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## Military Downsizing and the Career Prospects of Youths

By STEPHEN R. BARLEY

**ABSTRACT:** In this article, Stephen Barley examines the extent to which the U.S. military serves as a provider of skills in the civilian economy. His investigation centers around the following questions: Do training and education in the military transfer into the civilian workforce? If the military does prepare individuals for civilian jobs, will reductions in accessions constrict the availability of trained personnel, just as firms are realizing that they require a workforce more highly skilled than in the recent past? Barley presents a review of studies focusing on the economic returns to military service, which fall into one of three categories: the effect of military service on earnings potential; the effects of military training and occupational specialty; and the effects of military service on employment. Barley concludes by offering a series of recommendations for policy, highlighting the fact that returns to service are primarily due to access to further education.

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ALTHOUGH the military does not serve society primarily as an educational institution, many Americans now view military service as a springboard to careers in the civilian economy. The perception is most likely rooted in the legendary economic success of the veterans of World War II. Not only were many returning veterans trained in lines of work valuable to the economic expansion that followed (Fredland and Little 1980) but the GI bill enabled many others to acquire a postsecondary education that further enhanced their economic prospects. In recent decades, the armed forces have consciously promoted enlistment as a way to invest in training relevant for later life. The fact that a sizable percentage of recruits cite career benefits as a reason for joining the military (Richardson 1967) testifies to the effectiveness of the campaign, which highlights what may be the most unique aspect of military training: unlike schools, the military not only trains young people; it also provides "students" with a salary and subsidizes additional training after "graduation."

With the end of the Cold War has come the decision to downsize the military. The American economy and the military are deeply entwined; therefore a reduction in military spending promises to create serious social and economic difficulties. The closing of military bases imperils the livelihood not only of the communities surrounding the bases but, in some cases, entire regions and states. Cutbacks in military procurement may bankrupt firms and even cripple entire industries for whom the Pen-

tagon has been a primary customer. Reductions in force also imply fewer opportunities for 18- to 24-year-olds. Finally, if military training does prepare individuals for civilian jobs, then reductions in force may constrict the availability of trained personnel—just as firms have begun to realize that they require a workforce more skilled than in the recent past (Parnell 1985; Johnston and Packer 1987; Aerospace Education Foundation 1989).

Three questions must be answered before one can determine how to offset the potential loss of training opportunities for young people and the consequent shortage of skilled personnel that may be caused by military reductions. Of initial concern is whether veterans actually fare better in the civilian economy than they would have had they not served and, if so, why?

If evidence supports the claim that veterans enjoy economic returns to military service, one must then ask, Which veterans benefit most? Conceivably, all veterans may enjoy returns from military service, although this seems unlikely, since no other form of education confers benefits equally. A more plausible scenario is that some veterans benefit more than others. At issue, then, is the identity of the groups that benefit and their relative numbers. Only after policymakers have verified the existence of returns to military service, understood the causes of such returns, and identified the groups that benefit can they formulate reasonable strategies for addressing the deleterious consequences of military cutbacks for the labor force.

This article seeks to inform the debate on military reductions by examining the evidence for returns to military service in the civilian economy. The objective is to identify the dynamics that enable veterans to do better in the civilian economy and the groups of veterans that benefit most. The article concludes by considering policy options that are consistent with the evidence on the civilian effects of military service.

#### EVIDENCE OF CIVILIAN RETURNS TO MILITARY SERVICE

Most studies of economic returns to military service fall into one of three categories defined by the outcomes that researchers have examined. The largest category consists of studies that compare the civilian earnings of matched samples of veterans and nonveterans. Most of these studies have sought to confirm or disconfirm the existence of returns to military service, although they also offer insights into the mechanisms that underwrite returns. The second category consists of studies that assume that technical training is the primary source of a veteran's edge in the civilian economy. One line of research asks whether differences in the earnings of veterans and nonveterans can be attributed to military training rather than to military service per se. Another concerns the probability that a veteran will continue in the occupation for which he or she received military training and, if so, whether continuing affects earnings. Finally, a handful of studies have asked whether military service affects the probability of being employed.

#### *The effect of military service on earnings potential*

Studies of the earnings of veterans and nonveterans usually employ regression models to predict whether military service raises or lowers hourly wages or annual salaries after controlling for other factors correlated with income. The dominant finding that emerges from this stream of research is that returns to military service have declined since World War II. A systematic examination of the literature suggests, however, that to describe the trend as a decline may be an understatement: earnings differences may have become negligible, if not negative.

