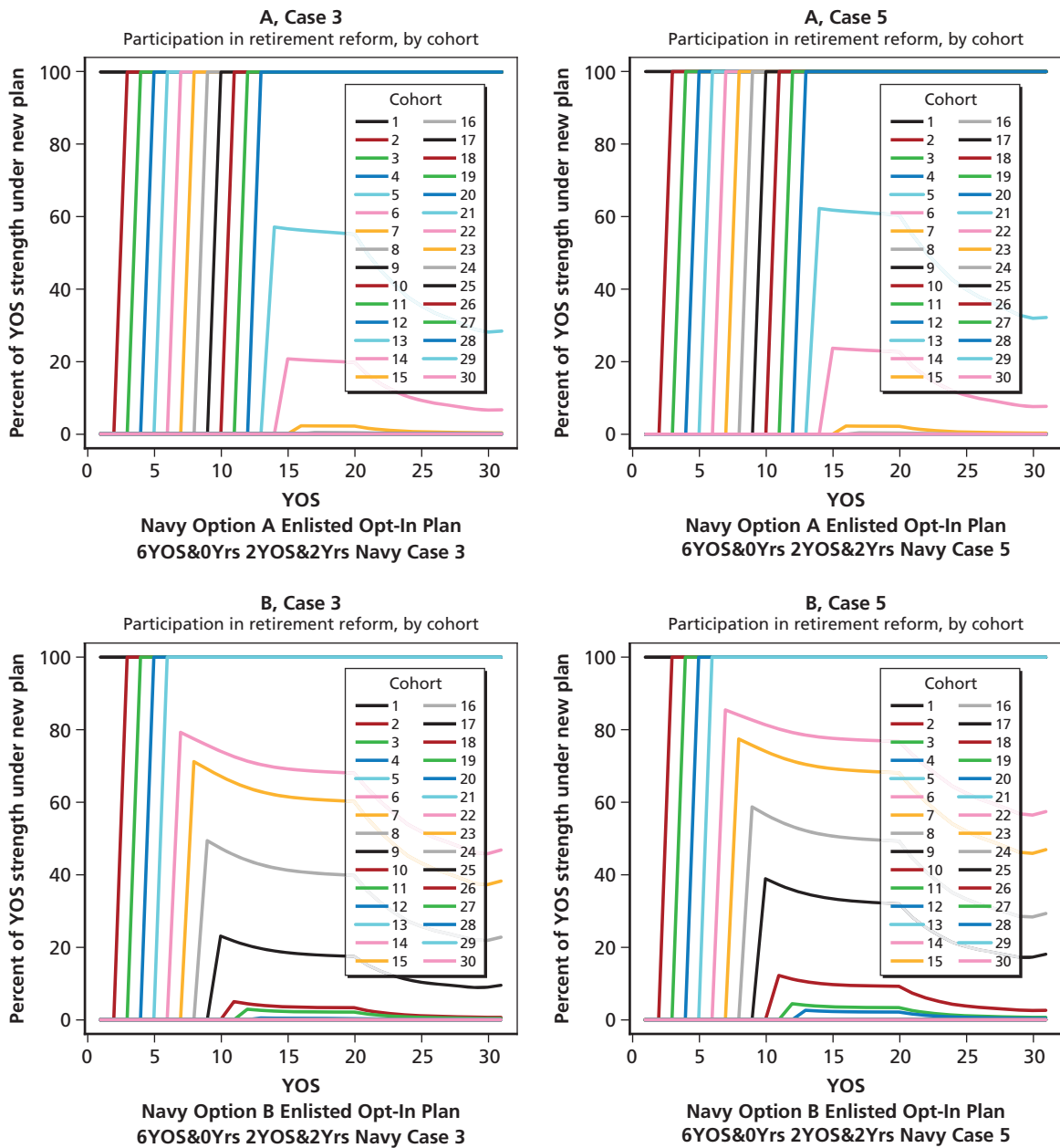


Figure C.3b
Percentage of Navy Enlisted Personnel Who Opt In Under the Concept II Alternatives

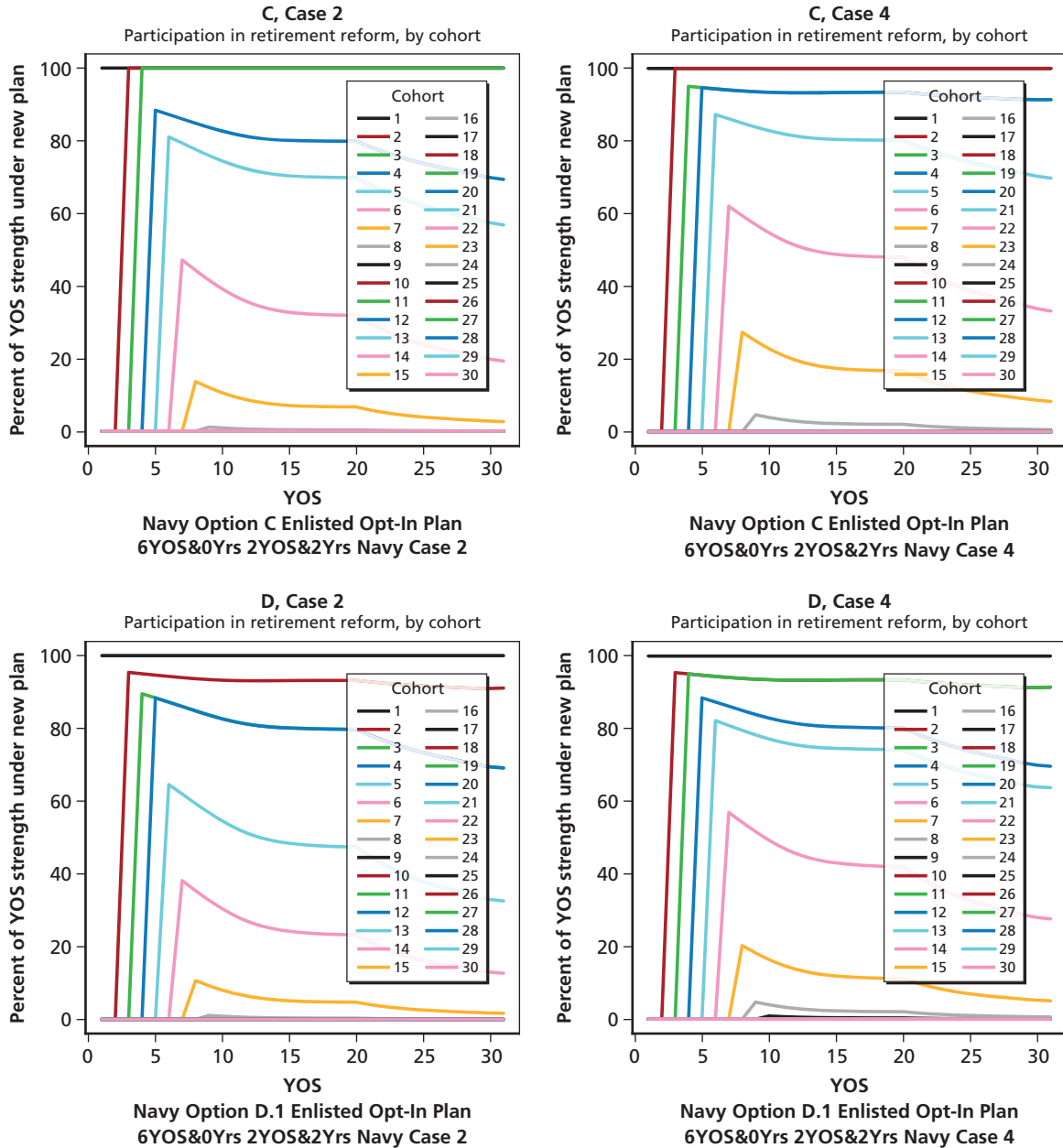


Figure C.4a
Percentage of Navy Officers Who Opt In Under the Concept I Alternatives

