

THE ECONOMIC COST OF THE DRAFT*

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The draft represents one means of supplying the armed forces with qualified personnel. Under the current draft, accessions to military service are of three types: (1) true volunteers who freely choose military service over alternative civilian job opportunities, (2) reluctant volunteers who enlist in preference to being drafted, and (3) draftees who are involuntarily inducted. The last two groups are coerced to serve by the military service obligation that is imposed by the current draft law.

In times of war when nearly everyone must serve to assure the defense of the nation, alternatives to a draft are judged to be too costly or infeasible. Peacetime demands for military personnel are, however, considerably smaller, with the consequence that a draft becomes selective. Debates over the equity of the selection process (which under the current draft translates into deferment policies) are symptomatic of a search for an alternative to current military manpower procurement policies. To say that a particular alternative such as an all-volunteer force¹ is preferable to the current system implies that the cost of the alternative is, in some sense, lower than the cost of the current draft. If the draft were abolished, military pay and other recruitment incentives must be improved to attract sufficient recruits to meet prescribed military manpower objectives. In his statement before the House Armed Services subcommittee, the Hon. T. D. Morris (Assistant Secretary of Defense) indicated that an all-volunteer force of 2.65 million men would increase the annual military payroll budget by \$4 to \$17

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¹ The current draft law (the Universal Military Training and Service Act of 1951 as amended and extended) expires on June 30, 1967. The proposed alternatives to an extension of the present law include (1) lottery at a younger age of induction, thereby shortening the period of draft liability, (2) universal military service, (3) equivalent national service wherein some youths could serve in the Peace Corps, VISTA, or other government sponsored programs, and (4) establishment of a voluntary professional army.

billions.² The military payroll of the Department of Defense (hereafter abbreviated DOD) is not the economic cost of labor resources allocated to the uniformed services. The draft has surely affected both the level and structure of military pay. Moreover, many of the men who serve are conscripted or are recruited under the threat of a draft liability. In addition to the costs borne by those who do serve, it is argued that the uncertainty of being drafted creates other real and psychic costs for those who avoid military service by obtaining deferments.

The cost of acquiring and retaining military personnel can be measured in several ways of which the budgetary cost is one. The financial cost to the economy is defined in this paper as the value of civilian outputs that could have been produced by the labor resources which were allocated to the armed forces. This concept which completely ignores occupational preferences provides a measure of technical efficiency in terms of civilian outputs that were foregone to achieve given levels of military preparedness. The full economic cost of the draft must, however, acknowledge occupational preferences for military versus civilian employments. If an individual has an aversion to service life, he could, in principle, be compensated by enough to induce him to volunteer. Presently, individuals who would require such compensation are forced to serve by the draft law. In this paper, I propose to compare these costs for two hypothetical forces with the same active duty strength of 2.65 million men: one a purely voluntary force and the other a mixed force composed of conscripts, true and reluctant volunteers.

I. *Force Strengths and Military Manpower Requirements*

The labor resources demanded by the armed forces can be measured by force strengths. The force strength is simply a stock demand for military personnel unadjusted for the quality of servicemen or the proportion in an effective status.³ The total defense establishment can conveniently be divided into three forces: (1) officers on active duty, (2) enlisted men on active duty, and (3) paid drill reserves. The last component engages in active duty for training only and is rarely used to bolster active duty strengths.⁴

In the six years prior to the Vietnam build-up, the average strength

²House of Representatives, 89th Cong., Second Sess., "Review of the Administration and Operation of the Selective Service System," Hearings before the Committee on Armed Services (June 22, 23, 24, 28, 29, and 30, 1966) (hereafter abbreviated as *House Hearings*), pp. 9923-59; see especially pp. 9936-40.

³The effective strength is defined as the number of men who are not in a "training status." Men who are being trained or who are engaged in training others are deducted from total force strength to arrive at the effective strength. A lower personnel turnover would therefore lead to a larger proportion in an "effective" status.

⁴In the last decade, reservists were recalled to active duty in significant numbers only once. During the Berlin crisis of FY 1962, some 111 thousand Army and National Guard reservists were activated to raise Army force strengths from 858.6 to 1,066.4 thousand,

in all active and reserve components was just under 3.7 million men of which 2.6 million were on active duty (see Table 1). The fluctuations in active duty strengths are largely due to international tensions. Since a discussion of the factors which determine force strength objectives is beyond the scope of this paper, the peacetime strength objectives are taken to be exogenous.

A more meaningful demand concept is provided by the gross flow demand for accessions from civilian life. It is the number of required accessions A_t that must be recruited or conscripted to replace losses during the year L_t and to achieve changes in stock demands ($S_t - S_{t-1}$).

$$A_t = L_t + (S_t - S_{t-1})$$

If force strength S_t is held constant, required accessions must equal losses which arise because of voluntary separations upon completion of obligated tours of duty, retirements, deaths, and discharges for medical and unsuitability reasons.

The military manpower procurement channels which have evolved under a draft have strongly influenced the characteristics of servicemen. Of the 645 thousand annual accessions to military service in FY 1960-65, 539 thousand (83.6 percent) entered through a variety of voluntary programs. An individual can discharge his service obligation by entering active duty forces as an enlisted man or officer. He can accomplish the former as a voluntary enlistment or as an involuntary draftee, usually to the Army.⁵ Except for the doctors and dentists draft, all officer procurement programs are voluntary. Finally, the draft liability can be satisfied by entering a reserve or National Guard unit which requires active duty only for training. The historical trends in accessions and projected accessions in FY 1970-75 under a continued draft are shown in the lower panel of Table 1. In order to extrapolate the characteristics of men who are likely to enter military service in the future, it is convenient to study the service experience of age classes (cohorts) born in specific years.

The disposition of military service obligations by men born in 1938 was estimated from a sample of Selective Service registrants.⁶ By July, 1964, 51.6 percent of this age class had some active or reserve military service with the highest participation rate of 59.5 percent for men with some college education. Given current physical, moral, and mental

⁵ A few delinquents (mainly reservists who fail to attend drill meetings) are drafted into the other three services. The Navy drafted some men in FY 1956, and the Marines in FY 1966. Some voluntary enlistments serve in two-year active duty reserve programs offered by the Navy and Marine Corps. The Army offered a two-year reserve enlistment in 1956, but the program was dropped in 1958.

⁶ Confer *House Hearings*, p. 10011.