Table 1 summarizes by war and race the results of 14 studies conducted since the mid-1970s on returns to military service.<sup>1</sup> A plus sign in a table cell indicates that the study found that veterans earn more than nonveterans. A minus sign indicates the reverse. Findings of no difference are denoted by an entry of a zero. When a study does not assess the earnings of veterans of a particular war or racial group, the corresponding cells remain empty.

A casual glance at the pattern of entries reveals that most of the evidence for positive returns to military service comes from research on veterans of World War II and Korea. Studies of veterans who served during or after Vietnam almost universally report that veterans earn the same or less than their civilian counterparts. Of 17 positive findings, only 2 involve veterans who served during or after Vietnam. Conversely, all but 3 of the 15 findings of negative returns have involved veterans of Vietnam or the

TABLE 1  
**SUMMARY OF EMPIRICAL ASSESSMENTS OF THE EFFECT OF  
 MILITARY SERVICE ON CIVILIAN EARNINGS BY WAR AND RACE**

Article	Date	World War II			Korean War			Vietnam War			Post-Vietnam		
		A	W	M	A	W	M	A	W	M	A	W	M
Villemez and Kasarda	1976		+	+		+	+		-	-			
Martindale and Poston	1979		+	+		+	+		-	+			
DeTray*	1982		+	+		+	+		-	0			
Rosen and Taubman	1982	+				+			-				
Fredland and Little†	1980	0											
Angrist and Krueger	1989	-	-	-									
Knapp‡	1976					+							
Schwartz	1986				0	0	0		-	0	0		
Berger and Hirsch	1983								-	0	0		
Angrist	1990								-	0			
Cohany	1992							0	0	+			
Crane and Wise	1987										-	-	-
Mangum and Ball	1989										0		
Bryant and Wilhite	1990										-		

Key: A = all veterans, W = white veterans, M = minority veterans, + = veterans earn more than nonveterans, - = nonveterans earn more than veterans, 0 = no difference between veterans and nonveterans.

NOTE: Unless otherwise noted, effects reported are those estimated before controlling for education or military occupational specialty.

\*Although DeTray did not control for war, he calculated coefficients for returns to military service for a number of birth cohorts. Therefore it is possible to assign effects to wars from DeTray's data.

†Return to military service calculated after controlling for military occupational specialty.

‡Although Knapp does not explicitly control for the war in which veterans served, because he sampled veterans who were aged 18-32 in 1964, most would have served either in the Korean War or the period between Korea and the very early years of Vietnam. Hence I have treated Knapp's study as a study of Korean War vets.

post-Vietnam era. Evidence that military service has no effect on civilian earnings is also found predominantly (69 percent) in studies of recent cohorts.

Thus the pattern in Table 1 strongly suggests that civilian returns to military service since Vietnam have been, at best, negligible and possibly negative. Estimates of the cost of military service to a newly discharged veteran range from an 11 percent (Crane and Wise 1987) to a 19 percent (Rosen and Taubman 1982) reduction in earnings. Bryant

and Wilhite (1990) estimated that military service costs the average veteran approximately 85 cents per hour. Table 1 indicates that the loss of returns may have been less severe for minorities, however; they were the only group to experience positive returns to service in Vietnam.

The patterns in Table 1 raise two questions: why have returns to military service dwindled since Korea, and why has the decline been less severe for minorities? Two explanations seem plausible.<sup>2</sup> First, the demise of positive returns may reflect

the dynamics of selection. Veterans of World War II and Korea may have possessed attributes that would have made them more attractive to employers regardless of their service. A similar distinction may continue to be true of minorities in the military. Alternatively, the pattern of declining returns may reflect the presence of moderating variables. Trends in society associated with, but distinct from, military service may conceivably explain positive returns before Vietnam, negative returns after Vietnam, and the greater severity of the change for whites. Shifting patterns of educational attainment are a primary candidate for such a moderating variable. As a group, the studies in Table 1 enable us to evaluate these explanations, while also assessing the mechanisms that may underwrite returns to military service in general.