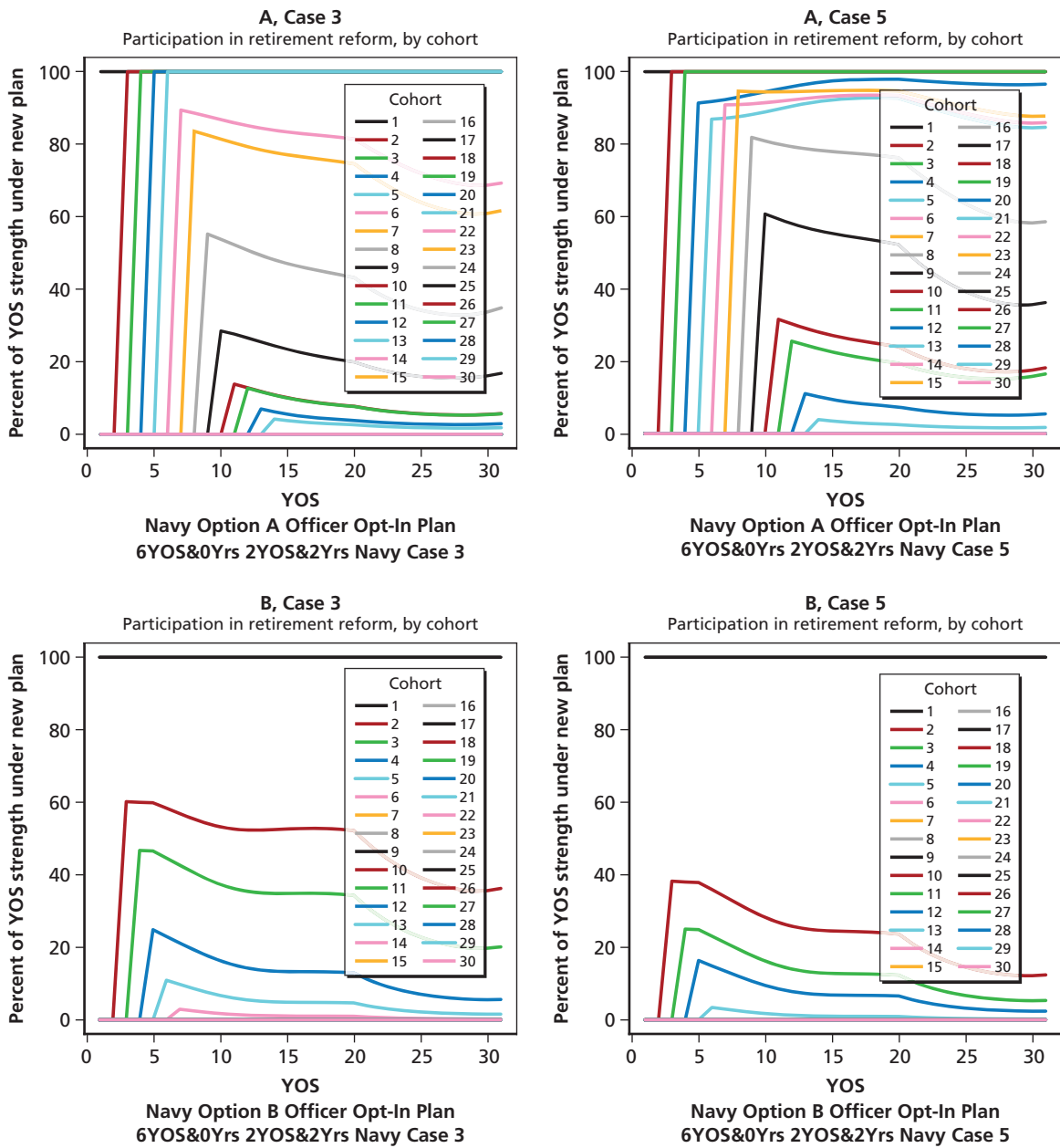


Figure C.4b
Percentage of Navy Officers Who Opt In Under the Concept II Alternatives

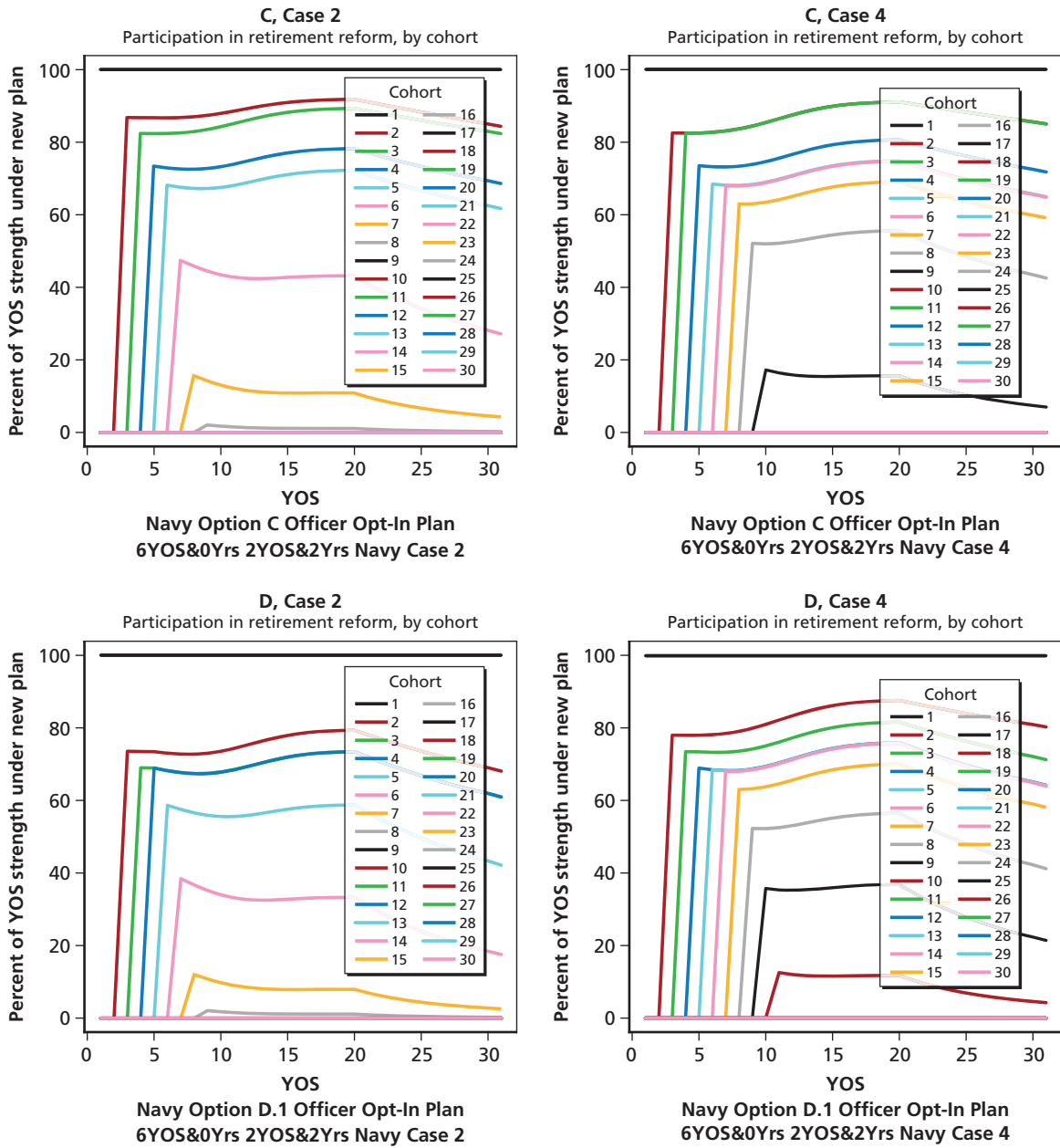


Figure C.5a
Percentage of Air Force Enlisted Personnel Who Opt In Under the Concept I Alternatives

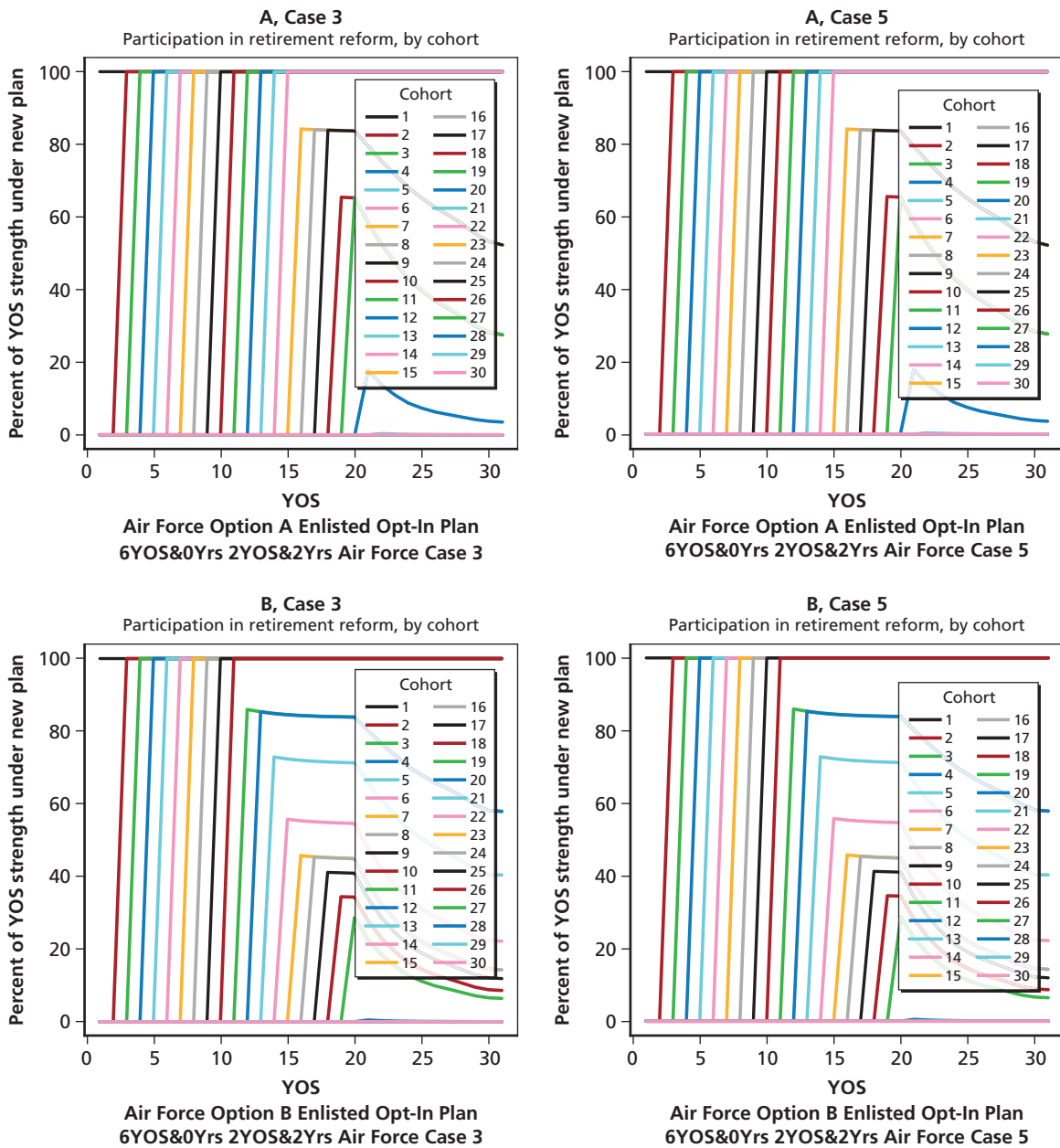


Figure C.5b
Percentage of Air Force Enlisted Personnel Who Opt In Under the Concept II Alternatives

