

HD-A135 898

WOULD A DRAFT SAVE THE NAVY MONEY? A NE LOOK(U) CENTER 1/1
FOR NAVAL ANALYSES ALEXANDRIA VA J S THOMASON JUL 83
CRC-505 N00014-76-C-0001

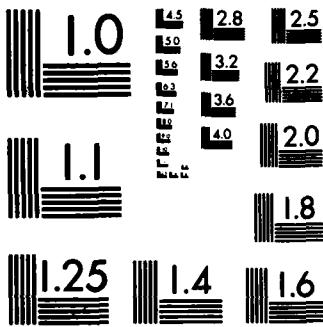
UNCLASSIFIED

F/G 5/9

NL

END

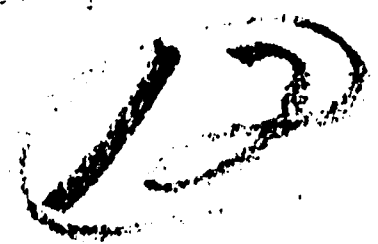
FILMED
144
DTIC



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

AD-A135898

CRC 505 / July 1983



WOULD A DRAFT SAVE THE NAVY MONEY? A NEW LOOK

James S. Thomason

DTIC FILE COPY



D



CENTER FOR NAVAL ANALYSES

DISTRIBUTION STATEMENT
Approved for public release;
Distribution Unlimited

83 12 16 04Z

**APPROVED FOR PUBLIC RELEASE;
DISTRIBUTION UNLIMITED**

Work conducted under contract N00014-76-C-0001

**This Research Contribution does not necessarily represent
the opinion of the Department of the Navy**

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER CRC 505	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) Would a Draft Save the Navy Money? A New Look		5. TYPE OF REPORT & PERIOD COVERED
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) James S. Thomason		8. CONTRACT OR GRANT NUMBER(s) N00014-76-C-0001
9. PERFORMING ORGANIZATION NAME AND ADDRESS Center for Naval Analyses 2000 No. Beauregard Street Alexandria, Virginia 22311		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS Office of Naval Research Department of the Navy Arlington, Virginia 22317		12. REPORT DATE July 1983
		13. NUMBER OF PAGES 26
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) Office of the Chief of Naval Operations (Op91) Department of the Navy Washington, D.C. 20350		15. SECURITY CLASS. (of this report) Unclassified
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES This research contribution does not necessarily represent the opinion of the Department of the Navy.		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) All volunteer, Cost analysis, Drafting, Naval budgets, Personnel retention, Recruiting		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This report assesses the Navy's potential budgetary savings from a return to peacetime conscription. Previous estimates are summarized first. Then the report explores the sensitivity of results to assumptions about key factors, including the numbers of draft-induced accessions, first-term pay, and recruiting costs as well as reenlistment probabilities of draft-induced acces- sions. Implications for the future of the All-Volunteer Force are addressed.		

CENTER FOR NAVAL ANALYSES

2000 North Beauregard Street, Post Office Box 11280, Alexandria, Virginia 22311 (703) 988-3600



29 November 1983

MEMORANDUM FOR DISTRIBUTION LIST

Subj: Center for Naval Analyses Research Contribution 505

Encl: (1) CRC 505, "Would a Draft Save the Navy Money? A New Look," by James Thomason, July 1983

1. Enclosure (1) is forwarded as a matter of possible interest.
2. This Research Contribution was prepared in connection with the Navy Manpower Personnel Issues in the 1980s (NMPI) Study. It shows that after incorporating the extra costs in a draft of sustaining a career force, conscription offers the Navy the possibility of only slight budget savings.
3. Research Contributions are distributed for their potential value in other studies and analyses. They do not necessarily represent the opinion of the Department of the Navy.

ANDREW P. BORDEN
CNA Vice President
Director Naval Studies Group

Accession For	
NTIS	<input checked="" type="checkbox"/>
CRA&I	<input checked="" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By _____	
Distribution/ _____	
Availability Codes	
Dist	Avail and/or Special
A/1	



Subj: Center for Naval Analyses Research Contribution 505

DISTRIBUTION LIST

SNDL

A1 Assistant Secretary of the Navy (M&RA)
A1 Principal Deputy Assistant Secretary of the Navy (M&RA)
A1 Deputy Assistant Secretary of the Navy (Manpower)
A2A Office of Program Appraisal
A2A Chief of Naval Research
A2A ONR (Codes: 431, 450, 452, 458)
A4A Chief of Naval Material (Code 00KB)
A6 Deputy Chief of Staff (Manpower) HqMC
21A1 Commander in Chief, U.S. Atlantic Fleet
21A2 Commander in Chief, U.S. Pacific Fleet
21A3 Commander in Chief, U.S. Naval Forces Europe
24H1 Commander Training Command, Atlantic
24H2 Commander Training Command, Pacific
B1B Ass't Sec'y of Defense, Program Analysis & Evaluation (2 copies)
B1B Ass't Sec'y of Defense, Manpower, Reserve Affairs, & Logistics
B2A Defense Technical Information Center (12 copies)
B3 National Defense University
B3 Armed Forces Staff College
B5 Commandant, Coast Guard
FF38 Naval Academy (Nimitz Library)
FF44 Naval War College
FF48 Human Resources Management Center
FH7 Naval Medical Research Institute
FH20 Health Research Center
FJ18 Military Personnel Command
FJ76 Recruiting Command
FJ89 Naval Manpower Material Analysis Center, Atlantic
FJ89 Naval Manpower Material Analysis Center, Pacific
FKA6A16 Personnel Research & Development Center (2 copies)
FR1 Chief of Naval Reserve (6 copies)
FT1 Chief of Naval Education and Training
FT5 Chief of Naval Technical Training
FT73 Naval Postgraduate School