*Selection dynamics.* In an influential study, DeTray (1982) discovered that returns to military service before Vietnam were directly proportional to the percentage of veterans in an age cohort. He interpreted this result as evidence for a screening dynamic based on selection differences. DeTray argued that the larger the proportion of a cohort who served in the military, the more employers would assume that nonveterans were somehow inferior because they were more likely to have been rejected by the military.

Angrist and Krueger's study of World War II veterans (1989) offers stronger support for the thesis that selection dynamics are responsible for different patterns of economic returns before and after Vietnam. After

controlling for the risk of being drafted, Angrist and Krueger found that "veterans earn no more than comparable non-veterans and may well earn less" (1). Angrist and Krueger attributed their discovery of negative returns to military service among World War II veterans to the fact that draftees did not benefit from the continuous civilian employment enjoyed by those who did not serve. Angrist and Krueger concluded that veterans of World War II and Vietnam probably experienced similar economic returns to military service—both negative.

The foregoing studies provide relatively direct evidence for the possibility that declining returns to military service are by-products of selection dynamics associated with period effects and draft procedures. In contrast, no direct evidence is available that would allow one to conclude that selection differences also explain why returns have declined less severely for minorities. Indirect evidence is available, however. A number of studies have shown that even when returns to military service are negative, veterans without a high school education earn more than nonveterans who have not completed high school (Villemez and Kasarda 1976; DeTray 1982; Rosen and Taubman 1982; Berger and Hirsch 1983; Cohany 1992). Berger and Hirsch (1983) suggest that high school dropouts who enter the military may have an advantage over other dropouts, because the military is particularly careful when screening applicants from this population: they induct only the most capable. If Berger and Hirsch's conjecture is accurate, then

minority veterans may experience an advantage relative to nonveterans not only because they are more able than their peers but because their veteran status signals their ability to employers.

*Education as a moderating variable.* To the degree that selection dynamics account for the pattern in Table 1, returns to military service are best viewed as the product of attributes possessed by veterans prior to enlistment or conscription. Military service adds no human capital. In contrast, the argument that education moderates returns to military service draws attention to increments in human capital that are usually acquired after military service. In this case, military service may indirectly enhance human capital. The hypothesis that declining returns to military service can be explained by an association between military service and educational attainment rests on three entwined propositions: (1) that earnings increase with increasing education; (2) that veterans, on average, acquire more education than nonveterans; and (3) that differences in the educational attainment of veterans and nonveterans have diminished over time. The first proposition is so well established that it requires no further documentation. The argument therefore pivots on the viability of the second and third propositions.

There can be little doubt that large numbers of veterans of World War II eventually profited by taking advantage of the educational benefits associated with the GI bill. O'Neill, Ross, and Warner (1976) report that 51 percent of all World War II veterans

eventually used the GI bill to obtain some form of training. They also show that the use of GI bill benefits has increased since World War II: by the Vietnam era, 59 percent of U.S. veterans were using their educational benefits.

In recent years, minorities have apparently taken greater advantage of the military's educational benefits than have whites. After controlling for ability (using the Armed Forces Qualification Test) and level of education pursued, O'Neill, Ross, and Warner (1976) found that African American Vietnam veterans were between 4.5 percent and 9.9 percent more likely than whites to make use of the GI bill. Moreover, African Americans were more likely to use their benefits for college and vocational and technical schools, whereas whites were more likely to use their benefits for on-the-job training. Cohany (1992) also found that minority veterans were more likely than white veterans to avail themselves of educational benefits and that both African American and Hispanic veterans were more likely than comparable nonveterans to pursue some form of postsecondary education (51.6 percent versus 26.5 percent for African American, and 60.6 percent versus 20.8 percent for Hispanic veterans and nonveterans, respectively).

Thus data generally confirm the proposition that veterans acquire more education than comparable nonveterans and that the acquisition generally occurs after discharge. This suggests the possibility that differential educational attainment largely explains economic returns to military service. Villemez and Kasarda (1976)

explicitly put this hypothesis to test. In a path analysis designed to predict income, Villemez and Kasarda (1976, 416-17) found that the direct effect of military service on earnings was small and that the indirect effect through occupation was "practically nonexistent." Military service was, however, a strong predictor of educational attainment, and educational attainment was an even stronger predictor of income. Hence Villemez and Kasarda concluded that returns to military service were almost entirely explained by the fact that veterans pursued more education. Moreover, these researchers found that the indirect effect of military status on earnings through education was stronger for African Americans than for whites.