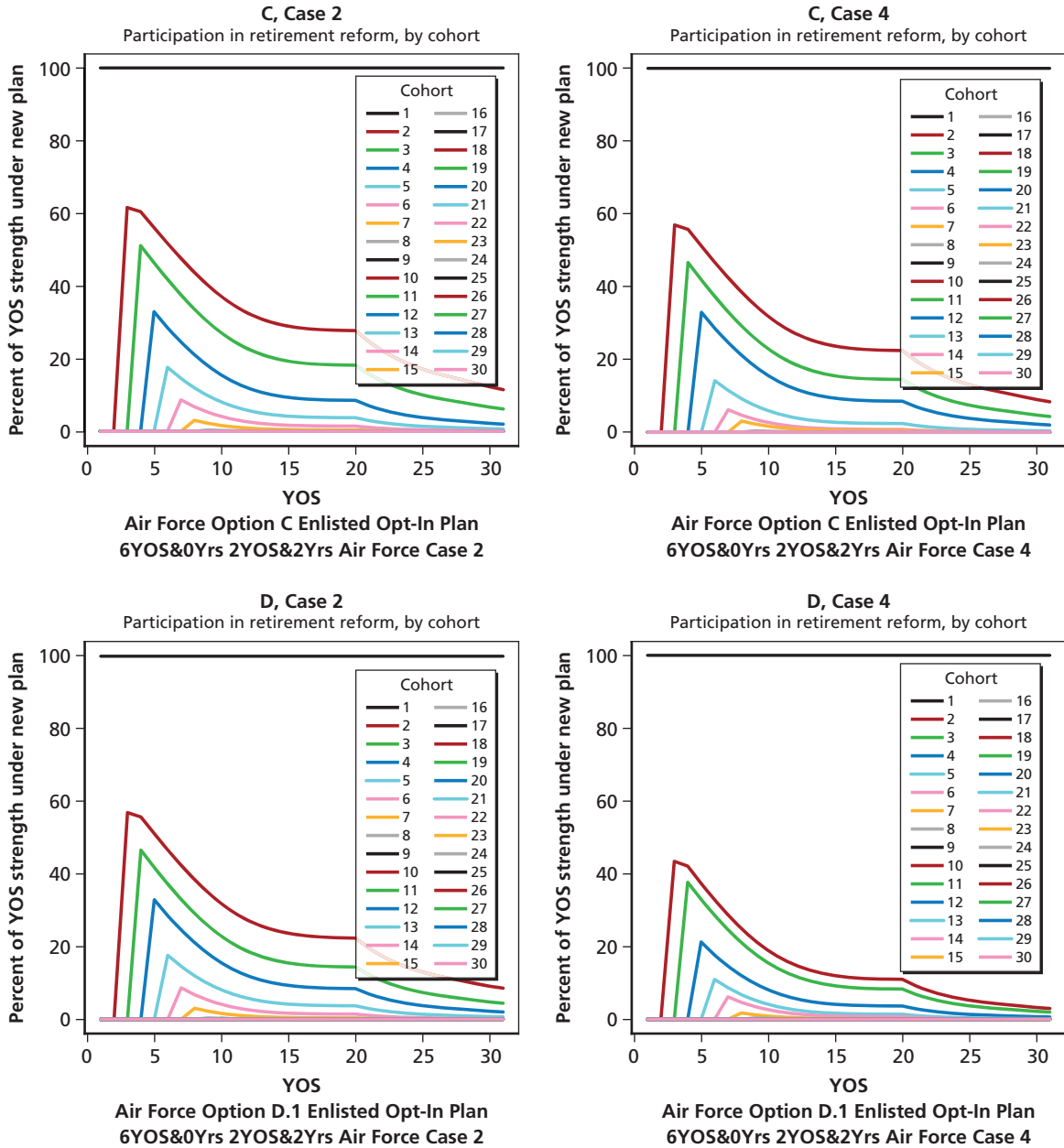


Figure C.6a
Percentage of Nonrated Air Force Officers Who Opt In Under the Concept I Alternatives

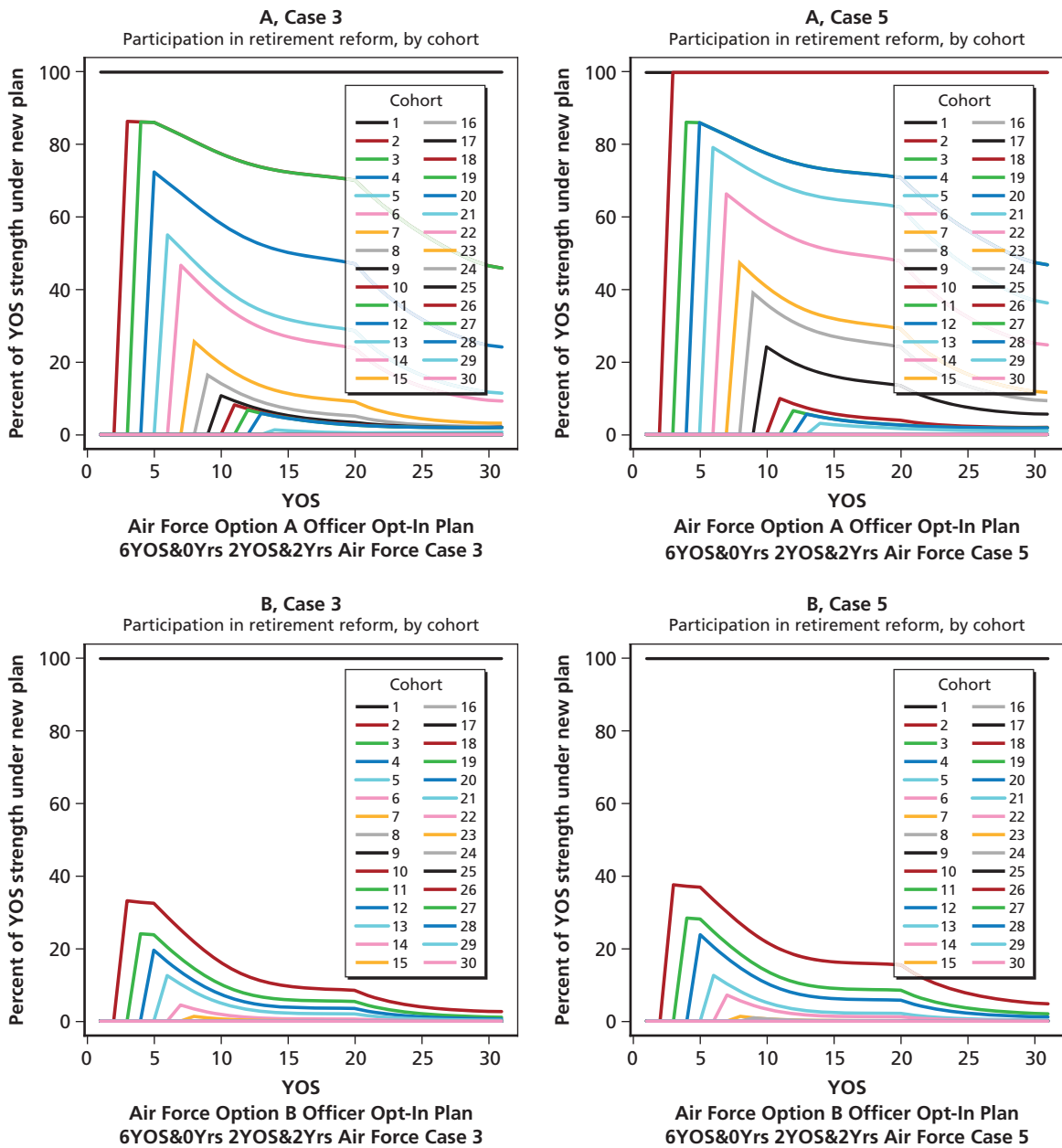


Figure C.6b
Percentage of Nonrated Air Force Officers Who Opt In Under the Concept II Alternatives