OpNav: Op-090, Op-00K, Op-09BH, Op-09R, Op-90, Op-901D, Op-91, Op-914,
Op-914D, Op-914D2, Op-916, Op-01, Op-01B, Op-11, Op-110, Op-115,
Op-12, Op-13, Op-135, Op-14, Op-15, Op-16, Op-162, Op-29, Op-39,
Op-59

Other

Defense Advanced Research Projects Agency
Department of the Army (Attn: Adj Gen'1) (6 copies)
The Army Research Institute
Department of the Air Force (SAMI)
Institute for Defense Analyses
Human Resource Research Organization
The Rand Corporation

CRC 505 / July 1983

WOULD A DRAFT SAVE THE NAVY MONEY? A NEW LOOK

James S. Thomason



Naval Studies Group

CENTER FOR NAVAL ANALYSES

2000 North Beauregard Street, Alexandria, Virginia 22311

ABSTRACT

This report assesses the Navy's potential budgetary savings from a return to peacetime conscription. Previous estimates are summarized first. Then the report explores the sensitivity of results to assumptions about key factors, including the numbers of draft-induced accessions, first-term pay, and recruiting costs as well as reenlistment probabilities of draft-induced accessions. Implications for the future of the All-Volunteer Force are addressed.

TABLE OF CONTENTS

	<u>Page</u>
List of Illustrations	v
List of Tables	v
Introduction	1
Approach and Findings	2
Discussion	8
Notes	10
References	13
Appendix A: Calculation of Recruiting and Retention Costs	A-1 - A-3

LIST OF ILLUSTRATIONS

	<u>Page</u>
1 Possible Navy Costs and Benefits of Draft-Induced Volunteers	5
2 Potential Net Effects of Army Draft on Navy Budget: Policy Context I (No Pay Cut)	6
3 Potential Net Effects of Army Draft on Navy Budget: Policy Contexts I and II	7

LIST OF TABLES

	<u>Page</u>
1 Past Estimates of Budget Savings From a Peacetime Draft	1
2 Assumptions About Draft-Induced Volunteers	3

INTRODUCTION

The purpose of this report is to assess the effect on the Navy's budget of a return to peacetime conscription in the United States. Almost all observers and military analysts believe a draft would be less expensive in budget terms than an all-volunteer force (AVF). While earlier estimated savings from a draft do vary greatly depending on whether and how much first-term pay would be cut, and while it is often not clear in previous budget estimates that the costs of sustaining the same force via a draft and an AVF are being compared, all estimates containing a first-term pay cut in the draft case indicate that conscription would be cheaper, as table 1 shows.

TABLE 1
PAST ESTIMATES OF BUDGET SAVINGS
FROM A PEACETIME DRAFT

Study (year)	Level	Estimated annual savings			First-term pay cut
		Orig. \$	1982 \$	% budget ^a	
Gates (70)	DoD	1.5 B	2.7 B	2	Yes
GAO (73)	DoD	4.0 B	7.3 B	5.3	Yes
Rand (77)	DoD	0.3 B	0.6 B	0.4	No
	DoD	1.8 B	3.3 B	2.4	Yes
	DoD	-2.0 B	-3.6 B	-2.7	No
OSD (78)	DoD	0.3 B	0.5 B	0.2	No
	DoD	2.5 B	4.6 B	3.3	Yes
CNA (79)	DoN	10 M	13 M	0.33	No
OpNav (79)	DoN	-20 M	-26 M	-0.66	No

^aDoD FY 1971-74 average budget, \$75 billion; DoN FY 1979 budget, \$34.5 billion. Sources: [1], [2], [3], [4], [5], [6].

However, a careful review of these earlier estimates revealed a curious and potentially significant flaw. They do not take proper account of an important extra cost of a draft: the added cost of sustaining an adequate flow of first-term personnel into the career force—given that draftees and draft-induced volunteers are less likely to reenlist than true volunteers.¹ While it seemed unlikely that these extra costs would actually reverse the budget comparisons, once they were properly accounted for it was conceivable that the alleged budget savings from a draft would disappear. Though it is also possible that some observers would misconstrue a new budgetary assessment as an acid test for choosing the most appropriate military personnel procurement mechanism for the nation, a draft/AVF comparison including these costs

can have useful consequences. It will provide a more objective picture of the potential budget savings for the Navy from a draft. It may also have policy implications for the all-volunteer force itself. We have now looked at the issue for the Navy. This report provides the results and then considers the implications for the structure of the all-volunteer force.

APPROACH AND FINDINGS

If the United States returned to peacetime conscription, the Army is almost certain to be the only drafting service.² Furthermore, annual draft calls seem unlikely to exceed 50-100 thousand per year.³ If a draft of this sort were instituted, the Navy would receive enlistment applications from men who would not otherwise try to enlist but who prefer to enlist in the Navy to being drafted or facing the continuing risk of being drafted. (For a treatment of these possibilities see [7].) We will refer to these applicants as "draft-induced" or "reluctant" volunteers; without the threat of a draft (and some other additional incentive), they would not volunteer.

There was no sure way to know how many draft-induced applicants the Navy would get.⁴ To cope with this uncertainty and still conduct a fair budget comparison, we decided to assess the budget costs to the Navy of using an AVF versus a range of mixes of true volunteers and draft-induced accessions to achieve the same manning objectives. In these comparisons, we made several assumptions. First, we assumed that only the Army actually drafts personnel. Second, we assumed that draft-induced volunteers would be cheaper for the first term than true volunteers of the same quality, but less likely to reenlist and thus more costly to retain beyond the first term. In short, the threat of being drafted would induce them to join the Navy and stay through the first term but no longer.