TABLE 1
FORCE STRENGTHS AND ACCESSIONS FROM CIVIL LIFE
(Actual FY 1960-65 and Projected FY 1970-75, in Thousands)

	1960	1961	1962	1963	1964	1965	Annual Averages	
							1960-65	1970-75*
Force strengths†								
DOD (active duty) total.....	2,476.4	2,483.8	2,807.8	2,697.7	2,685.2	2,653.1	2,634.0	2,650.0
Officers.....	316.7	314.8	343.1	333.4	336.4	337.6	330.3	340.0
Enlisted.....	2,159.7	2,168.9	2,464.7	2,364.3	2,348.8	2,315.5	2,303.7	2,310.0
Army (active duty) total.....	873.1	858.6	1,066.4	975.2	972.4	968.3	952.3	969.5
Officers.....	101.2	99.9	116.1	107.8	110.3	111.5	107.8	112.5
Enlisted.....	771.8	758.7	950.4	867.4	862.2	856.8	844.6	857.0
Reserves and National Guard (paid drill)	1,079	1,086	938	964	1,048	1,006	1,023.5	—
All components total.....	3,555.4	3,569.8	3,765.8	3,661.7	3,733.2	3,659.1	3,657.5	—
Accessions from civil life								
DOD total.....	469.8	475.3	622.4	488.0	569.3	495.0	520.0	507.7
First enlistments‡.....	349	386	423	373	377	352	376.7	416.7
Inductions‡.....	90	60	158	74	151	103	106.0	55.3
Officers§.....	30.8	29.3	41.4	41.0	41.3	40.0	37.3	35.7
Army.....	206.3	188.6	303.2	203.0	285.8	221.0	234.5	228.5
First enlistments‡.....	106	118	127	113	117	103	114.0	159.0
Inductions‡.....	90	60	158	74	151	102	105.8	55.3
Officers§.....	10.3	10.6	18.2	16.0	17.8	16.0	14.8	14.2
Reserves and National Guard#.....	130.0	130.0	90.0	110.0	170.0	120.0	125.0	—
Total entries all components.....	599.8	605.3	712.4	598.0	739.3	615.0	645.0	—

* SOURCE: *House Hearings*, p. 9954.

† Active duty force strengths include both sexes as reported in *Statistical Abstract of the United States 1966*, Table 365, p. 261 (Government Printing Office: Washington, D. C., 1966). The paid drill reserve and National Guard strengths were obtained from unpublished data, DOD Statistical Office.

‡ First enlistments include two-year reserve enlistments but exclude reserves recalled to active duty. Confer *Statistical Abstract, ibid.*, Table 366, p. 262.

§ Data for officer accessions taken from a special tabulation prepared by the DOD Statistical Office.

House Hearings, p. 10001.

qualification standards for military service, roughly 30.4 percent of these men would have been rejected.⁷ From independent data, I estimated that 59.2 percent of qualified males entered active duty forces while another 14.4 percent served in reserve and Guard units. The incidence of active military service also varied across education groups from a high of 76.8 percent of qualified high school graduates to 32.3 percent of qualified college graduates.

The projected flows of accessions in FY 1970-75 under a continued draft were developed in the DOD study and appear in the last column of Table 1.⁸ These projected flows were juxtaposed to a typical age class born in 1946-48 which is estimated to contain 1,880 thousand males. The estimated participation rate in active military service falls from 41.5 percent of men born in 1938 to 27.0 percent for the age class of 1947. Only 38.5 percent of qualified males will be needed to staff active duty forces in FY 1970-75.

Before turning to the characteristics of accessions to a voluntary force, it is desirable to assemble data on the structure of the entire mixed force. Higher qualification standards and secular gains in the educational attainment of the entire population have contributed to an upward trend in the average education of members of the armed forces. The percentage of enlisted men with high school degrees climbed from 55.2 to 72.8 percent between 1956 and 1963. Over the same period, the percentage of officers with college degrees rose from 55.5 to 69.4 percent. From the 1960 Population Census, it was possible to obtain the age and educational distribution of members of the armed forces stationed in the United States. If these data are expanded to the assumed force strength of 2.65 million men, I obtain the distribution shown in Table 2.⁹ In relation to the male civilian labor force, the armed services have smaller fractions in the lowest educational level due to the mental qualification standards. The proportion

⁷ Approximately 16 percent of an age class is found to be physically unfit, while an additional 2.5 percent are rejected for moral reasons, mainly habitual criminals. These standards have remained quite stable over the last twenty years. Mental qualification standards have, however, been raised as supplies of enlistment applicants grew in relation to requirements. Currently, mental standards have been lowered to a percentile score of 16 on the Armed Forces Qualification Test. The overall rejection rate for all reasons was 40.8 percent for men with 0-11 years of education and 19.1 percent for college graduates.

⁸ These projections assume an unemployment rate of 5.5 percent, the average unemployment rate between 1957 and 1964. For details of the DOD projections, see *House Hearings*, p. 9954. If the unemployment rate is as low as 4.0 percent, voluntary enlistments can be expected to fall with an accompanying rise in inductions.

⁹ The total DOD force strength as of June 30, 1960, was 2,447 thousand males, but the Census enumerated only 1,715 thousand. The distribution shown in Table 2 thus invokes two assumptions. First, it is assumed that the same age-education distribution applies to men stationed in the U.S. and overseas. Second, if the draft is extended, future accessions and reenlistments will generate the distribution which was observed in 1960. I believe that these two assumptions impart a downward bias to the educational attainment of mixed forces in FY 1970-75.

TABLE 2
DISTRIBUTION OF ARMED FORCES BY AGE AND EDUCATION
(For Force Strength of 2,650; Figures in Thousands)

Age	Years of School Completed					Total
	0-8	9-11	12	13-15	16+	
Total DOD						
17 or less.....	11.3	55.2	6.7	.4	—	73.7
18-19.....	21.7	141.3	218.6	14.3	.2	396.2
20-21.....	18.4	111.3	235.1	48.3	2.7	415.8
22-24.....	30.8	97.9	238.3	81.1	79.6	527.7
25-29.....	34.7	89.3	181.0	47.4	63.1	415.5
30-34.....	38.2	67.8	124.3	34.7	28.5	293.5
35-44.....	44.2	67.2	178.2	81.2	59.9	430.8
45-54.....	12.3	12.0	21.2	14.9	21.3	81.8
55 and over ...	2.8	3.2	4.3	1.6	3.2	15.1
Total	214.5	645.2	1,207.8	323.9	258.5	2,650.0

SOURCE: Derived from *U.S. Census of Population, 1960*; Subject Report: "Educational Attainment," Code No. DC(2) 5B, Table 4, p. 54.

of college graduates is also somewhat lower than in the civilian sector for the age groups above 30. Finally, since military pay is primarily a function of years of service, the age structure (in terms of years of service) of the force as of June 30, 1965, is presented in Table 3. Under a continued draft, it is probable that the retention profiles of enlisted and officer personnel will not alter so that the mixed force of FY 1970-75 can be expected to exhibit a similar age structure.

The task of estimating the cost and composition of an all-volunteer force was approached in two steps. It was first assumed that the draft would be abolished with no accompanying changes in pay or other recruitment incentives. An implication of this exercise is that supplies of

TABLE 3
ACTIVE DUTY FORCE STRENGTH BY YEARS OF SERVICE
(As of June 30, 1965, in Thousands)

Years of Service	Total	Officers	Enlisted
0.....	427.7	28.4	399.3
1.....	488.4	34.1	454.3
2.....	301.6	25.0	276.5
3.....	226.3	20.1	206.2
4.....	99.8	12.9	86.8
5-9.....	321.6	54.0	267.7
10-14.....	338.6	51.1	287.4
15-19.....	291.0	58.4	232.6
20-24.....	131.4	45.4	86.0
25 and over.....	17.7	9.4	8.1
Total.....	2,643.8	338.8	2,304.9

volunteers fall short of requirements for the strength objective of 2.65 million men. In the second step, military pay was advanced to attract enough volunteers to meet the strength objective.