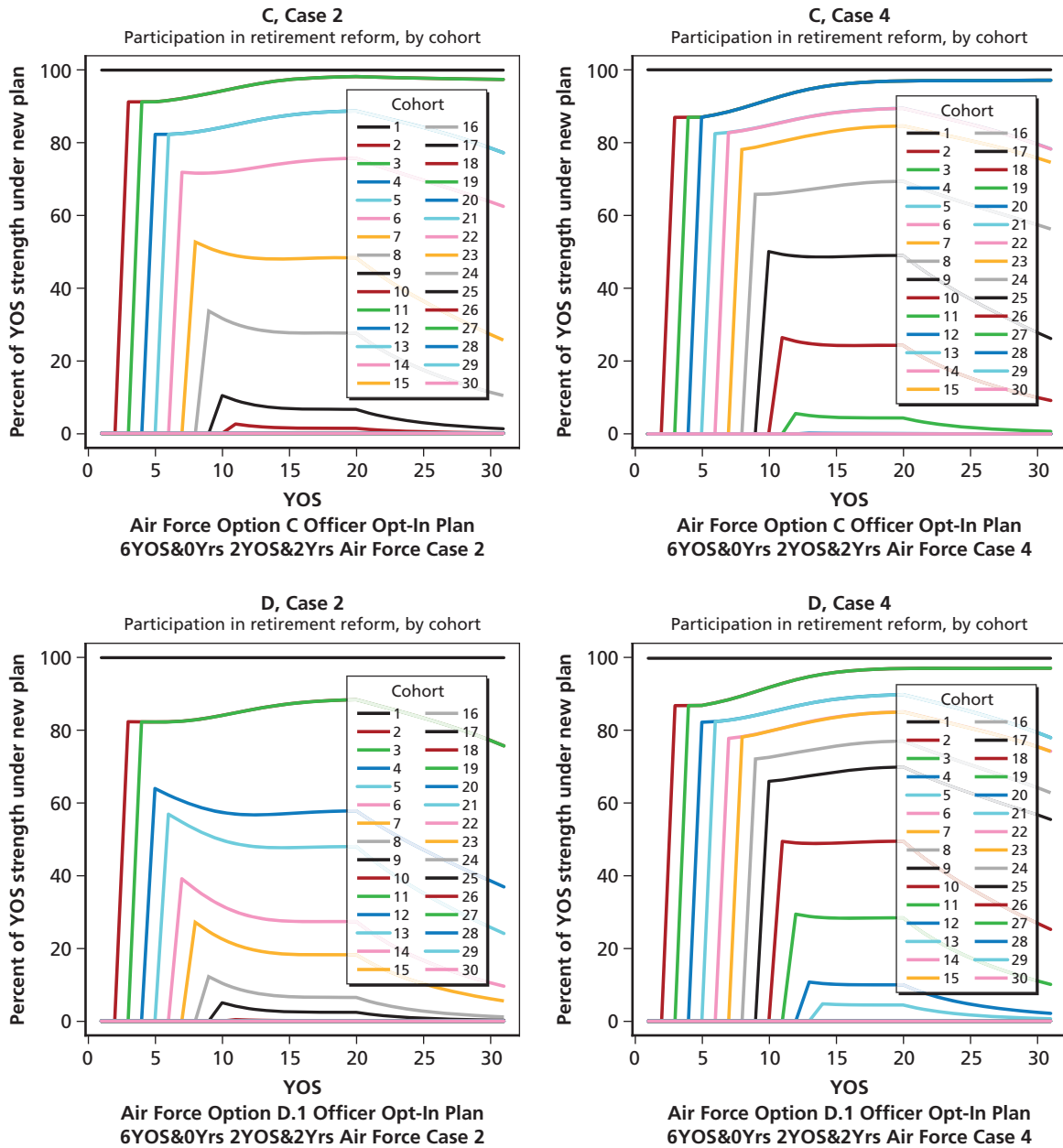


Figure C.7a
Percentage of Marine Corps Enlisted Personnel Who Opt In Under the Concept I Alternatives

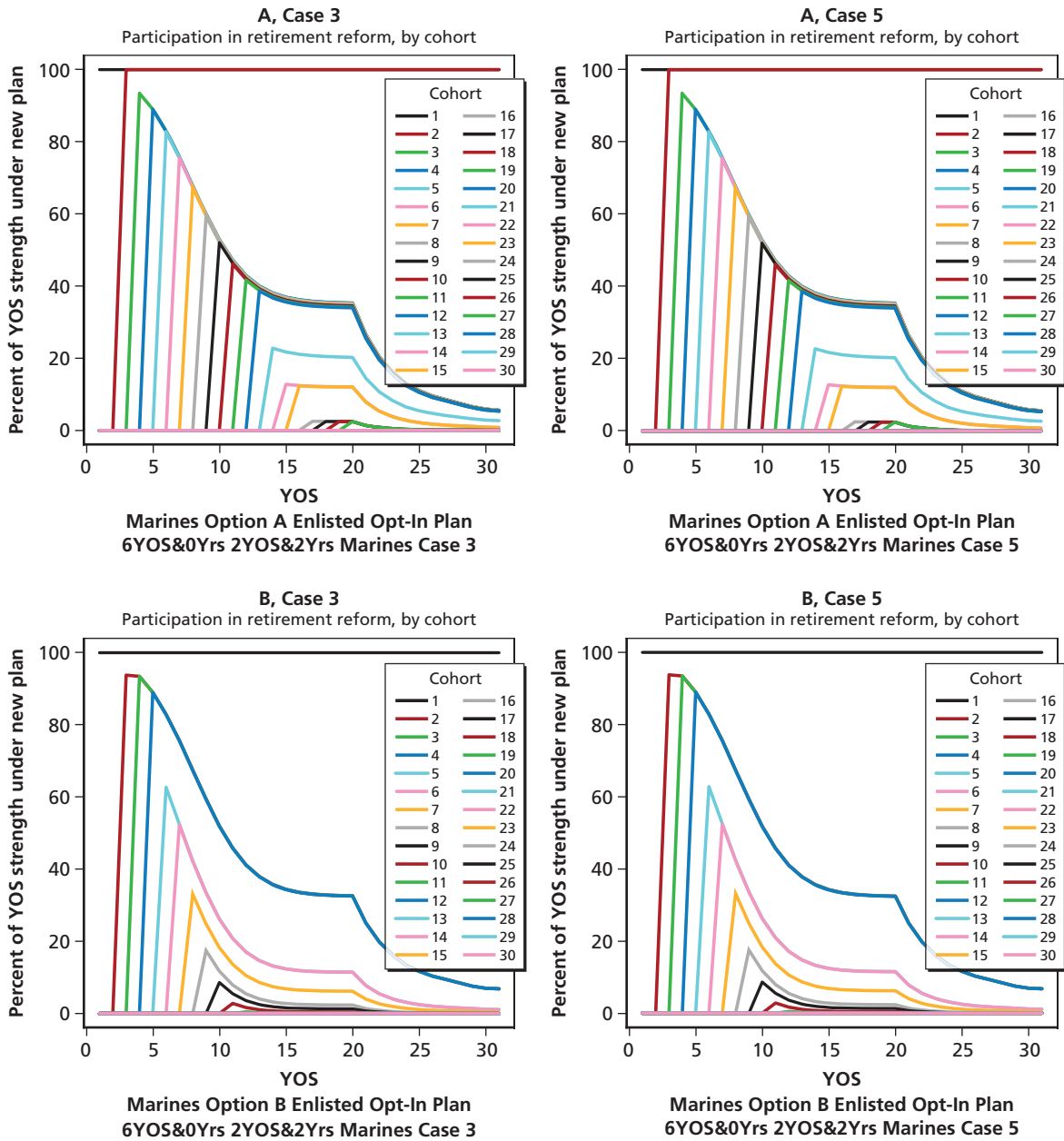


Figure C.7b
Percentage of Marine Corps Enlisted Personnel Who Opt In Under the Concept II Alternatives

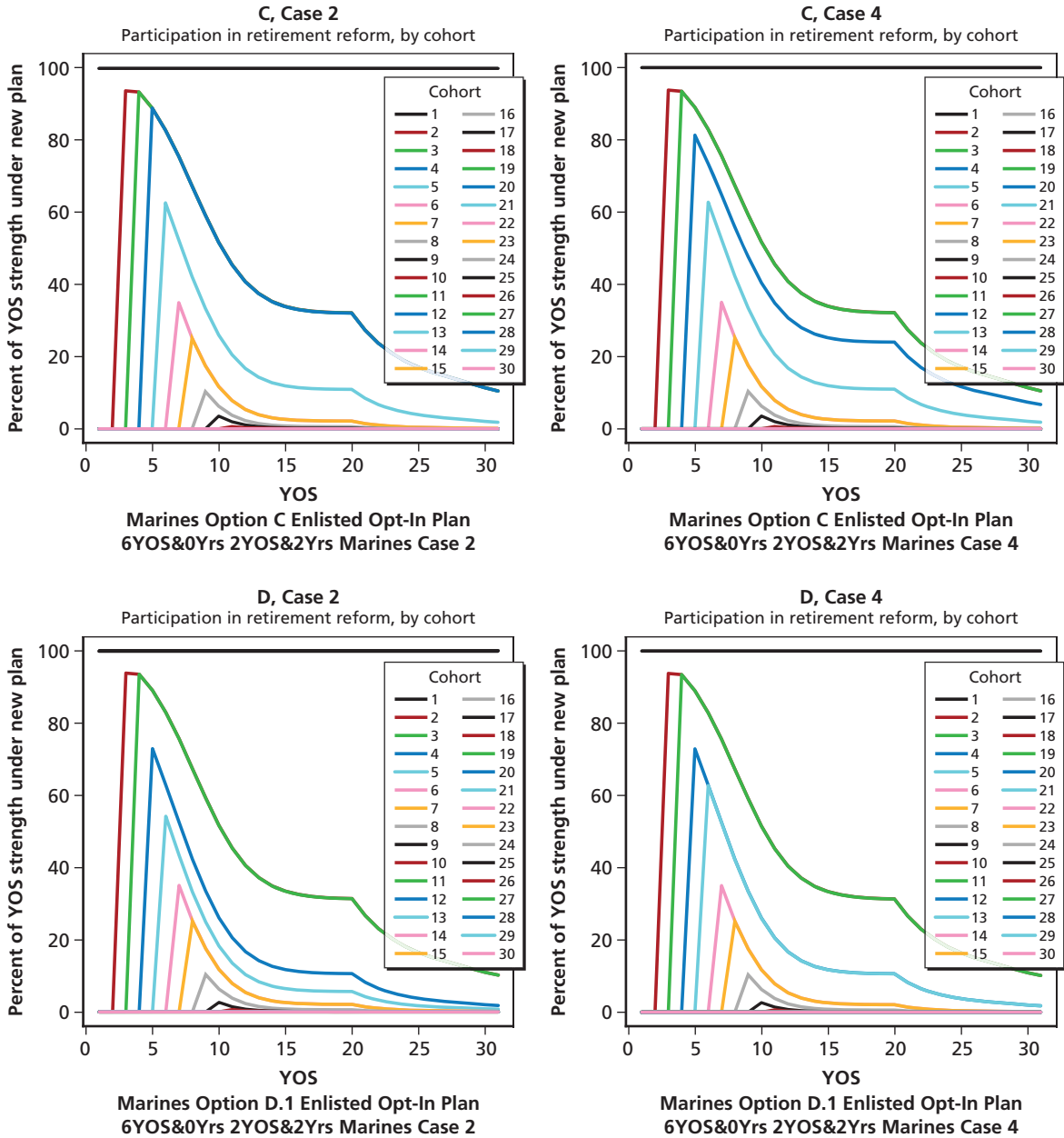


Figure C.8a
Percentage of Marine Corps Officers Who Opt In Under the Concept I Alternatives