If veterans have always become more educated than comparable non-veterans, then why have returns to military service diminished over time? The paradox appears to be explained by the fact that, since World War II, levels of education have increased throughout American society, thereby reducing the competitive edge that veterans once acquired from the GI bill (Villemez and Kasarda 1976).

Thus it appears that differences in educational attainment and educational trends in society may account both for the pattern of declining returns to military service for most of the observed differences in earnings among veterans and nonveterans and for the fact that African American veterans have been less severely affected than whites.

### *The effects of military training and occupational specialty*

Because earnings are so strongly tied to education, it seems plausible that military service should most enhance civilian wages when veterans acquire skills in the military that are of direct value in the civilian economy. For this reason, a number of researchers have attempted to distinguish payoffs to military training from payoffs to military service itself. Using data on World War II veterans, Fredland and Little (1980) reported that military training brought a 12 percent premium in earnings if a veteran used his or her training in the civilian economy. Using data on Vietnam veterans, Norrblom (1976) arrived at an identical estimate of the payoff for a year of military training. Norrblom also found that military service was unrelated to earnings after controlling for whether veterans had received training in the military.

In a study of veterans who served after Vietnam, Bryant and Wilhite (1990) reached less optimistic conclusions than Fredland and Little (1980) or Norrblom (1976). Bryant and Wilhite regressed hourly wages on the time veterans spent in the military as well as on the number of months of military training they received. The regressions indicated that each month of military service reduced a veteran's civilian wages by 4 cents per hour. Since the typical veteran served 31 months, a tour of duty reduced civilian wages by a total of \$1.24 per hour. In contrast, a month of military training enhanced civilian

wages by 20 cents per hour. Because the armed forces provided the average veteran with 1.78 months of training, Bryant and Wilhite's estimates imply that even those who received training experienced no payoff in later earnings. The weakness of such results is that simple measures of time spent in training ignore differences in occupation. It is unlikely that a person trained as a cook can expect the same career boost as a person trained in computer technology, even if both are trained for identical periods of time. Consequently, returns to military training are likely to vary widely by occupational specialty.

Following this line of reasoning, a number of researchers have estimated the payoff to veterans who entered civilian jobs that matched their military occupational specialty (MOS) and have sought to identify those specialties where matches are most likely to occur (Norrbloom 1976; O'Neill, Ross, and Warner 1976; Fredland and Little 1980; Mangum and Ball 1987, 1989; Bryant and Wilhite 1990). Three findings repeatedly surface. First, after controlling for matches between military and civilian occupation, all returns to military service and training disappear. Thus civilian payoffs to military service are largely a function of the MOS in which a veteran is trained. Second, only veterans trained as technicians consistently appear to profit from their military training. Military personnel trained in electronics, the repair of electrical and mechanical equipment, and the crafts are most likely to find their training useful.

Those who specialize in combat, communications, or intelligence are least likely to find related civilian employment. Finally, a number of studies indicate that only training in the Air Force consistently yields positive returns (O'Neill, Ross, and Warner 1976; Mangum and Ball 1987; Bryant and Wilhite 1990).

One measure of the value of an MOS is the proportion of veterans who find civilian jobs in related lines of work. Norrbloom (1976) and Mangum and Ball (1989) reported that approximately 50 percent of the veterans in their samples landed civilian jobs related to their MOS. Proportions were even higher for particular specialties. For instance, Mangum and Ball (1987) estimated that 61 percent of male military personnel trained in electronic equipment repair and in the crafts found similar jobs after being discharged.

In an appendix to an article on sources of training, Carey and Eck (1984) reported that only 2 percent of the working population thought their military experience was valuable training; the percentage rose to 5 percent for both "technicians and related support occupations" and "precision production, craft, and repair occupations." All other broad occupational groups reported less reliance on military training. That the military was most important in these occupational clusters concurs with the results of the studies of transfer of training discussed earlier. However, as Table 2 indicates, even for the relatively technical occupational clusters, military training was among the least important sources of training.