If the draft is eliminated, the services would obviously lose the draftees who had accounted for 21 percent of accessions to enlisted ranks in FY 1960-65. In addition, the reluctant volunteers who had enlisted because of the draft liability are likely to remain in civilian life. To determine the probable number of reluctant volunteers, the Department of Defense made a survey in the fall of 1964 of servicemen and civilians in the military ages of 16-34. First-term regular enlisted men (who had all voluntarily entered service between 1960 and 1964) were divided into true and reluctant volunteers on the basis of their responses to the question: "If there had been no draft, and if you had no military obligation, do you think you would have volunteered for active military service?" Those who replied "no definitely" or "no probably" were classified as reluctant. The percentage of true volunteers in subgroups identified by age and education at time of enlistment are shown in the first column of Table 4. The proportion of true volunteers is highest in the youngest and least educated group and declines with age and educational attainment. The fourth column gives the estimated annual flows of voluntary enlistments in FY 1970-75 if the draft is continued, the mixed force case. Multiplying by the proportions of true volunteers, I obtain the estimated flows of enlistments if the draft were abolished with no pay changes.¹⁰ The same question on draft-motivation was asked of officers on their first obligated tours and revealed that 41.3 percent of officer accessions were reluctant volunteers. In the absence of a draft, it is probable that officer procurement programs will be revised placing more reliance on noncollege graduate sources. Space precludes a fuller discussion of the supplies of officer personnel.

Depletions in supplies of initial accessions due to the loss of draftees and reluctant volunteers are offset to some degree by improvements in retention. Air Force studies show that first-term reenlistment rates are substantially higher for airmen whose primary reason for entry was unrelated to the draft.¹¹ If the reenlistment rate of reluctant volunteers is assumed to be the same as that of draftees, one can deduce probable reenlistment rates in an all-volunteer force.¹² Higher reenlist-

¹⁰ These estimates contain a downward bias. It is likely that by FY 1970-75, the other services will enjoy excess supplies of enlistment applicants, some of whom will replace the reluctant volunteers. However, the shortfall in regular Army enlistments will persist.

¹¹ Survey questionnaires try to determine the single most important reason for original entry. Two of several possible choices include "choice of service" and "volunteered in preference to being drafted." Follow-up studies of respondents reveal that airmen selecting these responses had substantially lower reenlistment rates.

¹² Over the period 1957-64, the weighted average for first-term reenlistment rates of

ment rates imply lower personnel turnover which, in turn, leads to smaller required accessions to sustain a given force strength. If the

TABLE 4
EFFECT OF THE DRAFT ON VOLUNTARY ENLISTMENTS—SURVEY RESPONSES
(Classified by Age and Education)

Age at Entry and Education	Percentage of True Volunteers*	Number of DOD Sample†		Voluntary Enlistments in FY 1970-75		
		Number	Percent	With Draft‡	No Draft	
					Number§	Percent
17-19 years of age						
Less than high school.	79.3	167.8	27.7	122.2	96.2	36.6
High school graduate.	63.7	247.1	40.8	188.0	119.7	45.5
Some college.....	55.9	44.0	7.3	18.3	10.2	3.9
Total.....	68.7	458.9	75.8	328.5	226.1	86.0
20 and over						
Less than high school.	60.2	20.2	3.3	14.3	8.6	3.3
High school graduate.	42.3	61.7	10.2	42.8	18.1	6.9
Some college.....	32.7	64.4	10.6	31.1	10.2	3.9
Total.....	40.5	146.4	24.2	88.2	36.9	14.0
All ages						
Less than high school.	77.4	31.1	31.1	136.5	104.8	39.8
High school graduate.	59.5	51.0	51.0	230.8	137.8	52.4
Some college.....	42.1	17.9	17.9	49.4	20.4	7.8
Total.....	61.9	100.0	100.0	416.7	263.0	100.0

* Based on responses of regular enlisted men in their first term of service to the question, "If there had been no draft and if you had no military obligation, do you think you would have volunteered for active military service?" Entries denote the percentage who responded, "Yes, definitely," or, "Yes, probably."

† Figures may differ from force strength statistics due to elimination of nonrespondents and sampling variability.

‡ Estimates of voluntary enlistments in FY 1970-75 if the draft is continued.

§ Obtained by multiplying columns 1 and 4. Assumes that the draft is eliminated but pay and recruitment incentives are unchanged.

transitional problems of moving to a voluntary force are ignored, I obtain the following estimates of gross flow demands (required accessions) to maintain a force of 2.65 million men:

draftees was $R_d = 7.67$ percent as compared to $R = 22.06$ percent for regular Army enlistees. The observed rate for all enlistees, R , can be regarded as a weighted average of the rate for true volunteers R_v and of reluctant volunteers R_d which is assumed to be equal to that of draftees.

$$R = kR_v + (1 - k)R_d$$

where k is the proportion of true volunteers. In the case of the regular Army where $k = .568$ (the proportion of true volunteers), the first-term reenlistment rate is estimated to rise from $R = 22.1$ percent to $R_v = 33.0$ percent. Similar improvements in retention can also be expected of the other services as well as for officers.

GROSS FLOW DEMANDS FOR A FORCE STRENGTH OF 2.65 MILLION MEN

Component	Voluntary Force (no draft)	Mixed Force (with draft)	Ratio
Total required accessions to enlisted ranks..	333.5	472.0	.707
Other services.....	188.9	257.7	.733
Army—total.....	144.6	214.3	.675
Volunteers*.....	144.6	159.0	.909
Inductions.....	0	55.3	—
Required accession of officers	28.4	35.7	.796
Total gross flow demands.....	361.9	507.7	.713

* Assumes a 5.5 percent unemployment rate.

Voluntary supplies in the absence of a draft fall short of requirements for the strength objective with the deficit being largest in the Army.

The manpower deficits can be eliminated by raising military pay to attract more volunteers. The responsiveness of enlistments to pay changes was estimated from cross-sectional data.¹³ Of several functional forms which were fitted to the data, the most consistent fit was provided by a complement supply equation.¹⁴

$$(1) \quad 1 - E = \alpha Y^{-\beta}$$

where E is the enlistment rate and Y denotes relative pay, the ratio of first-term military pay M to alternative civilian pay C . This supply equation implies that a 1 percent rise in relative pay leads to a β percent decline in the remainder (complement) of the population not in military service. The elasticity of supply ϵ is,

$$(2) \quad \epsilon = \beta \left(\frac{1 - E}{E} \right)$$

An upper bound to the necessary pay increase is obtained by restricting the analysis to Army enlisted personnel. For a total strength of 2.65 million, the Army enlisted strength is 857 thousand. Under a continued draft, 159 thousand recruits are projected to volunteer while

¹³ True voluntary enlistment rates in relation to the civilian male labor force 17-20 years of age (adjusted for mental qualification) were estimated for the nine Census regions from the 1964 DOD survey. Two enlistment rates were developed corresponding to (1) total DOD enlistments in Mental Groups I to III and (2) Army enlistments in Mental Groups I to III. Voluntary enlistments of men in upper Mental Group IV (AFQT percentile scores of 20-30) were omitted since their enlistments were limited by recruitment quotas. The data which were used in the supply analysis can be found in *House Hearings*, p. 9957.