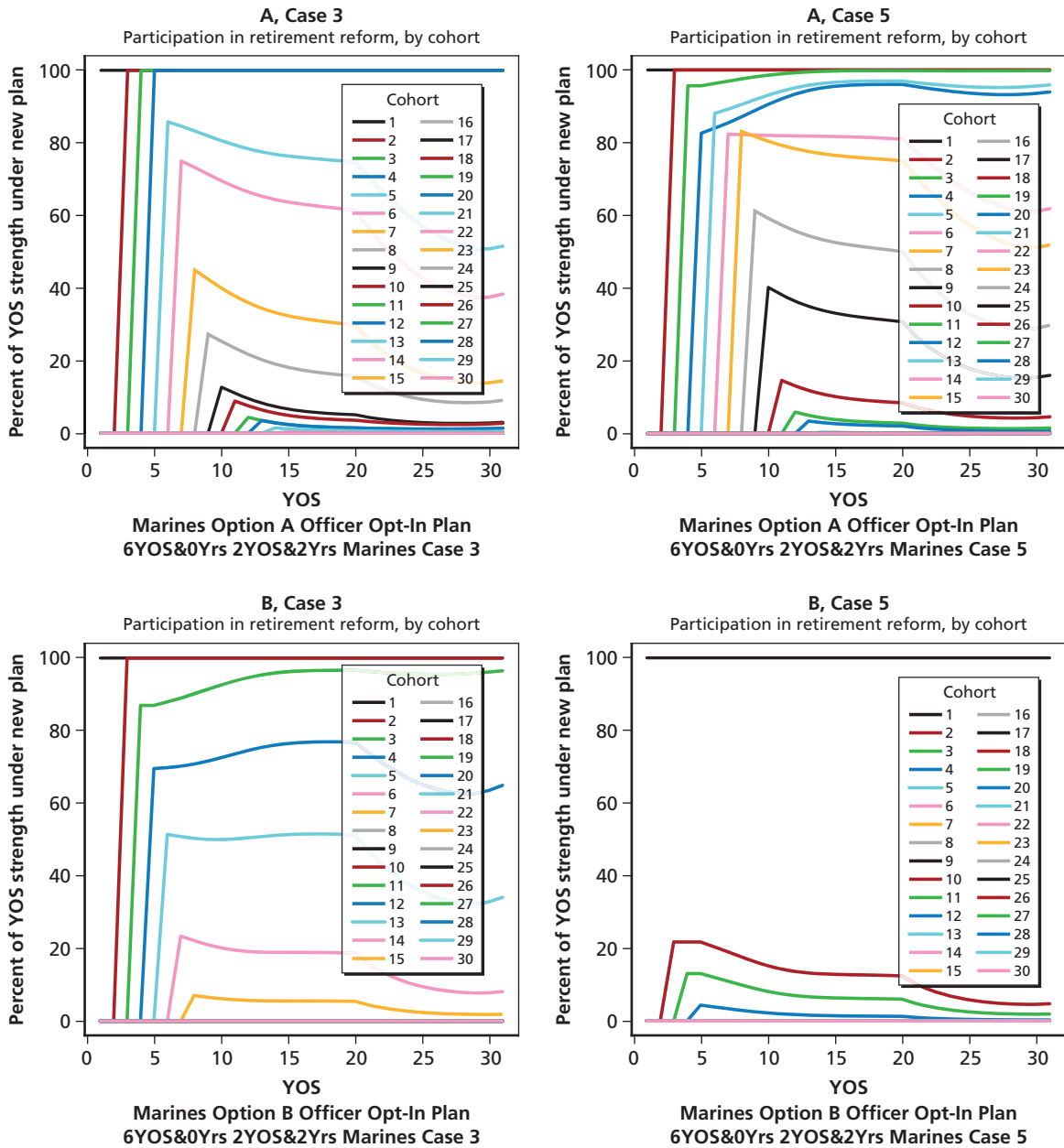
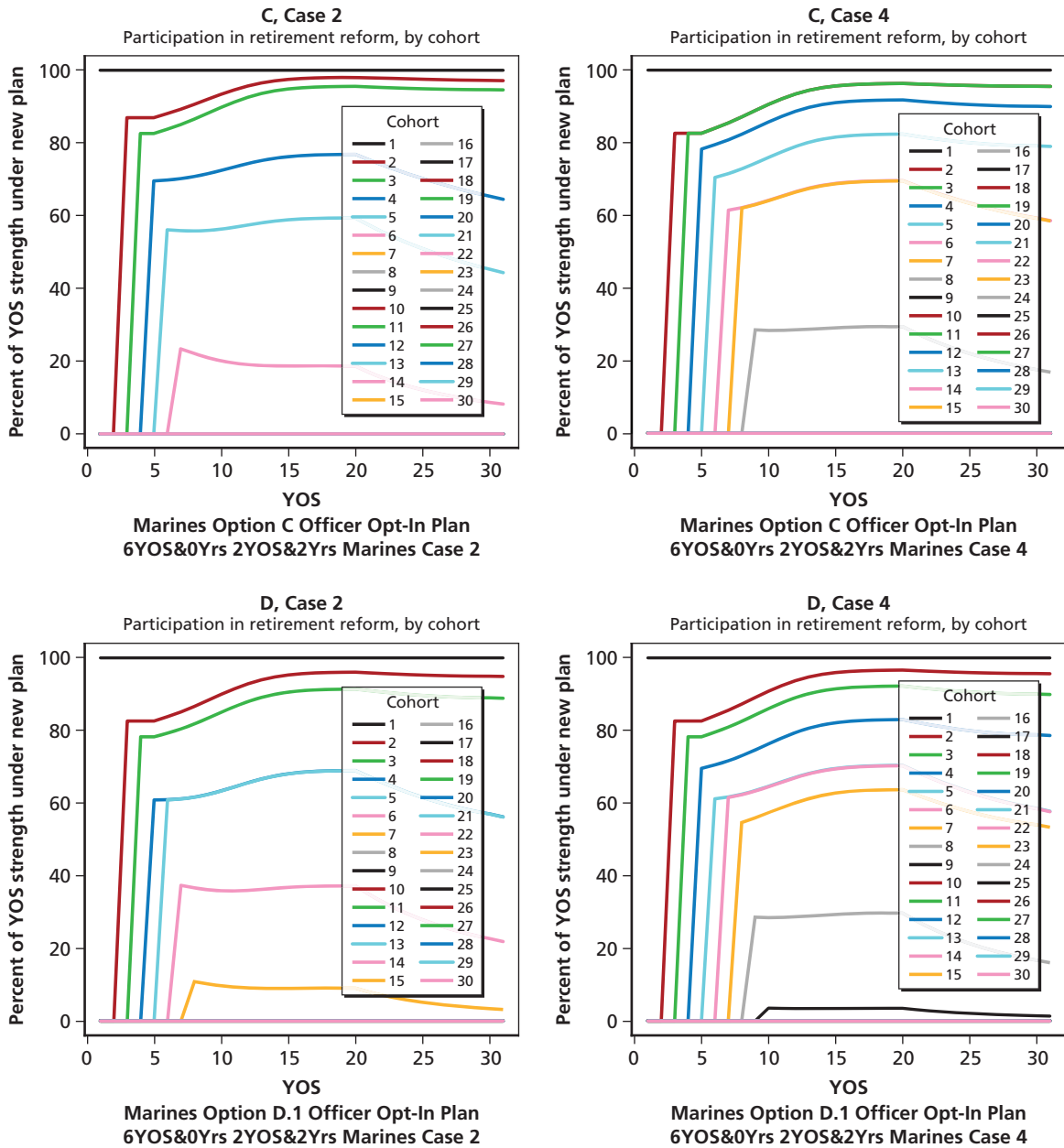


Figure C.8b
Percentage of Marine Corps Officers Who Opt In Under the Concept II Alternatives



Change in Net DoD Disability Retirement Benefit Under Proposed Reform Versus Current System

The tables in this appendix are companions to the tables in Chapter Seven showing the change in net DoD disability compensation under the disability reform proposal relative to the benefits under the current DoD disability compensation system. Each table has an upper part and a lower part. The upper part is for the case without Combat-Related Special Compensation (CRSC), while the lower part is for the CRSC case. CRSC affects the net DoD disability benefit under the current system. Under the proposed system, DoD disability benefits are not offset by VA disability compensation, so there is no reason for CRSC benefits to offset the VA offset.

The upper and lower parts of the tables each have three sections. The upper panel contains net DoD disability compensation under the current system. The middle panel—a single number on a single row—is the amount of DoD disability compensation that would be paid under the disability reform proposal. This amount depends only on years of service and basic pay, as explained in Chapter Seven, and it therefore does not vary by DoD and VA disability rating, in contrast to the net DoD benefit under the current system. The third panel contains the difference between the benefit under the proposed reform and the net benefit under the current system.

There are tables for the following cases: E-5, 10 YOS, spouse, two children under age 18; E-7, 22 YOS, spouse, two children, one over age 18; O-3, 8 YOS, single; O-6, 24 YOS, spouse, two children, one over age 18. The tables in Chapter Seven are for E-4, 4 YOS, single; O-4, 12 YOS, spouse, two children.

Finally, there are two tables for each of these cases. The first table shows the proposed disability benefit assuming a retirement multiplier of 0.025, which is relevant to Option A. Its old-age retirement benefit is based on this multiplier. The second table assumes a retirement multiplier of 0.020 and is relevant to Option B and Option C. We did not prepare tables for Option D, which has a retirement multiplier of 0.0175. The change in disability benefits under D will be similar to, but less than, the change under B and C.