TABLE 2  
**PERCENTAGE OF MEMBERS OF VARIOUS OCCUPATIONAL GROUPS  
 WHO REPORT THAT VARIOUS SOURCES OF TRAINING WERE USEFUL  
 IN OBTAINING THEIR CURRENT JOB**

Occupational Group	Sources of Training								
	High School	Vocational Education	Junior or technical College	College	Company Training	On the Job	Military	Correspondence School	Friends
Executive, administrative, managerial	3 (6)	4 (5)	5 (4)	34 (2)	12 (3)	39 (1)	3 (6)	1 (7)	3 (6)
Professional specialties	2 (7)	5 (5)	7 (4)	70 (1)	9 (3)	22 (2)	2 (7)	1 (8)	3 (6)
Technicians and related support	5 (6)	11 (5)	20 (3)	24 (2)	14 (4)	32 (1)	5 (6)	2 (7)	2 (7)
Sales	2 (5)	2 (5)	3 (4)	8 (3)	12 (2)	23 (1)	1 (6)	1 (6)	3 (4)
Administrative support	16 (2)	5 (6)	8 (3)	6 (5)	7 (4)	31 (1)	1 (7)	1 (7)	1 (7)
Private household Service workers	1 (4)	0	0	0	1 (3)	4 (2)	0	0	5 (1)
Farming, forestry, and fishing	2 (4)	1 (5)	2 (4)	4 (3)	1 (5)	16 (1)	0	0	11 (2)
Precision production, craft, and repair	5 (4)	4 (5)	5 (4)	2 (6)	17 (2)	40 (1)	5 (4)	2 (6)	8 (3)
Operators, assemblers, and inspectors	3 (3)	2 (4)	2 (4)	1 (5)	6 (2)	26 (1)	1 (5)	0	3 (3)
Transportation and materials moving	1 (5)	1 (5)	0	0	8 (2)	26 (1)	2 (4)	0	5 (3)
Handlers, helpers, and laborers	1 (3)	0	1 (3)	0	2 (2)	13 (1)	1 (3)	0	1 (3)
Total	5 (4)	4 (5)	5 (4)	17 (2)	10 (3)	28 (1)	2 (7)	1 (8)	3 (6)

SOURCE: Data are based on Carey and Eck 1984, tab. 1.

NOTE: Row percentages do not sum to 100 because respondents could indicate more than one source of training. In parentheses is the rank of the source's importance to the occupational category.

The pattern is similar even when one examines less aggregated data. In only 34 of the 284 detailed occupations mentioned in Carey and Eck's tables (1984) did more than 5 percent

of the respondents claim that military training was useful "for qualifying for their current job." These 34 occupations are listed in Table 3, ordered according to the percentage of

TABLE 3  
**OCCUPATIONS WITH MORE THAN  
 5 PERCENT OF MEMBERS REPORTING MILITARY TRAINING IS IMPORTANT**

Occupation	Percentage	Source Rank
Aircraft engine mechanics	45	1
Data processing equipment repairers	22	4
Electronic repairers, commercial and industrial equipment	21	2
Miscellaneous electrical and electronic equipment repairers	19	3
Electrical and electronic technicians	17	4
Aerospace engineers	14	4
Construction inspectors	12	3
Electricians	12	3
Water transportation occupations	12	3
Supervisors, mechanics, and repairers	11	3
Office machine repairers	11	4
Telephone line installers and repairers	10	3
Electrical and electronic engineers	9	4
Bus, truck, and stationary engine mechanics	9	3
Inspectors and compliance officers, except construction	8	4
Industrial engineers	8	4
Engineering and related technologists and technicians	8	6
Mechanics and repairers, except supervisors	8	4
Vehicle and mobile equipment mechanics and repairers	8	4
Electrical power installers and repairers	8	3
Sheet-metal workers	8	3
Plant and systems operators	8	3
Engineers (not elsewhere classified)	7	5
Operations and systems researchers and analysts	7	5
Heating, air conditioning, and refrigeration mechanics	7	6
Millwrights	7	4
Personnel and labor relations managers	6	4
Management analysts	6	5
Purchasing agents and buyers	6	5
Dentists	6	2
Firefighting and fire prevention occupations	6	4
Police and detectives	6	5
Guards	6	3
Automobile mechanics	6	5

SOURCE: Data are from tables in Carey and Eck 1984.

respondents who reported that military training was important. Table 3 also reports the rank order of military service as a source of training for