¹⁴ This functional relationship was suggested to me by Prof. A. C. Harberger. In estimating the parameters, an unemployment variable was included as an explanatory variable. I have deleted it here to simplify the exposition. Since unemployment is held constant in the projections, its influence is included in the constant term α . A fuller analysis of supplies of military personnel is contained in the paper by Altman and Fechter in this series.

another 55.3 thousand will be drafted. In a steady state after the transition, a voluntary Army with its lower personnel turnover can be sustained by annual enlistments of only 144.6 thousand. If the draft is eliminated, Army enlistments are expected to fall by 43.2 percent to annual inputs of 90.3 thousand. The necessary increase in enlistments is thus given by the ratio of required accessions to voluntary supplies with no pay changes; that is, $144.6/90.3 = 1.601$. The pay increase (Y_1/Y_0) that will achieve this increase in enlistments is estimated from the complement supply equation.

$$(3) \quad \left(\frac{1 - A}{1 - E} \right) = \left(\frac{Y_1}{Y_0} \right)^{-\beta}$$

The estimated Army supply equation revealed an estimate for β of .108 implying an initial elasticity of supply of 1.36. The necessary pay increase to meet manpower requirements on a voluntary basis was estimated to be 1.68.¹⁵

The 68 percent pay increase is presumed to apply to men on their first term. The mechanics of implementing this pay increase deserve brief mention. The annual income of a serviceman includes money payments for various reasons and some income in kind. In this paper, I shall use the concept of tax equivalent income which includes (1) base pay, (2) money payments for subsistence, quarters, and uniforms, (3) the implicit value of subsistence and quarters if the serviceman receives no money allowances for these, and (4) the tax advantage.¹⁶ The total military incomes of enlisted men classified by years of service appear in Table 5. It will be noticed that pay is extremely low in the first two years because pay increases prior to 1964 applied mainly to the career force. If first-term pay is raised by 68 percent, I assumed that the discontinuity in the pay structure would be eliminated so that the average pay over the first three years of service would climb from \$2,500 to \$4,200. In order to prevent reversals in the pay structure, the career force would enjoy a 17 percent increase in annual tax equivalent incomes.

With these pay increases, the armed services should be able to meet

¹⁵ My estimate of the necessary increase in first-term pay is lower than the DOD estimates. The DOD study presented three estimates corresponding to three values of β ; namely, the point estimate of β and the point estimate plus or minus one standard error of the regression coefficient. For the case of a 5.5 percent unemployment rate, I have reproduced the estimated percentage increases in first-term pay; see *House Hearings*, p. 9958; DOD low estimate, 80; DOD best estimate, 111; DOD high estimate, 181; my estimate, 68. The difference between the DOD best and my estimates is due to different estimates of required accessions. My procedure deals with a steady state in which the Army enjoys the retention profile of a truly voluntary force.

¹⁶ Income in kind is clearly nontaxable. In addition, subsistence, quarters, and uniform allowances are classified as nontaxable, thereby giving servicemen an indirect tax advantage which accounts for about 5.5 percent of tax equivalent income.

TABLE 5
ANNUAL MILITARY INCOMES OF ENLISTED MEN
(For Pay Scales of FY 1963)

Years of Service	Total Income DOD	Army			Base Pay as Percent of Total Income
		Total Income	Taxable Income	Base Pay	
1.....	1,830	1,900	1,058	1,055	55.5
2.....	2,143	2,304	1,359	1,382	60.0
3.....	2,991	3,247	2,199	2,002	61.7
4.....	3,344	3,711	2,392	2,433	65.6
5.....	4,130	4,248	2,691	2,575	60.6
6.....	4,462	4,465	2,792	2,725	61.0
7.....	4,649	4,596	2,937	2,858	62.2
8.....	4,741	4,797	3,037	3,003	62.6
9-12....	5,235	5,377	3,409	3,280	61.0
13-16....	5,926	6,043	3,918	3,885	64.3
17-20....	6,387	6,414	4,245	n.a.	—

strength objectives with voluntary supplies of personnel. Since the incidence of reluctant volunteers is higher for older, more educated men, the voluntary force can be expected to have a lower average educational attainment. Because of its lower personnel turnover, only 27.5 percent of qualified males is required to sustain a voluntary force of 2.65 million men.

The lower personnel turnover also raises the career ratio defined as the proportion of men on their second and later tours of duty. Hence, the move to a voluntary army raises the career ratio of regular Army enlisted men from .431 to .537. The age structure of the voluntary force was thus developed from the new retention profiles and appears in Table 6. Finally, the educational distribution of the voluntary force was inferred from the education mix of true volunteers. It was assumed that officer procurement programs for noncollege graduates would be expanded. The proportion of enlisted men with 0-8 years of education was small for two reasons. First, the minimum AFQT score is assumed to be held at 16, and second, the secular trend toward more education implies a slower growth for this population base. The hypothetical educational distribution of Table 7 pertains to a voluntary force in a steady state after the transition period.

In analyzing the cost and characteristics of a voluntary force, I neglected several pertinent factors of which at least three should be discussed: (1) the transitional period, (2) the savings which obtain from lower turnover, and (3) possible substitutions of civilians for uniformed men. In order to maintain force strengths in the transition, required accessions are likely to be at least 10 percent greater than in the steady state. The necessary first-term pay increase to sustain Army

TABLE 6
ACTIVE DUTY FORCE STRENGTH BY YEARS OF SERVICE
(Hypothetical Voluntary Force, in Thousands)

Years of Service	Total	Officers	Enlisted
0.....	355.3	34.5	320.8
1.....	327.5	33.6	293.9
2.....	299.2	32.1	267.1
3.....	204.4	20.2	184.2
4.....	108.0	16.0	92.0
5-9.....	455.6	65.4	390.2
10-14.....	343.3	51.5	291.8
15-19.....	304.6	44.1	260.5
20-24.....	165.2	28.1	137.1
25 and over.....	86.9	14.5	72.4
Total.....	2,650.0	340.0	2,310.0

force strengths during the transition is estimated to be 94 percent as opposed to the previous 68 percent pay increase. The average annual military pay over the first term climbs from \$4,200 to \$4,850.

In the mixed force, at least 10 percent of the active duty force is involved in training. Since initial accessions to a voluntary force are some 30 percent smaller, the voluntary force strength could be reduced by at least 3 percent and still retain the same number of men in an "effective" status. In addition, if men who are engaged in training others are moved to other duty assignments, further savings could be realized. A cut in the size of a voluntary force which achieves the same effective strength implies a corresponding reduction in required accessions. Neglect of these savings from lower turnover thus imparts an upward bias to my estimate of the necessary pay increase.