Table D.1
Net DoD Disability Retirement Compensation with 0.025 Multiplier: E-5, 10 YOS, Spouse, with Two Children

a. No CRSC; Current Benefit (upper panel), Proposal Amount (middle), Difference (lower)

DoD Rating	VA Disability Rating							
	30%	40%	50%	60%	70%	80%	90%	100%
30%	\$289	\$125	\$0	\$0	\$0	\$0	\$0	\$0
40%		\$353	\$135	\$0	\$0	\$0	\$0	\$0
50%			\$363	\$166	\$0	\$0	\$0	\$0
60%				\$394	\$156	\$0	\$0	\$0
70%					\$384	\$191	\$16	\$0
Proposal Amount with 0.025 Multiplier: \$854								
Difference in Net Payment								
30%	\$564	\$728	\$854	\$854	\$854	\$854	\$854	\$854
40%		\$501	\$718	\$854	\$854	\$854	\$854	\$854
50%			\$491	\$688	\$854	\$854	\$854	\$854
60%				\$460	\$698	\$854	\$854	\$854
70%					\$470	\$663	\$837	\$854

b. CRSC; Current Benefit (upper panel), Proposal Amount (middle), Difference (lower)

DoD Rating	VA Disability Rating							
	30%	40%	50%	60%	70%	80%	90%	100%
30%	\$289	\$125	\$208	\$413	\$569	\$569	\$569	\$569
40%		\$353	\$135	\$128	\$400	\$569	\$569	\$569
50%			\$363	\$166	\$116	\$362	\$569	\$569
60%				\$394	\$156	\$77	\$374	\$569
70%					\$384	\$191	\$106	\$331
Proposal Amount with 0.025 Multiplier: \$854								
Difference in Net Payment								
30%	\$564	\$728	\$646	\$441	\$285	\$285	\$285	\$285
40%		\$501	\$718	\$726	\$454	\$285	\$285	\$285
50%				\$688	\$738	\$492	\$285	\$285
60%				\$460	\$698	\$777	\$480	\$285
70%					\$470	\$663	\$748	\$523

Table D.2
Net DoD Disability Retirement Compensation with 0.02 Multiplier: E-5, 10 YOS, Spouse,
with Two Children

a. No CRSC; Current Benefit (upper panel), Proposal Amount (middle), Difference (lower)

DoD Rating	VA Disability Rating							
	30%	40%	50%	60%	70%	80%	90%	100%
30%	\$289	\$125	\$0	\$0	\$0	\$0	\$0	\$0
40%		\$353	\$135	\$0	\$0	\$0	\$0	\$0
50%			\$363	\$166	\$0	\$0	\$0	\$0
60%				\$394	\$156	\$0	\$0	\$0
70%					\$384	\$191	\$16	\$0
Proposal Amount with 0.020 Multiplier: \$683								
Difference in Net Payment								
30%	\$394	\$558	\$683	\$683	\$683	\$683	\$683	\$683
40%		\$330	\$548	\$683	\$683	\$683	\$683	\$683
50%			\$320	\$517	\$683	\$683	\$683	\$683
60%				\$289	\$527	\$683	\$683	\$683
70%					\$299	\$492	\$666	\$683

b. CRSC; Current Benefit (upper panel), Proposal Amount (middle), Difference (lower)

DoD Rating	VA Disability Rating							
	30%	40%	50%	60%	70%	80%	90%	100%
30%	\$289	\$125	\$208	\$413	\$569	\$569	\$569	\$569
40%		\$353	\$135	\$128	\$400	\$569	\$569	\$569
50%			\$363	\$166	\$116	\$362	\$569	\$569
60%				\$394	\$156	\$77	\$374	\$569
70%					\$384	\$191	\$106	\$331
Proposal Amount with 0.020 Multiplier: \$683								
Difference in Net Payment								
30%	\$394	\$558	\$475	\$270	\$114	\$114	\$114	\$114
40%		\$330	\$548	\$555	\$283	\$114	\$114	\$114
50%				\$517	\$567	\$321	\$114	\$114
60%				\$289	\$527	\$606	\$309	\$114
70%					\$299	\$492	\$577	\$352

Table D.3
Net DoD Disability Retirement Compensation with 0.025 Multiplier: E-7, 22 YOS, Spouse,
with Two Children, One Over Age 18

a. No CRSC; Current Benefit (upper panel), Proposal Amount (middle), Difference (lower)

DoD Rating	VA Disability Rating							
	30%	40%	50%	60%	70%	80%	90%	100%
30%	\$1,064	\$885	\$654	\$445	\$193	\$0	\$0	\$0
40%		\$885	\$654	\$445	\$193	\$0	\$0	\$0
50%			\$858	\$649	\$397	\$190	\$2	\$0
60%				\$989	\$737	\$531	\$343	\$0
70%					\$1,078	\$871	\$683	\$0
Proposal Amount with 0.025 Multiplier: \$2,341								
Difference in Net Payment								
30%	\$1,277	\$1,455	\$1,687	\$1,896	\$2,148	\$2,341	\$2,341	\$2,341
40%		\$1,455	\$1,687	\$1,896	\$2,148	\$2,341	\$2,341	\$2,341
50%			\$1,482	\$1,692	\$1,944	\$2,150	\$2,338	\$2,341
60%				\$1,352	\$1,604	\$1,810	\$1,998	\$2,341
70%					\$1,263	\$1,469	\$1,657	\$2,341

b. CRSC; Current Benefit (upper panel), Proposal Amount (middle), Difference (lower)

DoD Rating	VA Disability Rating							
	30%	40%	50%	60%	70%	80%	90%	100%
30%	\$1,191	\$1,136	\$1,197	\$1,211	\$1,248	\$1,317	\$1,632	\$1,873
40%		\$1,136	\$1,197	\$1,211	\$1,248	\$1,317	\$1,632	\$1,873
50%			\$1,146	\$1,159	\$1,196	\$1,252	\$1,379	\$1,635
60%				\$1,074	\$1,111	\$1,167	\$1,294	\$1,209
70%					\$1,078	\$1,082	\$1,209	\$783
Proposal Amount with 0.025 Multiplier: \$2,341								
Difference in Net Payment								
30%	\$1,150	\$1,204	\$1,144	\$1,130	\$1,093	\$1,024	\$709	\$468
40%		\$1,204	\$1,144	\$1,130	\$1,093	\$1,024	\$709	\$468
50%				\$1,181	\$1,144	\$1,089	\$962	\$706
60%				\$1,266	\$1,229	\$1,174	\$1,047	\$1,132
70%					\$1,263	\$1,259	\$1,132	\$1,557

Table D.4
Net DoD Disability Retirement Compensation with 0.02 Multiplier: E-7, 22 YOS, Spouse,
with Two Children, One Over Age 18

a. No CRSC; Current Benefit (upper panel), Proposal Amount (middle), Difference (lower)

DoD Rating	VA Disability Rating							
	30%	40%	50%	60%	70%	80%	90%	100%
30%	\$1,064	\$885	\$654	\$445	\$193	\$0	\$0	\$0
40%		\$885	\$654	\$445	\$193	\$0	\$0	\$0
50%			\$858	\$649	\$397	\$190	\$2	\$0
60%				\$989	\$737	\$531	\$343	\$0
70%					\$1,078	\$871	\$683	\$0
Proposal Amount with 0.020 Multiplier: \$1,873								
Difference in Net Payment								
30%	\$809	\$987	\$1,219	\$1,428	\$1,680	\$1,873	\$1,873	\$1,873
40%		\$987	\$1,219	\$1,428	\$1,680	\$1,873	\$1,873	\$1,873
50%			\$1,014	\$1,224	\$1,476	\$1,682	\$1,870	\$1,873
60%				\$883	\$1,135	\$1,342	\$1,530	\$1,873
70%					\$795	\$1,001	\$1,189	\$1,873

b. CRSC; Current Benefit (upper panel), Proposal Amount (middle), Difference (lower)

DoD Rating	VA Disability Rating							
	30%	40%	50%	60%	70%	80%	90%	100%
30%	\$1,191	\$1,136	\$1,197	\$1,211	\$1,248	\$1,317	\$1,632	\$1,873
40%		\$1,136	\$1,197	\$1,211	\$1,248	\$1,317	\$1,632	\$1,873
50%			\$1,146	\$1,159	\$1,196	\$1,252	\$1,379	\$1,635
60%				\$1,074	\$1,111	\$1,167	\$1,294	\$1,209
70%					\$1,078	\$1,082	\$1,209	\$783
Proposal Amount with 0.020 Multiplier: \$1,873								
Difference in Net Payment								
30%	\$682	\$736	\$676	\$662	\$625	\$556	\$241	\$0
40%		\$736	\$676	\$662	\$625	\$556	\$241	\$0
50%				\$713	\$676	\$621	\$494	\$238
60%				\$798	\$761	\$706	\$579	\$664
70%					\$795	\$791	\$664	\$1,089

Table D.5**Net DoD Disability Retirement Compensation with 0.025 Multiplier: O-3, 8 YOS, Single**

a. No CRSC; Current Benefit (upper panel), Proposal Amount (middle), Difference (lower)

DoD Rating	VA Disability Rating							
	30%	40%	50%	60%	70%	80%	90%	100%
30%	\$954	\$817	\$628	\$458	\$248	\$83	\$0	\$0
40%		\$1,239	\$1,049	\$880	\$669	\$505	\$358	\$0
50%			\$1,471	\$1,302	\$1,091	\$926	\$780	\$0
60%				\$1,723	\$1,513	\$1,348	\$1,202	\$315
70%					\$1,935	\$1,770	\$1,624	\$737
Proposal Amount with 0.025 Multiplier: \$1,582								
Difference in Net Payment								
30%	\$628	\$764	\$954	\$1,124	\$1,334	\$1,499	\$1,582	\$1,582
40%		\$343	\$532	\$702	\$912	\$1,077	\$1,223	\$1,582
50%			\$110	\$280	\$490	\$655	\$802	\$1,582
60%				-\$142	\$69	\$233	\$380	\$1,266
70%					-\$353	-\$188	-\$42	\$844

b. CRSC; Current Benefit (upper panel), Proposal Amount (middle), Difference (lower)

DoD Rating	VA Disability Rating							
	30%	40%	50%	60%	70%	80%	90%	100%
30%	\$954	\$817	\$628	\$458	\$307	\$354	\$534	\$740
40%		\$1,239	\$1,049	\$880	\$669	\$505	\$365	\$213
50%			\$1,471	\$1,302	\$1,091	\$926	\$780	\$0
60%				\$1,723	\$1,513	\$1,348	\$1,202	\$315
70%					\$1,935	\$1,770	\$1,624	\$737
Proposal Amount with 0.025 Multiplier: \$1,582								
Difference in Net Payment								
30%	\$628	\$764	\$954	\$1,124	\$1,275	\$1,228	\$1,048	\$842
40%		\$343	\$532	\$702	\$912	\$1,077	\$1,217	\$1,369
50%				\$280	\$490	\$655	\$802	\$1,582
60%				-\$142	\$69	\$233	\$380	\$1,266
70%					-\$353	-\$188	-\$42	\$844