The precise relative costs to the Navy of recruiting and retaining draft-induced and true volunteers are also unknown.⁵ We therefore decided to assess the effect on the Navy budget of accessing draft-induced volunteers under three different sets of assumptions: a "pro-draft," a "pro-AVF," and a more or less "neutral" set. They are summarized in table 2.

We next established the enlisted manning objectives the Navy would need to achieve with or without a draft. Since very few draft-induced volunteers are likely to enlist for 6 years, we focus on 4-year obligors in this analysis. The "notional" force and manning objectives used here represent recent 4-year obligor flows as follows. Just over 50,000 non-prior-service males with 4-year active duty contracts will be added each year. Seventy percent of these accessions must be high school diploma graduates. Sixty-three percent of them will be eligible to reenlist for a second term. Of these reenlistment "eligibles," the Navy must get

roughly 7,000 to reenlist for a second term. (See [10] for further discussion of these parameters.)

TABLE 2

ASSUMPTIONS ABOUT DRAFT-INDUCED VOLUNTEERS
(Relative to true volunteers)

<u>Variant</u>	<u>Recruiting cost</u>	<u>Reenlistment probability</u>
"Pro-AVF"	Half	Zero
"Pro-Draft"	Zero	Half
"Neutral"	Half	Half

This was not the only possible set of objectives, but it does permit us to compare the costs of manning the same force in a draft and an AVF. After describing the costing assumptions and our initial findings, we consider the implications of some different assumptions about Navy accession and reenlistment requirements.

Finally, we also examine the budget costs to the Navy of using true and draft-induced volunteers in two fundamentally different policy contexts: without and with first-term pay adjustments. In the first context, first-term pay stays at the same level in AVF and draft cases. In the second context, it may differ. In this latter context, for example, we can gauge the savings from lowering first-term pay more in the draft than in the AVF case.

Overall, therefore, we developed three budget comparisons ("pro-draft," "pro-AVF," and "neutral" cases) within each of two policy contexts. To actually make the comparisons, however, we still needed to determine the specific types of cost differences from an AVF that would result for the Navy from accepting draft-induced volunteers. Eventually, we made two assumptions for this purpose. In both policy contexts we assumed that draft-induced volunteers would cost less to recruit but more to retain than true volunteers. In the first policy context we also assumed that there would be no other significant differences between the AVF and draft cases.⁶ In the second policy context, however, we assumed that the Navy, or at least DoD, can reduce first-term pay more in the draft than in the AVF--by a percentage of AVF first-term pay equal to the percentage of high-quality draft-induced volunteers among total annual high-quality accession requirements.

Since a new GI bill might accompany a draft, some observers assert that any attendant expense would be an extra cost of conscription. This

is not certain. A GI bill might not be revived for peacetime conscription, while it might be revived in the AVF, as numerous recent legislative proposals attest. Indeed, both the costs of such bills and their chances of being implemented are unclear. Moreover, the costs might even come from a non-defense account and not from DoD or military service budgets. For at least these reasons, figuring the expected extra budget costs to the DoD or the Navy of a GI bill in a draft context is a murky problem. Although it might bias our estimates toward a draft, we assume here that a GI bill would not be a significant extra cost of conscription to the Navy.

Lastly, in what follows we will be assessing the costs of manning a force of a given quality level. It is true that the higher the quality of the force being manned, the greater the budgetary advantage of a draft. But because it is not clear that the Navy requires a higher-quality force than the one stipulated for our comparisons, we have not engaged in any "what-if" games on the subject.

Given these assumptions, and using the best available Navy recruiting cost and reenlistment supply functions [12, 13, 14], figure 1 depicts both the recruiting cost savings and extra reenlistment bonus costs in the first policy context for various percentages of draft-induced accessions compared with the AVF case. (See appendix A for the method of calculation.) There are two recruiting cost savings curves shown. As summarized in table 2 above, the "pro-draft" version posits that the Navy gets all its draft-induced accessions with no extra recruiting effort, while the "pro-AVF" version posits that draft-induced volunteers cost half as much as true volunteers to recruit. Of the two reenlistment cost curves, the "pro-AVF" version assumes that that no draft-induced volunteers will reenlist, while the "pro-draft" version assumes that they reenlist half as often as true volunteers. The true values of the costs to recruit and the reenlistment probabilities of draft-induced volunteers are not known. Given this uncertainty, the advantage of our approach is that it allows us to explore the sensitivity of the budget comparisons to different assumptions.

The general shapes of the curves reflect the increasing marginal cost to recruit more "quality" accessions and the increasing marginal cost of obtaining additional reenlistees of given quality.⁸ However, the key point about these estimates is that the Navy's net gain from accepting draft-induced volunteers in the first policy context is taken as equal to the recruiting costs saved minus the extra reenlistment bonus costs incurred.

Figure 2 presents the results of our first three comparisons. They are instructive. The Navy could as easily lose money as save it with draft-induced accessions in this policy context.⁹ But the most striking result is the proportion of the Navy's budget at stake. Even at 15-percent draft-induced accessions, for example, figure 2 shows net savings from a draft in the "pro-draft" version of only about 20 million