Many medical, clerical, food service, and maintenance positions which are now staffed by servicemen could be filled by civilians. Given

TABLE 7
ACTIVE DUTY FORCE STRENGTH BY AGE AND EDUCATION
(Hypothetical All-Volunteer Force)

Age	Years of School Completed					Total
	0-8	9-11	12	13-15	16 and Over	
Total DOD						
17-19 ...	25.7	145.1	212.1	18.0	—	400.9
20-21 ...	30.3	170.8	248.6	26.5	4.8	481.0
22-24 ...	28.8	133.9	194.0	31.8	41.1	424.6
25-29 ...	22.6	127.3	188.7	41.0	84.6	464.2
30-34 ...	17.1	100.5	147.5	29.7	52.5	347.3
35-44 ...	20.7	124.1	182.7	39.6	74.5	386.9
45-54 ...	3.1	19.1	28.8	8.6	30.2	89.7
55 and over.	—	—	0	0	0.7	0.7
All ages...	143.3	820.8	1,202.4	195.2	288.3	2,650.0

current military pay scales, assignment of military personnel to these jobs may well produce the lowest budgetary cost. However, when military pay is sharply advanced, it becomes economical even from the viewpoint of budgetary cost to substitute civilians for uniformed men.¹⁷ By implementing these substitutions, the size of the armed forces could be reduced without changing the tasks performed by the totality of civilians and military personnel. A careful study of these possibilities for substituting civilians should, in my opinion, be an integral part of moving toward a voluntary force.

II. *The Financial Cost of the Armed Forces*

According to the defense budget for FY 1965, the cost of active duty military personnel was \$12,662 million; retirement benefits accounted for another \$1,384 million.¹⁸ A second estimate of the payroll cost is obtained by applying the annual military incomes of Table 5 to the age structure of the force. This estimate of \$12,049 million differs from the DOD cost because my measure of military pay excludes many pay items.¹⁹ This latter procedure is, however, the only way to estimate the budgetary cost of a voluntary force.

In order to achieve a voluntary force with the same strength as the mixed force, the entire pay profile is shifted upward with the largest pay increases applying to the first four years of service. In a voluntary force, larger fractions of men are in the career force with the result that the higher military incomes in later years receive more weight. If the higher pay profiles are applied to the probable age structure of a voluntary force, Table 6, I obtain an estimated payroll cost of \$16,103 million.²⁰ These cost estimates thus imply that the defense

¹⁷ The stock demand for military personnel is not completely inelastic. At higher prices, fewer men would be demanded by the services. A consideration which operates in the opposing direction is the provision of rotational billets. Some jobs must be kept for men on rotation from overseas assignments. The demand for military men is likely to be determined by the anticipated peak load demand so that a considerable part of the force is always idle. This is as it should be and the reason for maintaining a standing army.

¹⁸ *Statistical Abstract of the U.S.*, 1966, Table 153, p. 112.

¹⁹ Flight pay, sea duty pay, and many other pay items were omitted in the annual tax equivalent incomes shown in Table 5. Another source of error is that the age structure of the force, Table 3, applies to years of active military service, while the pay profile of Table 5 is based on years of service for pay purposes; the latter is always equal to or greater than the former, thereby imparting a downward bias to my estimate of the payroll cost. Finally, I had only rough estimates of annual tax equivalent incomes for officers.

²⁰ In arriving at this cost, I assumed that an enlisted man received \$3,900 in his first year of service with annual increases of \$300 over the next three years. Enlisted men's pay in later years was raised by 17 percent. The officers' pay profile was adjusted to eliminate the discontinuity in the pay profile. As a result, average annual pay for officers in their first three years of service rose by 20.1 percent. The additional payroll cost of a voluntary force contains an upward bias since I have neglected the savings from lower personnel turnover and possible substitutions of civilians for uniformed personnel. Finally, it may be cheaper to attract recruits with recruitment incentives other than higher annual military incomes. Initial enlistment bonuses, greater pay differentials for skilled personnel, or educational/training benefits could be incorporated into the pay structure.

TABLE 8
 MEDIAN INCOMES OF CIVILIAN MALE LABOR FORCE, 1964

Age	Years of Education Completed				
	0-8	9-11	12	13-15	16+
17-19. . . .	2,010	2,926	3,196	3,147	—
20-21* . . .	2,391	3,314	3,924	4,668	—
22-24† . . .	3,160	4,026	4,789	5,168	5,280
25-29‡ . . .	3,673	4,500	5,366	5,502	6,213
30-34. . . .	4,296	5,339	6,167	6,910	8,353
35-44. . . .	4,710	5,860	6,528	7,389	9,853
45-54. . . .	4,717	5,636	6,549	7,855	10,846
55 and over .	4,229	4,944	6,135	6,642	9,883

* Incomes for males 21 years of age and under estimated from DOD survey of civilian nonveterans, 16-21 years of age. Adjusted for unemployment.

† Incomes interpolated from data for ages 20-21 and 25-29.

‡ Median total incomes taken from *Statistical Abstract of the United States, 1966*, Table 157, p. 115. Figures were adjusted for unemployment rates of 2.8 percent for males 25 and older and with more than 8 years of education, and 4.7 percent unemployment for males with less than 8 years of education.

budget must be increased by \$4 billion per year to obtain a voluntary force of 2.65 million men. The budgetary cost of moving to an all-volunteer force would be even higher if one considered the transitional period and additional retirement benefits.

Turn next to the financial cost of the armed forces to the economy as a whole. In both mixed and voluntary forces, 2.65 million men are allocated to maintaining the defense of the nation and are thereby kept out of the civilian labor force. The alternative cost of the armed forces is the value of civilian goods and services that could otherwise have been produced by them. An ideal measure of this cost would require estimates of the marginal value products of men in military service. An approximation can, however, be obtained by assuming that civilian incomes are equal to marginal value products. Median civilian incomes in 1964 classified by age and educational attainment and adjusted for unemployment are shown in Table 8. If servicemen were relocated to the civilian sector, it is assumed that they could earn the same incomes as civilians of similar ages and educational attainment. Two pieces of evidence suggest that these incomes are too low. First, the median incomes of veterans were about 2.5 percent higher than incomes of all civilians.²¹ Second, a DOD survey revealed that prior civilian earnings were somewhat higher for men in the upper mental

²¹ A comparison of median incomes in 1959 revealed that veterans typically earned more than all males in the civilian labor force. Veterans 25-34 years of age with 12 years of education earned 2.3 percent more than all males. An opposing pattern is observed for veterans of World War II who were over 45 years of age in 1959; there, the veterans earned less than all males. These income estimates can be found in, *U.S. Census of Population 1960*, "Earnings of Total Civilian Male War Veterans in Experienced Labor Force in 1959," Table 16 PC (2), 8C. "Earnings of Males 25-64 in Experienced Civilian Labor Force in 1959," Table 1, PC (2) 7B.

groups. Since the mental distribution of servicemen is higher than that for the entire population (especially when education is held constant), their alternative civilian earnings should also be higher. The use of median civilian incomes thus imparts a downward bias to the alternative cost of labor resources allocated to the armed services.

If the mixed force described in Table 2 had earned the civilian incomes of Table 8, they would have received an aggregate annual income of \$13,041 million. The corresponding financial cost for the voluntary force of Table 7 was \$14,233 million or 9.1 percent greater than that of the mixed force. Although the voluntary force has more men with less than twelve years of schooling, it also contains more older men, and on balance, the age effect outweighs education.

These cost estimates do not take account of personnel turnover. In the mixed force, larger fractions of an age class enter active military service for shorter tours of duty. The critical question is, are civilian incomes in later life reduced by short (two to four years) tours of active duty? The relationship of income to age (given education) can be explained in two ways. One is that older men have acquired on-the-job training which is reflected in higher incomes. The second argues that age is a proxy for maturity and stability which commands higher income.²² If the first explanation is correct and if military training is not a perfect substitute for civilian job experience, the financial cost of the mixed force must be increased to reflect the cost of postponing civilian job training for more members of an age class.