Table D.6
Net DoD Disability Retirement Compensation with 0.02 Multiplier: O-3, 8 YOS, Single

a. No CRSC; Current Benefit (upper panel), Proposal Amount (middle), Difference (lower)

DoD Rating	VA Disability Rating							
	30%	40%	50%	60%	70%	80%	90%	100%
30%	\$954	\$817	\$628	\$458	\$248	\$83	\$0	\$0
40%		\$1,239	\$1,049	\$880	\$669	\$505	\$358	\$0
50%			\$1,471	\$1,302	\$1,091	\$926	\$780	\$0
60%				\$1,723	\$1,513	\$1,348	\$1,202	\$315
70%					\$1,935	\$1,770	\$1,624	\$737
Proposal Amount with 0.020 Multiplier: \$1,265								
Difference in Net Payment								
30%	\$311	\$448	\$638	\$807	\$1,018	\$1,182	\$1,265	\$1,265
40%		\$26	\$216	\$385	\$596	\$761	\$907	\$1,265
50%			-\$206	-\$36	\$174	\$339	\$485	\$1,265
60%				-\$458	-\$248	-\$83	\$64	\$950
70%					-\$669	-\$505	-\$358	\$528

b. CRSC; Current Benefit (upper panel), Proposal Amount (middle), Difference (lower)

DoD Rating	VA Disability Rating							
	30%	40%	50%	60%	70%	80%	90%	100%
30%	\$954	\$817	\$628	\$458	\$307	\$354	\$534	\$740
40%		\$1,239	\$1,049	\$880	\$669	\$505	\$365	\$213
50%			\$1,471	\$1,302	\$1,091	\$926	\$780	\$0
60%				\$1,723	\$1,513	\$1,348	\$1,202	\$315
70%					\$1,935	\$1,770	\$1,624	\$737
Proposal Amount with 0.020 Multiplier: \$1,265								
Difference in Net Payment								
30%	\$311	\$448	\$638	\$807	\$959	\$911	\$731	\$525
40%		\$26	\$216	\$385	\$596	\$761	\$900	\$1,053
50%				-\$36	\$174	\$339	\$485	\$1,265
60%				-\$458	-\$248	-\$83	\$64	\$950
70%					-\$669	-\$505	-\$358	\$528

Table D.7
Net DoD Disability Retirement Compensation with 0.025 Multiplier: O-6, 24 YOS,
Spouse, with Two Children, One Over Age 18

a. No CRSC; Current Benefit (upper panel), Proposal Amount (middle), Difference (lower)

DoD Rating	VA Disability Rating							
	30%	40%	50%	60%	70%	80%	90%	100%
30%	\$3,259	\$3,080	\$2,849	\$2,639	\$2,387	\$2,181	\$1,993	\$1,065
40%		\$3,080	\$2,849	\$2,639	\$2,387	\$2,181	\$1,993	\$1,065
50%			\$3,003	\$2,793	\$2,541	\$2,335	\$2,147	\$1,219
60%				\$3,563	\$3,311	\$3,104	\$2,916	\$1,988
70%					\$4,080	\$3,874	\$3,686	\$2,758
Proposal Amount with 0.025 Multiplier: \$5,770								
Difference in Net Payment								
30%	\$2,512	\$2,690	\$2,921	\$3,131	\$3,383	\$3,589	\$3,777	\$4,705
40%		\$2,690	\$2,921	\$3,131	\$3,383	\$3,589	\$3,777	\$4,705
50%			\$2,767	\$2,977	\$3,229	\$3,435	\$3,623	\$4,551
60%				\$2,208	\$2,460	\$2,666	\$2,854	\$3,782
70%					\$1,690	\$1,897	\$2,085	\$3,013

b. CRSC; Current Benefit (upper panel), Proposal Amount (middle), Difference (lower)

DoD Rating	VA Disability Rating							
	30%	40%	50%	60%	70%	80%	90%	100%
30%	\$3,386	\$3,331	\$3,392	\$3,405	\$3,442	\$3,498	\$3,625	\$2,955
40%		\$3,331	\$3,392	\$3,405	\$3,442	\$3,498	\$3,625	\$2,955
50%			\$3,353	\$3,367	\$3,404	\$3,459	\$3,586	\$2,916
60%				\$3,563	\$3,311	\$3,267	\$3,394	\$2,724
70%					\$4,080	\$3,874	\$3,686	\$2,758
Proposal Amount with 0.025 Multiplier: \$5,770								
Difference in Net Payment								
30%	\$2,385	\$2,439	\$2,378	\$2,365	\$2,328	\$2,272	\$2,145	\$2,815
40%		\$2,439	\$2,378	\$2,365	\$2,328	\$2,272	\$2,145	\$2,815
50%				\$2,403	\$2,366	\$2,311	\$2,184	\$2,854
60%				\$2,208	\$2,460	\$2,503	\$2,376	\$3,046
70%					\$1,690	\$1,897	\$2,085	\$3,013

Table D.8
Net DoD Disability Retirement Compensation with 0.02 Multiplier: O-6, 24 YOS, Spouse,
with Two Children, One Over Age 18

a. No CRSC; Current Benefit (upper panel), Proposal Amount (middle), Difference (lower)

DoD Rating	VA Disability Rating							
	30%	40%	50%	60%	70%	80%	90%	100%
30%	\$3,259	\$3,080	\$2,849	\$2,639	\$2,387	\$2,181	\$1,993	\$1,065
40%		\$3,080	\$2,849	\$2,639	\$2,387	\$2,181	\$1,993	\$1,065
50%			\$3,003	\$2,793	\$2,541	\$2,335	\$2,147	\$1,219
60%				\$3,563	\$3,311	\$3,104	\$2,916	\$1,988
70%					\$4,080	\$3,874	\$3,686	\$2,758
Proposal Amount with 0.020 Multiplier: \$4,616								
Difference in Net Payment								
30%	\$1,358	\$1,536	\$1,767	\$1,977	\$2,229	\$2,435	\$2,623	\$3,551
40%		\$1,536	\$1,767	\$1,977	\$2,229	\$2,435	\$2,623	\$3,551
50%			\$1,613	\$1,823	\$2,075	\$2,281	\$2,469	\$3,397
60%				\$1,054	\$1,306	\$1,512	\$1,700	\$2,628
70%					\$536	\$743	\$931	\$1,859

b. CRSC; Current Benefit (upper panel), Proposal Amount (middle), Difference (lower)

DoD Rating	VA Disability Rating							
	30%	40%	50%	60%	70%	80%	90%	100%
30%	\$3,386	\$3,331	\$3,392	\$3,405	\$3,442	\$3,498	\$3,625	\$2,955
40%		\$3,331	\$3,392	\$3,405	\$3,442	\$3,498	\$3,625	\$2,955
50%			\$3,353	\$3,367	\$3,404	\$3,459	\$3,586	\$2,916
60%				\$3,563	\$3,311	\$3,267	\$3,394	\$2,724
70%					\$4,080	\$3,874	\$3,686	\$2,758
Proposal Amount with 0.020 Multiplier: \$4,616								
Difference in Net Payment								
30%	\$1,231	\$1,285	\$1,224	\$1,211	\$1,174	\$1,118	\$991	\$1,661
40%		\$1,285	\$1,224	\$1,211	\$1,174	\$1,118	\$991	\$1,661
50%				\$1,249	\$1,212	\$1,157	\$1,030	\$1,700
60%				\$1,054	\$1,306	\$1,349	\$1,222	\$1,892
70%					\$536	\$743	\$931	\$1,859

Estimated Coefficients for Dynamic Retention Model

Parameter Estimates

To make the numerical optimization easier, we do not estimate the parameters directly but instead estimate the natural logarithm of each parameter, with the exception of the correlation, for which we estimate the inverse hyperbolic tangent. To recover the parameters, we need to transform the estimates. The raw and transformed parameter estimates for each service, for officers and enlisted personnel, are shown in Tables E.1–E.4. All of the estimates are highly statistically significant. The transformed estimates in Tables E.2 and E.4 are denominated in thousands of dollars, except for the estimates of the taste correlation and the discount factor.

The model nests the “reserve” and “civilian” alternatives because most reservists also hold a civilian job, and a shock to “civilian” is therefore also likely to be felt by “reserve.” At the same time, each alternative is likely to be subject to its own shock. This reasoning is confirmed by the results for tau and lambda, which are estimates for the nest shock and the alternative-specific shock, respectively. Both are both statistically significant. The estimates of tau for enlisted personnel range from about \$27,600 to \$43,000, and the estimates of lambda are \$9,000 to \$24,800. A large value of tau compared to lambda means that a high fraction of the total error variance comes from the nest error, i.e., the error common to the reserve and civilian alternatives. If, as seems plausible, the nest error is mainly the result of random factors related to the civilian job, the results for both officers and enlisted personnel suggest that job-related shocks are an important source of randomness for individuals who served in each service.

The mean reserve taste estimates for enlisted personnel are in the neighborhood of $-\$15,600$ to $-\$9,300$ for the Army, Navy, and Air Force but $-\$34,500$ for the Marine Corps. The lower values of the reserve taste compared with active taste means that many of those who served in an AC do not have nearly as strong an inclination to serve in an RC. This is borne out by data that show that only a minority of soldiers in any entering active cohort choosing to enter the selected reserve. The estimated standard deviation of active taste is about \$1,700 to \$3,800 for the Army and Navy, \$7,400 for the Air Force, and \$15,700 for the Marine Corps. The estimates imply greater homogeneity of tastes among enlistees in the Army and Navy, whereas tastes among Marine Corps and Air Force enlistees are more diverse. Intuitively, a low variance in tastes means that, controlling for state, pay, and shocks, there will be little difference in active stay/leave decisions among individuals at a decision point. The estimated standard deviation of reserve taste is an order of magnitude higher. The estimates are \$13,200 for the Army, \$16,000 for the Navy and Air Force, and \$90,000 for the Marine Corps. Thus, not only are mean reserve tastes lower than mean active tastes, but tastes for the reserves vary much more widely than tastes for the actives.