TABLE 4  
RELATIVE IMPORTANCE OF MILITARY TRAINING BY OCCUPATION

Occupation	Importance Relative to First Source
Aircraft engine mechanics	1.00
Electronic repairers, commercial and industrial equipment	0.75
Data processing equipment repairers	0.71
Miscellaneous electrical and electronic equipment repairers	0.63
Electrical and electronic technicians	0.44
Guards	0.30
Electricians	0.27
Telephone line installers and repairers	0.27
Supervisors, mechanics, and repairers	0.26
Construction inspectors	0.26
Inspectors and compliance officers, except construction	0.25
Office machine repairers	0.24
Electrical power installers and repairers	0.24
Plant and systems operators	0.23
Water transportation occupations	0.23
Engineering and related technologists and technicians	0.21
Mechanics and repairers, except supervisors	0.21
Bus, truck, and stationary engine mechanics	0.21
Vehicle and mobile equipment mechanics and repairers	0.20
Aerospace engineers	0.19
Millwrights	0.19
Sheet-metal workers	0.19
Heating, air conditioning, and refrigeration mechanics	0.18
Purchasing agents and buyers	0.16
Industrial engineers	0.16
Operations and systems researchers and analysts	0.16
Automobile mechanics	0.16
Personnel and labor relations managers	0.15
Firefighting and fire prevention occupations	0.15
Electrical and electronic engineers	0.14
Management analysts	0.14
Police and detectives	0.14
Engineers (not elsewhere classified)	0.10
Dentists	0.06

SOURCE: Data are based on tables in Carey and Eck 1984.

each occupation. In only one case—aircraft engine mechanics—was military training the most important source of training. In only two occupations was military training the second most important source of training: dentistry and “electronic

repairers, commercial and industrial equipment.”

A measure of the relative standing of military training for an occupation can be derived from Carey and Eck’s data by calculating the ratio  $P_m/P_f$ , where  $P_m$  is the percentage of respon-

dents who report that military training is an important source of training, and  $P_f$  is the percentage of respondents who cite the occupation's most common source of training, whatever it might be. When the military is the most important source of training, the ratio attains a value of 1. When no members of an occupation claim that military training is important, the ratio assumes a value of 0. Table 4 lists the 34 occupations in Table 3 according to this ratio, which falls off rapidly. By the time one accounts for the top 34 occupations, the ratio has fallen to 0.06. The list indicates that military training seems most important for aircraft mechanics and for those who operate or repair electronic or computational devices. In general, then, it would appear that military training is relatively unimportant outside of a handful of occupations and, even in most of these, the military is neither a primary nor a secondary source of training.

Several studies have attempted to assess how people who obtain occupational training in the military fare relative to those who receive training elsewhere. Fredland and Little (1980) estimated that military training brought World War II veterans a 12 percent premium in wages but that comparable civilian training brought a premium of 16 to 17 percent. Veterans trained by the military in the skilled trades apparently enjoyed no premium for their training. Persons trained in the skilled trades in the civilian economy, however, received a return of 18 to 21 percent. Norrblom (1976) found that a year of

military training brought a 12 percent return on wages. However, pre-service civilian training yielded a 16 percent return and preservice work experience in an occupation yielded another 7 percent. Thus Norrblom's data indicate that civilian training may be worth at least 25 percent more than comparable training in the military.

*The effects of military  
service on employment*

Different sources of training may be unequally available (or even viable) for different groups of young people. For instance, there is reason to believe that the military may be a much more accessible source of training for the less privileged and for minorities, in particular. Although Crane and Wise (1987) found no difference between the ability of high school graduates who enlisted and those who attended two-year colleges or entered the labor force, they reported that enlistees were more likely to come from poorer families and to be minorities. African Americans currently represent 16 percent of all enlistees but only 10 percent of the civilian labor force (Crane and Wise 1987). From 1969 to 1978 the percentage of white 18- to 24-year-olds in the military fell from 20 percent to 7 percent, whereas the percentage of African Americans in the military from the same age bracket remained constant at 14 percent (Ellwood and Wise 1987). Thus the military appears to be twice as important as an employer (and, one would assume, a trainer) of young African Americans as it is for young whites.