The financial costs of \$13.0 and \$14.2 billion for mixed and voluntary forces are only slightly larger than the payroll cost of \$12.7 billion for the mixed force. Military pay is, however, considerably below alternative civilian incomes for men on their first tours, while men in the career force receive slightly higher incomes than their counterparts in civilian life. It should be emphasized that these financial costs disregard the occupational preferences of individuals, some of whom are involuntarily inducted into the mixed force. They simply provide a measure of technical efficiency in terms of the value of goods and services which the economy relinquishes to maintain a standing army.

III. *The Full Economic Cost of the Draft*

The full economic cost embraces the principle that equalizing income differentials are properly included in the opportunity cost of acquiring men for military service. A simple theory of occupational

²² Becker argues that the age profile of income is mainly attributable to investment in human capital via on-the-job training. See G. S. Becker, *Human Capital* (Columbia Univ. Press, 1964). The second thesis could be rationalized by my theory of fixed employment costs. Older men are more likely to be married and possess other attributes which are correlated with low labor turnover. If hiring and initial training costs are large, it behooves the firm to offer higher wages to men with longer expected periods of employment. See, W. Y. Oi, "Labor as a Quasi-fixed Factor," *J.P.E.*, Dec., 1962.

choice along the lines of Marshall²³ provides a useful analytic framework. The economy can be imagined to consist of two industries: military and civilian sectors. Since pay cannot be separated from conditions of employment, occupational preferences (utilities and disutilities of the job) necessarily affect supplies of labor. Suppose that an individual, A , could earn an income C in the civilian sector while current first-term military pay is M_o . If military and civilian pay were the same, $M_o = C$, an individual with an aversion for service life would elect to remain in civil life. Military pay could, however, be advanced by enough to compensate A for his disutility, thereby attracting him into the military sector. There is, in principle, some minimum supply price M with its accompanying equalizing differential δ such that A would be indifferent between employments in the two sectors when $M = (1 + \delta) C < M_o$, A would volunteer for military service.

Occupational preferences can thus be expressed in terms of equalizing differentials δ . If $\delta > 0$, the individual must be compensated before he would volunteer. It is possible that some men prefer military service in which case δ would be negative. The supply of men to the armed forces is then determined by the joint frequency distribution of alternative civilian incomes C and equalizing differentials δ . At current military pay, the voluntary supply of recruits consists of those individuals for whom $M_o > (1 + \delta)C$. If pay is advanced, the armed forces could attract men with higher civilian incomes or with greater aversions (meaning larger values of δ) for service life. The complement supply curve given by equation (1) implies that over the relevant range, the frequency distribution of occupational preferences, δ , follows an exponentially declining function.

The draft imposes costs on men in the armed services in at least three ways. First, more men from an age class are demanded by the armed forces under a draft because of the high turnover of draftees and reluctant volunteers. Second, some men are involuntarily drafted while others are coerced to enlist by the threat of a draft without being compensated for their aversion to military employment. At sufficiently high levels of military pay, all of these reluctant service participants could, in principle, have been induced to volunteer. Finally, the true volunteers who would have enlisted irrespective of the draft law are denied the higher military pay that would prevail in a voluntary force. First-term military pay can be kept at low levels because the draft assures adequate supplies of initial accessions.

In the years ahead, FY 1970-75, it is projected that only 55.3 thousand men will be drafted each year. If the DOD survey responses of Table 4 are valid, another 153.7 thousand annual accessions to enlisted

²³ Alfred Marshall, *Principles of Economics* (8th ed., Macmillan, 1952), pp. 547-70.

ranks can be classified as reluctant volunteers. These projected annual flows of reluctant participants are distributed by education and age at entry in Table 9. However, all 209 thousand reluctant entrants will not be demanded by a voluntary force which is likely to enjoy considerably lower personnel turnover. In fact, the projected annual flow of 263 thousand true volunteers would have to be increased by only 75 thousand to sustain a voluntary force of 2.65 million men: 55 thousand in the Army and 20 thousand in the other services.

To measure the economic cost of the draft, one must know the minimum supply price M at which each draftee and reluctant volunteer could be induced to become a true volunteer. Such data are simply unavailable, and some simplifying assumptions must be invoked to arrive at an estimate of this cost. It seems reasonable to suppose that the 153.7 thousand reluctant volunteers who entered as regular enlisted men in preference to being drafted have less aversion to military service when compared to draftees and men who never enter service.²⁴ Indeed, if the draft were abolished and military pay advanced, I suspect that most of these men would become regular volunteers. A lower bound to the economic cost is thus obtained by assuming that these reluctant volunteers have the lowest minimum supply prices. According to the complement supply curve for enlistments to all services, first-term pay must be raised by a factor of 1.88 to attract an additional 153.7 thousand recruits.²⁵

The exposition is facilitated by referring to the supply curve of Figure 1. If the draft is eliminated with no pay changes, the annual

²⁴ It has been alleged that many reluctant volunteers are prompted to enlist in preference to being drafted because of the uncertainties about whether they will be drafted, or if so, when. In his doctoral dissertation, David Bradford argues that men who become reluctant volunteers because of this uncertainty are those for whom the relative cost of later military service is the greatest. He further argues that the absolute cost of active military service is immaterial. I believe that his argument is specious because he considers only a dichotomous choice. The gist of his simple model can be put as follows. Let C_0 be the subjective cost to the individual of active military service now, while C_1 is the cost of entry at a later date and older age. If p is the subjective probability that he will be drafted later, this individual would prefer to enlist now if $C_0 < pC_1$ or $(C_0/C_1) < p$. Hence, only the ratio or relative cost of later entry, (C_0/C_1) matters. There is, however, a third option available to every draft liable youth; namely, securing a deferment. This may entail a cost C_a especially if he must become a father or minister, or if he must pursue an occupation which bestows an occupational deferment. There are many reasons to suppose that the cost of acquiring a deferment, C_a , is independent of C_0 and C_1 , the subjective cost of actually entering military service. Hence, if $C_a < C_0$, the individual would secure the deferment and never enter military service. Moreover, if C_a is the same for all individuals, Bradford's analysis applies only to men for whom the cost of active military service C_0 is greater than C_a . For the details of Bradford's analysis, the reader is referred to, David F. Bradford, "The Effects of Uncertainty in Selective Service," Technical Report No. 144 (Inst. for Math. Studies in the Soc. Sci., Stanford Univ., 1966).

²⁵ The complement supply curve, equation (1), for enlistments to total DOD revealed an estimate of β of .315 with a standard error of .087. In the absence of a draft, the enlistment rate (Mental Groups I to III) was estimated to be 27.8 percent of the qualified civilian labor force in an age class. In deriving the supply curve shown in Figure 1, I set β equal to .402, the point estimate plus one standard error. The elasticity of this supply curve at the initial enlistment rate was +1.04. Because of the upward bias in the supply elasticity, my procedure understates the magnitude of the economic cost.