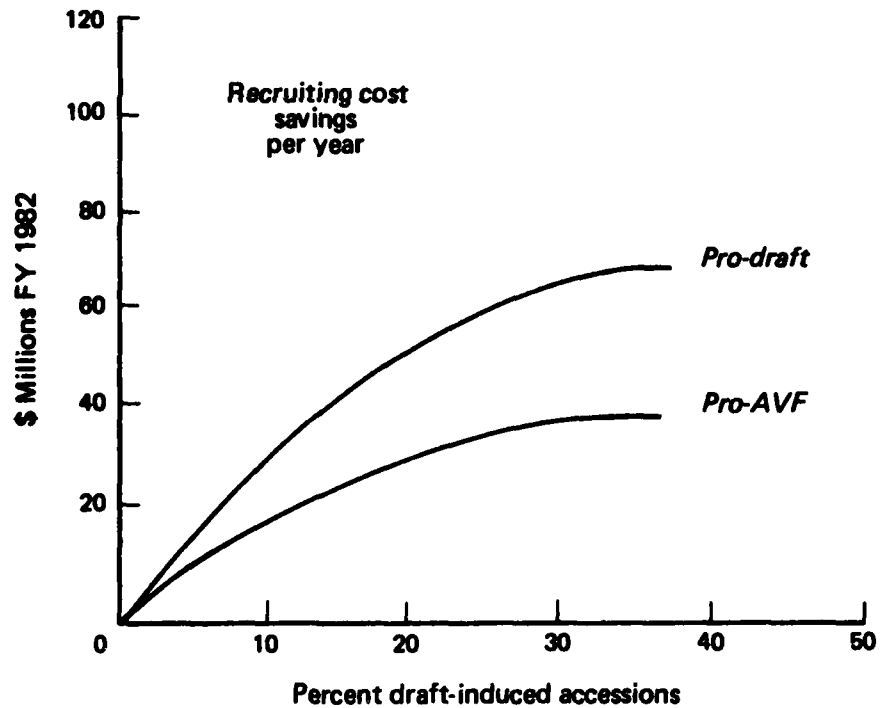
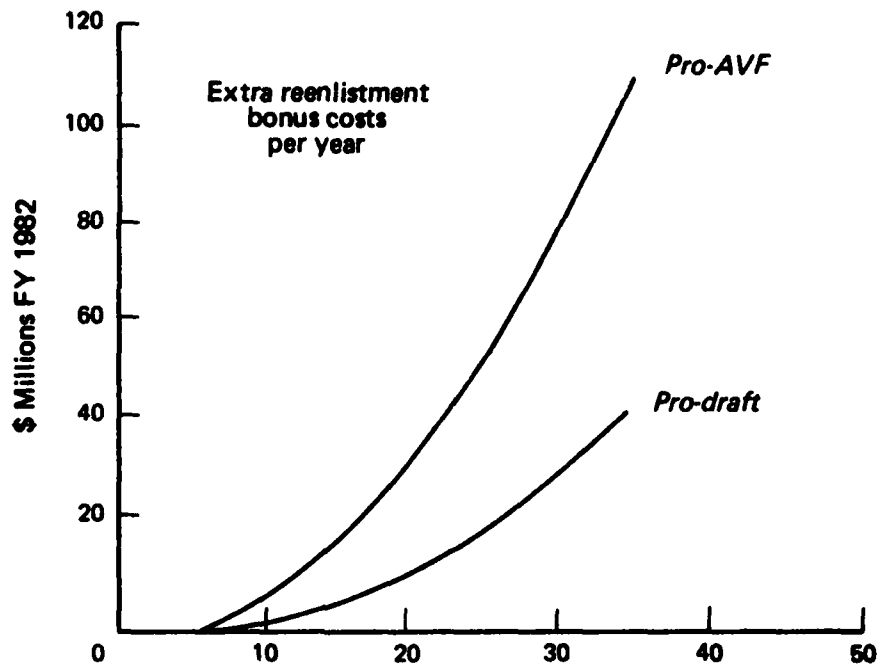


FIG. 1: POSSIBLE NAVY COSTS AND BENEFITS OF DRAFT-INDUCED VOLUNTEERS: POLICY CONTEXT I (NO PAY CUT)

FY 1982 dollars, less than one-tenth of 1 percent of the Navy's budget that year. In this context, then, there seems to be little potential budgetary gain for the Navy from a draft.