Table E.1
Parameter Estimates and Standard Errors for Enlisted Personnel, by Service

Coefficient	Army		Navy		Air Force		Marine Corps	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
ln(Tau)	3.763	0.050	3.738	0.064	3.564	0.067	3.316	0.032
ln(Lambda)	2.521	0.062	2.293	0.084	2.465	0.079	3.212	0.040
ln(-1 × (Mean Active Taste))	2.229	0.042	2.752	0.049	2.319	0.050	3.540	0.024
ln(-1 × (Mean Reserve Taste))	3.181	0.054	3.485	0.077	3.255	0.085	5.095	0.058
ln(SD Active Taste)	0.508	0.135	1.334	0.099	2.001	0.069	2.752	0.040
ln(SD Reserve Taste)	2.581	0.069	2.777	0.094	2.785	0.094	4.505	0.062
atanh(Taste Correlation)	0.789	0.018	1.117	0.033	0.708	0.025	0.907	0.044
ln(-1 × (Leave Active in First Two Years))	1.657	0.166	3.914	0.066	4.028	0.067	4.680	0.031
ln(-1 × (Switch Civilian to Reserve))	3.906	0.062	3.700	0.085	4.037	0.079	4.289	0.041
ln(-1 × (Leave Active After First Two Years))	1.870	0.084	2.500	0.093	2.798	0.073	4.202	0.048
ln(Beta)	-0.131	0.004	-0.103	0.004	-0.129	0.005	-0.105	fixed
-1 × Log Likelihood	125,434		93,697		101,264		77,682	
N	29,619		29,942		29,928		29,931	

NOTES: SE = standard error. Tau is the shape parameter of the nest error; lambda is the shape parameter of the error specific to each alternative in the nest (here, "reserve" and "civilian"); Leave Active in First Two Years is a switching cost; Switch Civilian to Reserve is a switching cost; Leave Active After First Two Years is a switching cost; Beta is the personal discount factor.

Tastes for the actives and reserves are positively correlated. The taste correlation for Air Force and Army enlisted personnel is about 0.61 to 0.66 but higher for Navy and Marine Corps enlisted personnel at 0.72 to 0.81. For officers, the correlation is at the lower end of this range for Army, Navy, and Air Force, from 0.39 to 0.73, but lower for the Marine Corps, at 0.39. An implication of the positive correlation is that a high active-taste individual is likely to have longer retention in an AC and after leaving, is more likely to participate in an RC.

The estimated model contains two switching costs in the enlisted specification. These improve the fit of the model. "Leave active in first two years" reflects the implicit cost inhibiting an AC service member from leaving after the first or second year of service. Some individuals might prefer to leave, e.g., low-taste individuals who were induced to enter the military by a negative civilian shock, but the military, having invested in their recruiting and training, does not want them to leave until they have served in a unit. "Switch civilian to reserve" is the implicit cost of entering the reserves from the civilian status. The cost may be thought of as a monetary estimate of the cost of having less time and flexibility to take part in family and career pursuits if one joins the reserves. There is no explicit cost of joining the reserve, but the estimate indicates that people behave as though there is one. In addition, there is an implicit cost associated with switching from the active to the reserve after the first 2 YOS, which is captured by "Leave active after first two years." The estimated cost of switching from active to

Table E.2
Transformed Parameter Estimates for Enlisted Personnel, by Service

Coefficient	Army	Navy	Air Force	Marine Corps
Tau	43.059	42.026	35.303	27.561
Lambda	12.435	9.902	11.764	24.839
Mean Active Taste	-9.288	-15.677	-10.161	-34.468
Mean Reserve Taste	-24.061	-32.618	-25.923	-163.208
SD Active Taste	1.662	3.795	7.398	15.674
SD Reserve Taste	13.205	16.065	16.195	90.428
Taste Correlation	0.658	0.807	0.609	0.720
Leave Active in First Two Years	-5.241	-50.096	-56.135	-107.795
Switch Civilian to Reserve	-49.717	-40.435	-56.634	-72.862
Leave Active After First Two Years	-6.486	-12.183	-16.418	-66.789
Beta	0.878	0.902	0.879	0.900

NOTES: Transformed parameters are denominated in thousands of dollars, with the exception of Taste Correlation and Beta. Tau is the shape parameter of the nest error; Lambda is the shape parameter of the error specific to each alternative in the nest (here, "reserve" and "civilian"); Leave Active in First Two Years is a switching cost; Switch Civilian to Reserve is a switching cost; Leave Active After First Two Years is a switching cost; Beta is the personal discount factor.

reserve service is significantly lower than entering the reserves from civilian status, which may reflect efforts by the services to bring exiting active members directly into the reserve.

The personal discount factor estimates range from 0.88 to 0.90 for enlistees. A discount factor of 0.90 translates to a personal discount rate of 11 percent; a factor of 0.88 to 14 percent. The real federal discount rate is roughly 3 percent, and the difference between a 11 percent or higher personal discount rate and the federal discount rate indicates the possibility of saving cost by converting deferred compensation to current compensation.

Not surprisingly, the estimated discount factors for officers are higher, at about 0.94.

Table E.3
Parameter Estimates and Standard Errors for Officers, by Service

Coefficient	Army		Navy		Air Force		Air Force Pilots		Marine Corps	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
ln(Tau)	4.7654	0.1171	4.894	0.149	5.029	0.295	4.009	0.092	4.505	0.160
ln(Lambda)	3.6835	0.1258	2.447	0.184	3.2208	0.4644	2.368	0.289	2.623	0.165
ln(-1 × (Mean Active Taste))	2.731	0.1727	3.283	0.175	2.8365	0.6922	3.147	0.087	2.573	0.119
ln(-1 × (Mean Reserve Taste))	4.558	0.113	4.083	0.143	4.5082	0.3772	3.186	0.102	3.713	0.045
ln(SD Active Taste)	3.2413	0.1474	2.197	0.327	3.2188	0.4781	1.963	0.429	1.892	2.640
ln(SD Reserve Taste)	4.2971	0.1272	3.645	0.193	4.2818	0.4461	3.254	0.219	3.352	0.203
atanh(Taste Correlation)	0.9377	0.0329	0.885	0.040	0.9391	0.1028	0.888	0.110	0.414	0.086
ln(-1 × (Leave Active in First 3-4 Years))	6.0889	0.1148	5.932	0.154	6.0847	0.3113	6.028	0.097	7.609	122.727
ln(-1 × (Switch Civilian to Reserve))	4.5091	0.1315	3.108	0.194	4.0319	0.4684	3.176	0.313	3.101	0.200
ln(Beta)	-0.063	0.0035	-0.056	0.004	-0.0568	0.0109	-0.060	fixed	-0.066	0.003
-1*Log Likelihood	14,310		12,735		2,141		1,769		4,462	
N	3,442		3,170		643		518		923	

NOTES: Tau is the shape parameter of the nest error; Lambda is the shape parameter of the error specific to each alternative in the nest (here, "reserve" and "civilian"); Leave Active in First Two Years is a switching cost; Switch Civilian to Reserve is a switching cost; Beta is the personal discount factor, which is a fixed value in the pilot model and estimated in the remaining models.

Table E.4
Transformed Parameter Estimates for Officers, by Service

Coefficient	Army	Navy	Air Force	AF Pilots	Marine Corps
Tau	123.9391	133.477	117.380	55.085	90.483
Lambda	39.7859	11.557	39.786	10.6725	13.780
Mean Active Taste	-15.349	-26.658	-15.349	-23.2728	-13.105
Mean Reserve Taste	-95.3949	-59.299	-95.395	-24.1793	-40.983
SD Active Taste	25.5672	8.997	25.567	7.1206	6.633
SD Reserve Taste	73.4841	38.298	73.484	25.9035	28.549
Taste Correlation	0.7342	0.709	0.734	0.7103	0.392
Leave Active in First 3–4 Years	-440.9429	-376.848	-440.943	-414.7268	-2016.261
Switch Civilian to Reserve	-90.8369	-22.371	-90.837	-23.9425	-22.214
Beta	0.939	0.945	0.939	0.9418	0.936

NOTES: Transformed parameters are denominated in thousands of dollars, with the exception of Taste Correlation and Beta. Tau is the shape parameter of the nest error; Lambda is the shape parameter of the error specific to each alternative in the nest (here, "reserve" and "civilian"); Leave Active in First Two Years is a switching cost; Switch Civilian to Reserve is a switching cost; Beta is the personal discount factor, which is a fixed value in the pilot model and estimated in the remaining models.

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Pressure to reduce the federal deficit, planned reductions in strength, concerns about cost, and perceptions expressed by military leaders, past commissions, and studies about the lack of fairness of the military compensation system have placed increased attention on military compensation as an area for reform. In September 2011, the Office of the Secretary of Defense convened a working group of senior representatives throughout the Department of Defense (DoD) to conduct a comprehensive review of military compensation, focusing on retirement compensation.

The group's deliberations built on the findings of past reviews and were informed by RAND's analysis over the 18 months that the group met. We used and extended RAND's dynamic retention model to assess many proposals for their effects on active and reserve retention and cost—that culminated in assisting the group to identify two broad design concepts. We also evaluated options for implementing reforms in the transition to the steady state (i.e., when all service members are receiving retirement benefits under the new retirement system), and we evaluated proposals for disability compensation reform.

The two design concepts retain positive aspects of the current system while addressing criticisms of the system related to the fairness and fiscal sustainability. Our analysis shows that both concepts are feasible, provide cost savings, improve equity, potentially add force management flexibility, and simplify the DoD disability compensation system. We find that DoD cost savings begin at once, while Treasury outlays initially increase and later decrease below baseline outlays. Allowing members grandfathered under the old system to participate in the new system hastens both effects. Both concepts give rise to the same willingness to stay in service, and so sustain readiness by maintaining force size and experience.



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