TABLE 9
 PROJECTED ACCESSIONS TO ENLISTED RANKS UNDER A CONTINUED DRAFT, FY 1970-75
 (By Age at Entry, Education, and Draft Motivation)

	Years of School Completed					
	Total	0-8	9-11	12	13-15	16 and Over
Voluntary enlistments under a continued draft						
17-19 years.....	328.5	15.0	107.2	188.0	18.3	0
20 years and older.....	88.2	1.4	12.9	42.8	25.8	5.3
All ages.....	416.7	16.4	120.1	230.8	44.1	5.3
Reluctant volunteers						
17-19 years.....	102.4	3.0	23.0	68.3	8.1	0
20 years and older.....	51.3	0.4	5.3	24.7	17.8	3.1
All ages.....	153.7	3.4	28.3	93.0	25.9	3.1
Inductions.....	55.3	4.3	15.2	21.9	10.5	3.4
Reluctant military service participants						
17-19 years.....	102.4	3.0	23.0	68.3	8.1	0
20 years and older.....	106.6	4.7	20.5	46.6	28.3	6.5
All ages.....	209.0	7.7	43.5	114.9	36.4	6.5

SOURCE: Derived from Table 4.

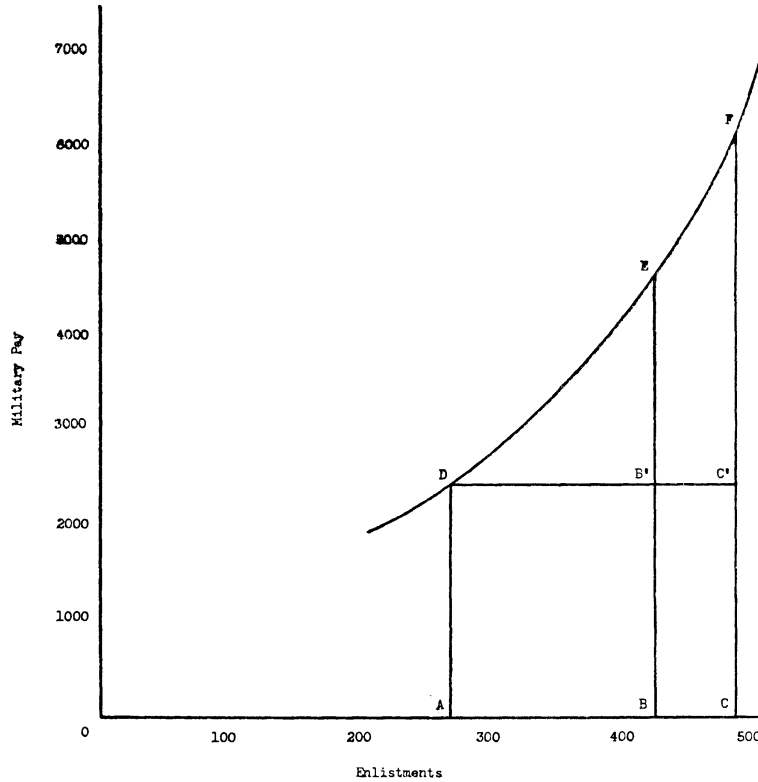


FIGURE 1.
SUPPLY CURVE OF VOLUNTARY ENLISTMENTS TO TOTAL DOD

supply of voluntary enlistments is projected to be around 263 thousand men at a first-term pay $M_0 = \$2,500$. If pay is increased by a factor of 1.88 to $M_1 = \$4,700$, the annual supply of recruits climbs to 416.7 thousand men; i.e., from OA to OB accessions. The reluctant volunteers (the line segment AB) enlist at the lower pay M_0 in order to avoid being drafted. The difference between their minimum supply prices and the current first-term pay M_0 represents an implicit tax which is borne by these men. The aggregate annual cost for the 153.7 thousand reluctant volunteers is thus given by the area of the triangle, $DB'E$, or \$141 million. This estimate tacitly assumes that each reluctant volunteer is compensated in a discriminatory fashion without compensating the true volunteers. If, however, pay were raised to \$4,700 for all recruits including true volunteers, the annual cost of the draft is increased by the additional amount M_0DEM_1 or \$917 million.²⁶ The lower annual cost of \$141 million which excludes rents represents an implicit tax levied against reluctant volunteers who

²⁶ In competitive labor markets, these rents are always included in the additional cost of acquiring larger supplies of labor. If college professors could be conscripted and compelled to work, or if the economic rents of teaching versus other occupations could be eliminated, the budgetary cost of higher education could be greatly reduced.

were coerced to enlist by the draft liability. In a sense, each reluctant volunteer pays, on average, an implicit tax of \$915 in each of the 3.5 years of his first term of service. If the point estimate of β had been used in these calculations, the aggregate annual cost, $DB'E$, is estimated to be \$192 million.²⁷ Since each regular enlistee serves for 3.5 years, the total tax (excluding rents) borne by the reluctant volunteers in an age class is conservatively estimated to be \$493 million; the best estimate is \$672 million.

The economic cost of conscripting men into military service is harder to assess. The Selective Service System does not attempt to draft men with the least aversion for military life. The supposition that draftees were next in line above the point E in Figure 1 is less plausible than in the case of reluctant volunteers. However, a lower bound estimate is again obtained by assuming that draftees had the smallest equalizing income differentials and hence the lowest minimum supply prices. In Figure 1, first-term pay must be raised from $M_1 = \$4,700$ to $M_2 = \$5,900$ to attract the 55.3 thousand draftees (the line segment BC) on a voluntary basis. If each draftee is compensated in a discriminatory fashion, the implicit annual tax which is borne by involuntary draftees is given by the area $EB'CF$ or \$175 million.²⁸ Since the average active duty tour for a draftee is about 1.9 years, the total implicit tax for draftees in an age class is \$333 million.

Each reluctant volunteer and draftee could, in principle, have been induced to enter active military service on a voluntary basis. The draft, however, compels some to serve while others are coerced to enlist at military pay scales which are below their minimum supply prices. The difference between minimum supply price and current first-term pay is simply an implicit tax—the economic cost of active military service for reluctant service participants. A lower bound estimate of this cost (for those who serve in enlisted ranks) is derived from the area $DC'F$ and is approximately equal to \$826 million for reluctant participants in an age class. If the least squares estimate of the supply of voluntary enlistments were used in the supply curve of Figure 1, I obtain the middle estimates in the last column of the following summary table:

²⁷ If the value of β is reduced from .402 to its least squares point estimate, .315, the elasticity of supply falls from 1.04 to 0.82. Using the point estimate, the necessary first-term pay M_1 to attract OB volunteers rises from \$4,700 to \$5,600.

²⁸ Since the draftee serves for only two years, his annual military income of \$2,100 is less than the first-term pay of regular enlistees, $M_0 = \$2,500$. Hence, the annual cost is slightly greater than the area $EB'CF$ in Figure 1. If β is set equal to .315, first-term pay must rise to $M_2 = \$7,450$ to attract the draftees on a voluntary basis. In this event, the annual cost climbs to \$243 million, and the aggregate cost for the draftees in an age class rises from \$333 to \$462 million.