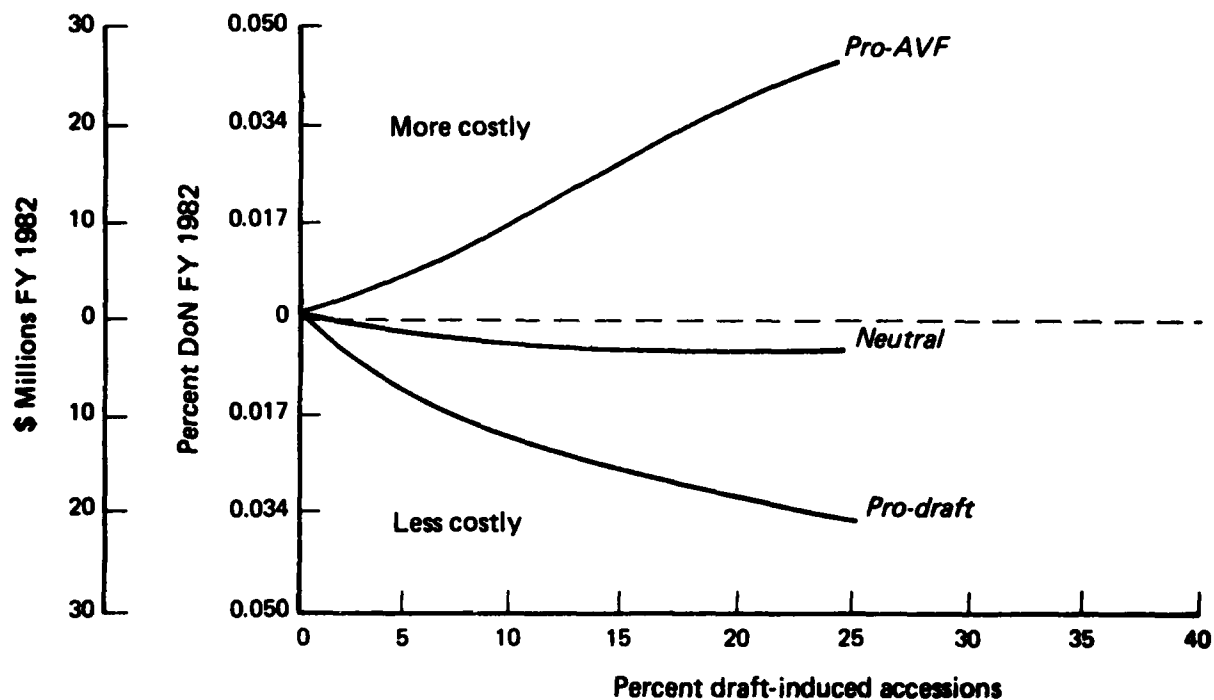


FIG. 2: POTENTIAL NET EFFECTS OF ARMY DRAFT ON NAVY BUDGET: POLICY CONTEXT I (NO PAY CUT)

As mentioned earlier, however, this is not the only possible policy context. What is the Navy's potential budgetary gain from a draft assuming that it could adjust first-term pay levels as it tries to minimize the cost of meeting the manning objectives in both the AVF and draft cases? In this context, the net budget gain for the Navy from taking in draft-induced accessions equals the sum of any net first-term pay savings, any net extra recruiting costs (or savings), and the extra reenlistment bonus costs associated with maintaining a given flow into the career force.¹⁰

Figure 3 provides these pay-cut comparisons. For perspective, it also shows the no-pay-cut comparisons once again. Assuming that 15 percent of Navy accessions were draft-induced in the pay cut context, we estimate that the Navy could save between 150 and 200 million dollars a year.¹¹ While a gain of this size is still not a large part of the Navy's budget (less than one-third of 1 percent), neither is it trivial.

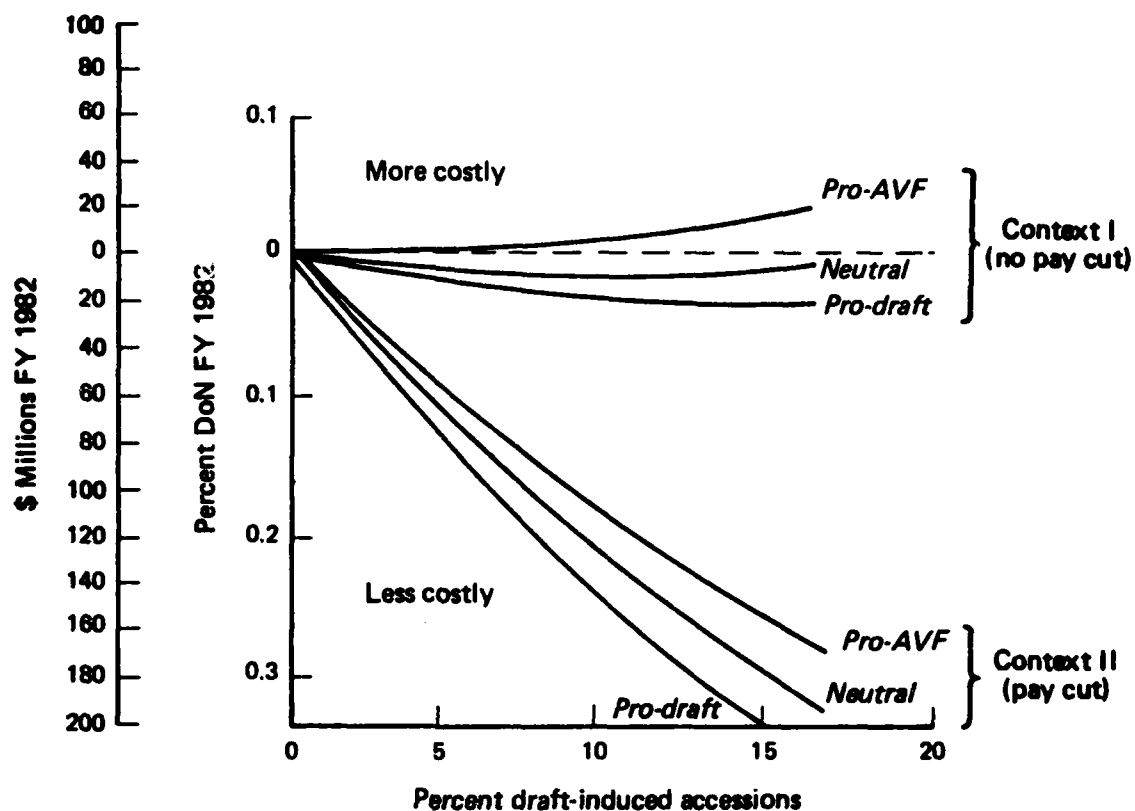


FIG. 3: POTENTIAL NET EFFECTS OF ARMY DRAFT ON NAVY BUDGET: POLICY CONTEXTS I AND II

These results strongly suggest that only if first-term pay were reduced could the Navy achieve a non-trivial budget gain from the draft. And yet only if the Navy can also use most of any such first-term pay savings would it actually gain in budget terms from a draft.

It is hard to predict how amenable the Congress or Department of Defense would be to letting the services themselves use such pay savings for other purposes. After all, a return to conscription in peacetime seems most likely to happen in an effort to trim overall military spending. Therefore, for draft advocates to bet that the Navy would get to use first-term pay savings generated by a potential draft does not seem a good way to "make money."