ESTIMATES OF THE IMPLICIT TAX ON RELUCTANT SERVICE PARTICIPANTS

	Low Estimate ($\beta = .402$)	Middle Estimate ($\beta = .315$)
Annual first-term pay		
M_0	\$2,500	\$2,500
M_1	4,700	5,600
M_2	5,900	7,450
Annual cost excluding rents (millions)		
Reluctant volunteers ($DB'E$)	141	192
Draftees ($EB'CF$)	175	243
Aggregate cost for an age class, excluding rents (millions)		
Reluctant volunteers	493	672
Draftees	333	462
Total	826	1,134

The economic cost or implicit tax placed on men who were coerced to serve by the draft provides a lower bound estimate of the opportunity cost of acquiring enlisted men. The estimates shown in the preceding table are biased downward because the men who bear the cost are assumed to be those with the lowest supply prices in the absence of a draft. These estimates also neglect the rents that would have been paid to true volunteers in a competitive labor market. Under a draft, we not only tax the reluctant service participants but we also prevent true volunteers from collecting these rents. The full economic cost which includes these rents is estimated to be \$5,364 million when I use the supply curve of Figure 1.

It is of some interest to separate the economic cost of the draft into (1) the loss of alternative civilian income during active duty service and (2) the net sum of equalizing income differentials to overcome aversions for service life. If the median 1964 civilian incomes of Table 8 are applied to the probable distribution of reluctant participants, Table 9, the average alternative civilian incomes are:

ESTIMATED ANNUAL CIVILIAN INCOMES OF DRAFTEES AND RELUCTANT VOLUNTEERS

	Annual Flows (Thousands)	Civilian Income	Military Income	Ratio
Reluctant volunteers ..	153.7	\$3,450	\$2,500	.72
Draftees	55.3	3,810	2,100	.55
Total	209.0	3,545	2,400	.68

The differential between alternative civilian and military incomes obviously varies, being larger for older, more educated men. The infrequent college graduate who is involuntarily inducted can expect a financial loss of over \$3,000 a year. The aggregate financial cost to members of

an age class (the difference between alternative civilian and current first-term pay) is estimated to be \$691 million. This financial cost results from the abnormally low levels of first-term pay and is independent of the occupational preferences of reluctant service participants.

In this paper, the economic cost has only been estimated for men who serve in enlisted ranks because of the draft. A fuller analysis would include the costs borne by draft-motivated accessions to officer ranks and to reserve and National Guard units. The available evidence suggests that these men (especially those who enlist in Guard and reserve programs) have high aversions for military service.²⁹

In addition to the direct costs borne by those who ultimately serve in the armed forces, the draft allegedly creates other indirect costs which derive from the mechanics of the selection process. Under the current Selective Service System, a youth can remain in a draft-liable status for seven and a half years. There is some evidence which suggests that employers discriminate against youths who are still eligible to be drafted.³⁰ The youth who elects to wait and see if he can avoid military service is likely to suffer more unemployment. He may be obliged to accept casual employment which does not provide useful job training for later life. Moreover, long periods of draft liability encourage youths to pursue activities which might bestow a deferment. When married nonfathers were placed in a lower order of call in September, 1963, it was followed by small increases in marriage rates of males in the draft-liable ages. It is also alleged that the draft prompts men to prolong their education or to enter occupations which grant deferments. These costs which derive from the uncertainty of the present draft are, in my opinion, small when compared to the direct economic costs incurred by those who are involuntarily inducted or who become reluctant volunteers.

If the current draft law is extended into the decade ahead, it is pro-

²⁹ According to the 1964 DOD survey, draft-motivated enlistments accounted for 70.7 percent of total accessions to reserve and Guard components. Moreover, the percentage of reluctant volunteers was higher for individuals with higher alternative civilian earnings as revealed by the following excerpt from the *House Hearings* (p. 9956).

<i>Annual Civilian Income</i>	<i>Percentage of Draft-Motivated Enlistments</i>
Less than \$2,999	54.1
\$3,000-\$4,999	71.6
\$5,000-\$7,499	72.1
\$7,500 or more	82.2

³⁰ A survey of college placement offices in 1964 indicated that 48 percent of employers placed restrictions on draft-liable males. According to the DOD survey of 22-25 year old civilians, 26 percent with draft classification I-A said that they had difficulty in securing employment. The credibility of this type of question is challenged by the finding that 17 percent of men with dependency deferments, III-A, also stated that they had difficulty securing employment because of their draft liability. The percentages having "difficulty" climbed with age and educational attainment. Further details of these surveys can be found in *House Hearings*, pp. 10008-10010.

jected that only 38.5 percent of qualified males will be required to staff a mixed force of 2.65 million men. Since the draft assures adequate supplies of initial accessions, military pay can be kept at artificially low levels. Many servicemen on their first tour can correctly be called reluctant participants who pay substantial implicit taxes because they were coerced to serve. A conservative estimate of the economic cost (excluding rents) is \$826 million—the amount of compensation which would have been demanded by these men to enter on a voluntary basis. If all recruits received the first-term pay needed to attract the last draftee, the opportunity cost of acquiring new accessions would exceed \$5.3 billion.

An all-volunteer force offers a polar alternative to the draft. With its lower personnel turnover, a voluntary force of the same size could be sustained by recruiting only 27.5 percent of qualified males. The budgetary payroll cost would, however, have to be raised by \$4 billion per year.

In closing, it should be emphasized that the figures appearing in this paper represent my estimates. The two crucial ingredients are the supply curve of voluntary enlistments in the absence of a draft and projected gross flow demands which are determined by personnel turnover. Complement supply curves were estimated from cross-sectional data on voluntary enlistment rates.³¹ The retention profiles which were used to derive gross flow demands for an all-volunteer force generated an age structure of the force which closely approximates that of smaller professional armies in Canada and the United Kingdom. In the light of the data examined, I am reasonably confident of my cost estimates, at least for the assumed force strength of 2.65 million men.

If peacetime military requirements necessitate larger active duty forces, all costs necessarily climb. To sustain a force of 3.3 million men on a voluntary basis, the gross flow demand for new accessions rises by roughly 30 percent. Estimation of the pay increase to achieve this larger force involves an extrapolation of the supply curve beyond the range which I consider to be meaningful.³² The high budgetary cost

³¹ Such data on a regional basis were only available for 1963. The recent enlistment experience is strongly influenced by the Vietnam build-up and the high draft calls. In any move toward a voluntary force, I would strongly recommend an on-going research effort on the determinants of the supply of volunteers as well as on manpower utilization practices of the armed forces.

³² The confidence interval for predictions from a regression equation becomes extremely wide as one moves outside the range of the sample observations. Hence, the following estimates should be regarded as only indicative of orders of magnitude. In order to sustain a voluntary force of 3.3 million men, Army enlistments must be increased from 90.3 to 185 thousand per year; the latter gross flow demand of 185 thousand assumes a steady state. According to the complement supply curve, first-term pay would have to be raised from \$2,500 to \$6,350 to attract sufficient recruits. If part of the pay could be given as initial enlistment bonuses, the defense budget for active duty military personnel would be increased by \$8 to \$10 billion per year.

of a voluntary force is not the only relevant consideration. If men are procured under a draft, the high turnover of draftees implies that over 60 percent of qualified males would be demanded by the armed services to maintain a mixed force of 3.3 million men. The military payroll under a draft will be lower. However, the conscription of military personnel simply substitutes implicit taxes levied on reluctant service participants for explicit taxes on all citizens to finance the higher payroll of a voluntary force. The real economic cost of maintaining a large defense establishment is partially concealed since these implicit taxes never appear in the defense budget.