Our comparisons thus far have varied several key factors, including the numbers of draft-induced accessions, the relative costs to recruit

and the reenlistment probabilities of draft-induced versus true volunteers, as well as the prevailing policy context vis-a-vis first-term pay rates. But the manning objectives have been held constant. In practice we stipulated that the Navy must maintain an enlisted force of the same size with identical length-of-service and quality distributions, regardless of whether it has an all-volunteer or a partly draft-induced force. In short, our comparisons have assessed a plausible range of relative costs of attaining these specific manning objectives in an AVF versus a draft.

The fairest cost comparison probably would not stipulate accession or reenlistment requirements at all. It would specify only that the Navy maintain a force of equal total productivity, or capability, whether in an AVF or a draft, allowing accession and reenlistment flows to adjust to their respective (and probably different) cost-minimizing optima in each case. The next section of this paper briefly addresses the possibilities for such a comparison and the implications of our analysis for the future of the all-volunteer force.

DISCUSSION

Our analysis shows that so long as the mix of first-termers and careerists is kept more or less at today's levels, the Navy is unlikely to save much money from a draft. But the experience mix is important. After all, draft advocates properly claim that the main budgetary advantage of a draft is a large supply of cheap first-termers. A comprehensive budget comparison would allow the mix to vary, holding constant only total productivity (or capability, readiness, etc.) of the force. To our knowledge no such analysis has ever been done.

A key problem has been the lack of good data on the relative productivity of first-termers and careerists. However, some recent CNA work concerning relative productivities [15, 16] should soon permit AVF/draft budget comparisons in which the mix of these two inputs may vary.

For now, one of the most striking lessons of the comparisons we have made is that even moderate (10-15 percent) reductions in average first-term wages constitute hundreds of millions of dollars in potential yearly savings for the Navy. If there were some way to capture these savings without conscription, this would be a significant step.

CNA work [11] on the marginal value of recruiters and advertising versus enlistment bonuses as accession tools is again relevant here. In that work, more recruiters and advertising are estimated to be the least costly way to maintain the Navy's desired levels of high-quality accessions as the civilian youth cohorts shrink in the late 1980s and early 1990s. Just how far the estimates can be taken is not certain, but the clear implication is that first-term wage rates are higher than optimal. For example, if first-term pay were allowed to atrophy in real

terms by 10 percent over the next several years, and if recruiter and advertising effort were increased accordingly, the Navy could potentially save several hundred million dollars each year. And it could presumably do so without ever resorting to a draft or even changing the first-term/careerist mix. With this savings potential, we believe the Navy should advocate first-term pay increases in the AVF only if they would be the most efficient use of the marginal manpower dollar.

Seasoned military manpower policy makers, however, suggest two key obstacles here. First is the idea that while pay is a tangible incentive, recruiters and advertising look mostly like "smoke and mirrors." The response is that good recruiters and advertising can inform potential recruits of quite tangible though non-pecuniary benefits, such as training and experience. The response to that argument is that the market should have delivered this information to applicants anyway. But this is not fully persuasive. The market is not perfect, and, after all, the empirical evidence thus far is that first-term wages are higher, and recruiters and advertising budgets lower, than optimal. This evidence is worth exploiting.

The second obstacle is more serious. Just what incentives do the services have to initiate budget savings changes? This is a pervasive problem in military manpower planning. In particular, why should the services promote changes that could result in more efficient use of the taxpayers' dollar but might actually lead Congress to reduce military budgets--on the grounds that if this saving was so easy to find, more can be found if the services would only look a little harder.

The only "solution" to this second obstacle, it seems, is compromise bargains and commitments negotiated by the Navy and DoD on a continuing basis in the political arena. That is, of course, the role of good leadership--to bargain and then encourage risk-taking in the proper direction so as to move the system toward better use of available resources.

NOTES

1. While most observers appear to recognize the nature and direction of this effect, they may have been deterred from explicitly incorporating this factor given uncertainty as to the relative reenlistment probabilities of draft-induced volunteers. Our approach, as will become clear, is to deal with the uncertainty directly by positing a plausible range of relative rates and then assessing the sensitivity of the budget comparisons to them.
2. This is the overwhelming consensus among observers we checked. For interesting historical data on inductions by service during the Vietnam war, see "Summaries of Enlisted Personnel Procurement," OASD Comptroller, selected years. During the entire Vietnam war, for example, the Navy drafted only a couple of thousand men and the Air Force drafted none at all.
3. No one knows for certain. The most recent DoD Manpower Task Force [7] viewed a small active-duty Army draft in this range as most probable if the draft were revived. A review of possible draft scenarios several years ago by GRC [8] found a small active-duty draft the most likely, too.
4. One approach might be to estimate the expected numbers of applicants as a function of the size of the draft calls times the relative preference for enlistment in the Navy compared with other services in the group subject to the draft call. Yet there is uncertainty about both factors. The approach we adopt finesses both types of uncertainties and allows us to examine relative costs over a range of plausible draft-induced accession levels.
5. Even the plausible ranges are uncertain here. To our knowledge no work has been done on relative recruiting costs. As for relative reenlistment probabilities, Grubert and Weiher [1] found very mixed results in attempting to estimate the effect. Thomason [9] is now conducting an analysis for OSD (MRA&L) which indirectly estimates the effect using Navy data for 1974-82.
6. We tried to avoid "what-if" games vis-a-vis questions like average pre-EAOS attrition rates of draft-induced vs. true volunteers or average contract lengths of one group vs. the other. There are many arguments, pro and con, as to whether there would be significant differences between draft-induced and true volunteers along these dimensions in the Navy. Our approach was to examine the sensitivity of our results to variation along four critical dimensions: (1) relative recruiting costs and (2) reenlistment probabilities of draft-induced volunteers; (3) the percentage of accessions who are draft induced; and (4) first-term pay policy. Interested parties can easily recalculate the budget comparisons

with alternative assumptions now that the basic framework has been established.

7. In this analysis we made the following assumptions:

- (1) Only high school diploma graduate (HSDG) volunteers are supply limited.
- (2) The Navy knows the shape of the true-volunteer supply curve for HSDGs.
- (3) The Navy can adjust its first-term wage offer to attract the HSDGs it must attract with enlistment incentives to meet stipulated manning objectives (52,200 4Y0 accessions annually of whom 70 percent must be HSDGs).
- (4) 70 percent of draft-induced accessions will be HSDGs.
- (5) Draft-induced HSDGs do not have to be recruited with a wage offer.
- (6) From empirical estimates by Goldberg [11], we assume that the supply of true volunteer HSDG enlistments has an elasticity of one vis-a-vis E1-3 average pay.

Given these assumptions, for these comparisons we thus assume that the Navy can reduce its first-term E1-3 wage offer by 1 percent for each percent reduction in true-volunteer HSDGs who must be recruited annually. This in turn means that the E1-3 wage offer can be reduced by 1 percent for each percent of total accessions that are draft induced. Finally, in FY 1982 first-term pay for E1-E3s totalled approximately \$1.4 billion.

8. In other words, the recruiting cost function implies that the savings from not having to recruit the Nth recruit (of a given "quality") will be greater than half the savings from not having to recruit the Nth and the (N-1)th recruits. Increasing marginal reenlistment costs mean that the bonus needed to retain the Nth reenlistment eligible will on average be greater than the bonus needed to retain the (N-1)th reenlistment eligible of the same "quality."
9. Whether the Navy would actually lose money compared with the AVF case would probably also depend on whether it could get draft-induced volunteers to identify themselves before enlistment. If so, the Navy could simply strongly discourage them from joining if it was not in the service's interest to have them join. But the fundamental point is that even the potential budgetary gain is extremely small here.
10. OSD (MRA&L), in [4], suggests that the Navy's fair share of OSD Selective Service costs for large-scale registration and AFES testing would have been an extra \$15-20 million a year (in FY 1982 dollars). A problem with assigning such a fair share of this cost

to the Navy is that it is not clear it would actually need to pay it. The Navy's budget might simply be increased accordingly.

11. In this second policy context, a 15-percent pay cut in E1-3 wages would itself amount to just over \$207 million (FY 1982). However, this may actually overestimate draft savings by as much as two-thirds at any given percentage of 4YO accessions who are draft induced. Recall that in these calculations we assume: (a) a first-term (E1-3) pay elasticity of one vis-a-vis HSDG supply and (b) that the total number of HSDGs the Navy must attract via pay declines by 1 percent for each percent of 4YO accession requirements who are draft induced. Yet only about 60 percent of the Navy's total annual HSDG accession requirements are 4YOs. Almost all the rest are either 5YOs or 6YOs. After taking proper account of these other HSDG accession requirements, it is probably more realistic to assume that the Navy could only cut first-term E1-3 pay by 6 percent, not 10 percent, for each 10 percent of its (4YO) accessions who are draft induced. At 15-percent draft-induced accessions, this qualification implies net draft savings of between \$100 to \$120 million per year, not \$150 to \$00 million as figure 2 suggests.

REFERENCES

- [1] Studies Prepared for the President's Commission on an All-Volunteer Force. Washington, D.C.: U.S. Government Printing Office, Nov 1970
- [2] General Accounting Office, Report B-177952, "Problems in Meeting Military Manpower Needs in the All-Volunteer Force," May 1973
- [3] Rand Corporation, R-1450-ARPA, "Military Manpower and the All-Volunteer Force," by Richard V.L. Cooper, Sep 1977
- [4] Office of the Assistant Secretary of Defense (MRA&L), "America's Volunteers; A Report on the AVF," 31 Dec 1978
- [5] CNA, Memorandum 79-1250, "AVF versus Draft; Navy Cost/Benefit Comparisons," 22 Aug 1979
- [6] Memorandum to the Chief of Naval Operations, CNO serial 110C2/269006, "AVF vs. Draft Issue: Cost of the Draft," Jun 1979
- [7] A Report to the President on the Status and Prospects of the All-Volunteer Force Military Manpower Task Force, Nov 1982
- [8] General Research Corporation, Report 1152-01-81-CR, "The Implications of a Return to Conscription for Navy Accession and Retention Profiles," Feb 1981
- [9] CNA, Research Contribution, "Navy Reenlistments: The Effects of Draft Pressure and the G.I. Bill," by James Thomason, forthcoming
- [10] CNA, Memorandum 82-0789.10, "Balancing Accession and Retention: The Disaggregate Model," by Deborah Clay-Mendez, 23 Aug 1982
- [11] CNA, Study 1168, "Enlistment Supply: Past, Present and Future," by Lawrence Goldberg, Sep 1982
- [12] CNA, Memorandum 82-0132.10, "Documentation for the Recruiting Cost Estimates Utilized in the Navy Comprehensive Compensation and Supply Study," by Deborah Clay-Mendez, 30 Sep 1982
- [13] CNA, Memorandum 82-0079, "A Minimum Recruiting Cost Function for Male High School Graduates," by Deborah Clay-Mendez, 19 Jan 1982
- [14] CNA, Professional Paper 337, "The Influence of Non-Pecuniary Factors on Labor Supply," by John T. Warner and Matthew S. Goldberg, Dec 1981

REFERENCES (Cont'd)

- [15] CNA, Memorandum 82-1525.10, "The Growth of Productivity in the First Term," by Aline O. Quester and Alan J. Marcus, 3 Jan 1983
- [16] CNA, Memorandum 83-0345, "Balancing Accession and Retention: Cost and Productivity Trade-offs," by Ellen Balis, 9 Mar 1983
- [17] CNA, Professional Paper 322, "Issues in Navy Manpower Research and Policy: An Economist's Perspective," by John T. Warner, Dec 1981

APPENDIX A

CALCULATION OF RECRUITING AND RETENTION COSTS

APPENDIX A

CALCULATION OF RECRUITING AND RETENTION COSTS

RECRUITING COSTS

Goldberg [11] has estimated the cost to recruit a new true-volunteer Navy recruit. Clay-Mendez [13] has developed a recruiting cost function for 4-year-obligor HSDGs. Warner [17] finds these estimates the most generally credible.

To calculate the recruiting cost savings associated with any given draft-induced accession level in the constant-pay policy context, we used Clay-Mendez's HSDG recruiting cost function [13, p. 4] after converting it to FY 1982 dollars. For the AVF case we applied the function assuming that 70 percent (36,540) of the stipulated annual accessions were to be HSDGs. We estimate the AVF cost would have been \$99.3 million in FY 1982 dollars. Then, we estimated the number of draft-induced HSDGs available to the Navy at no recruiting cost at the various draft-induced accession levels. After subtracting this number (of "free" HSDGs) from the number of HSDGs that had to be actively recruited in the AVF case, we calculated the total recruiting cost associated with each draft-induced accession level and, finally, took the difference between the AVF case (\$99.3 million) and the total cost in each draft case as the relevant recruiting cost savings.

We estimated the number of "free" HSDGs associated with each draft-induced accession level as follows:

We first assumed, in an explicit attempt to compensate for any pro-AVF bias that might have unintentionally entered this analysis, that all draft-induced accessions would be HSDGs. Then, for the "pro-AVF" variant shown in figure 1, we assumed that only half of these draft-induced accessions would actually be costless to recruit; the other half would cost as much as true-volunteer HSDGs. In the pro-draft variant, all of the draft-induced accessions are assumed to be costless to recruit.

In the second policy context, the AVF-case recruiting cost estimate is assumed to be the same as in the constant-pay context. But we estimate the draft-case recruiting costs in the second context to be higher than in the first context because pay has been "reduced" in the draft cases--compared with both the draft cases in the first context and the AVF case in the second context. To adjust this recruiting cost function for various pay cuts, the key was to recalculate the constant in the recruiting cost function, following the procedure described in Clay-Mendez [13, p. 13].

EXTRA RETENTION COSTS

We assumed here that the least costly way for the Navy to obtain more reenlistees would be to increase reenlistment bonuses. Using an all-Navy pay responsiveness coefficient with respect to first-term (Zone A) reenlistment rates as estimated by Warner [17] and found to be plausible by Goldberg and Warner [14] in more recent work, we calculated the extra reenlistment bonus costs associated with various levels of draft-induced accessions as follows. First, at any given level of draft-induced accessions we determined the reenlistment rate

$\left(\frac{\text{reenlistees}}{\text{"true volunteer eligibles"}} \right)$ needed to meet the required reenlistment level. In

the AVF case, this was estimated to be .2125, from [10]. In each draft case, the required number of reenlistees was taken as the same as in the AVF case (6,956), but the number of true-volunteer eligibles was smaller because not all draft-induced volunteers were assumed to be willing to behave as true volunteers vis-a-vis the reenlistment decision. Specifically, as shown in table 2, in the "pro-AVF" variant no draft-induced volunteers are assumed to be willing to reenlist. In the "pro-draft" variant, half the draft-induced volunteers (who "survive" to the "reenlistment eligibility point") are assumed to be willing to reenlist at the same rate as true volunteers; the other half are assumed to be unwilling to reenlist. Given these assumptions, we were then able to estimate the number of "reenlistment eligibles" in each draft case willing to behave as "true volunteers" vis-a-vis the reenlistment decision. Let us call these people "effective true volunteer eligibles," or ETVES. In each draft case, then, the number of reenlistees required (6,956), divided by the number of ETVES equalled the reenlistment rate needed to obtain that required number of reenlistees.

Given the "required reenlistment rate" for each draft case, we then used the following function to calculate the associated extra reenlistment bonus cost (compared with the cost of the reenlistment bonus program needed in the AVF case to sustain a reenlistment rate of .2125).

The basic reenlistment supply equation we used was as follows:

$$dR/dAMC = \beta(PR_B(1-PR_B))$$

where dR = the increase in the AVF reenlistment rate (PR_B) required to sustain a flow of 6,956 reenlistees annually in any given draft case

$dAMC$ = the dollar change in annualized military compensation per reenlistee (in FY 1979 dollars) estimated to lead to a 1-percent increase in PR

β = a Navy-wide coefficient of the responsiveness of the first-term reenlistment rate to changes in AMC. This is taken as equal to .000227 and is roughly comparable to an elasticity of 2.0

PR_B = the base case AVF average first-term reenlistment rate of Navy "true volunteer" 4-year-obligors, i.e., .2125.

Our cost calculations indicate that for each percentage point the Navy decides to increase the reenlistment rate above the base reenlistment rate, it will need to offer each reenlistee an additional \$352.5 in annualized military compensation (FY 1982 dollars). This can be taken as an additional average reenlistment bonus offer of \$1229 (FY 1982 dollars) per reenlistee for each percentage point above PR_B the Navy desires to raise the first-term reenlistment rate. Note that this extra bonus offer will also need to be paid to all reenlistees. Accordingly, we estimate that for each percentage point above PR_B the Navy desires to raise the first-term reenlistment rate, it will need to pay \$1229 to each reenlistee, for a total of \$8.548 million assuming that there are to be 6,956 reenlistees.

END

FILMED

1-84

DTIC