In fact, it appears that military service may significantly lower aggregate unemployment among African American, but not white, youths. Ellwood and Wise (1987) estimated the effect of enlistment on civilian employment rates for young white and young African American males. Although their estimate was statistically insignificant, they found that when a white male enlists in the military, civilian employment among young white males falls by 0.29 of an individual. When a young African American male enlists, employment of African American youths increases by 1.00 individuals. Thus, even if the military does not serve as an important source of training for black youths, it does represent a significant source of employment. Reductions in the armed forces may well increase the rate of unemployment among minority youths.

#### WHAT RESEARCH TELLS US: CONCLUSIONS AND RECOMMENDATIONS

Although returns to military service may have been positive prior to Vietnam, since Vietnam the average veteran has, at best, neither benefited nor suffered economically from military service. In fact, returns to military service, whether positive or negative, have probably never been related to military service itself. Conceivably, selection dynamics created an illusion that military service enabled World War II veterans to earn more than comparable nonveterans. It is more likely, however, that educational attainment is the primary reason veterans have earned more than

nonveterans in some eras and less in others. As a result of the GI bill and its later incarnations, veterans were simply more likely to pursue postsecondary education than nonveterans were. In recent years, the edge conferred by educational benefits has diminished because the population as a whole has become more educated. Having an associate's or a bachelor's degree no longer sets the average veteran apart from comparable nonveterans. Thus military service does not seem to carry much of an economic advantage for the average veteran.

This generalization, however, must be tempered for three groups of veterans. First, military service continues to be economically advantageous for minorities. Minorities benefit from military service for two reasons. Because minorities take considerable advantage of the military's educational benefits and because the levels of education remain lower among minorities than among whites, minority veterans profit from military service because they eventually become more highly educated than nonveteran peers. Minorities also benefit because military service seems to reduce unemployment among African American youths. Thus the military functions as a highly effective job and scholarship program for minority youths.

The second group that may benefit from military service comprises high school dropouts. Evidence consistently shows that veterans with less than a high school degree do better than dropouts who do not enlist. Why this occurs is unclear. Perhaps because the armed forces screen drop-

outs closely, military service may serve as a credential for veterans without a high school degree. Alternatively, because of the availability of educational benefits, dropouts who enter the military may be more likely to finish school than their civilian counterparts. Finally, dropouts who enter the military may be more likely to receive occupational training. Ultimately, however, the issue of why military service benefits veterans without a high school diploma is rapidly becoming moot: the proportion of enlistees without high school degrees has declined precipitously since Vietnam (Schwartz 1986). In 1992, only 2 percent of all enlisted military personnel had less than a high school degree (U.S. Department of Defense 1992).

Veterans trained in technical specialties related to computers, electronics, and the repair of electrical and mechanical equipment constitute a third group that benefits from military service because their skills transfer readily to the civilian economy. The armed forces train approximately 5 percent of the persons who pursue such occupations in the civilian economy. If 50 percent of all veterans make use of their military training as Norrblom (1976) and Mangum and Ball (1989) report, and if one also assumes that most veterans who use their training have had a technical MOS, then in 1991 the military may have trained as many as 53,000 new entrants to the civilian labor force.<sup>3</sup> This number is roughly equivalent to 8 percent of all students who graduate annually from institutions of postsecondary education that

offer less-than-four-year degrees. Nevertheless, the military may not be the optimal source of training even for people in these occupations. Civilians trained by other institutions are just as likely to secure work related to their training, and their earnings are likely to be greater, at least during the early years of their career.

### *Policy considerations*

On the basis of existing research, there seems to be little reason to anticipate broad shortages of trained labor because of reductions in military force. Yet military reductions may exacerbate shortages of trained technicians and craftspersons, since technical jobs are growing more rapidly than any other occupational sector and since shortages already exist in numerous technical specialties (Barley 1991). Whether policies are required to offset such shortages depends on the vulnerability of technical MOSs. Given the increasingly technological nature of warfare, it would seem unwise for the military to target technical specialties for heavy reductions. All else being equal, reductions are more likely to come from nontechnical specialties that impart skills that transfer less well to the civilian economy. Nevertheless, if policymakers wish to minimize the effect of military cutbacks on shortages of trained personnel in the civilian economy, they should consider placing the burden of reductions in force on nontechnical occupational specialties.

Although the military may not be as important a source of training as

is sometimes intimated, one should not conclude that the military has no broad effects on civilian labor markets. The educational benefits that the military provides to veterans after discharge appear to matter a great deal. Because of these benefits, African American veterans, in particular, have attained levels of education that they otherwise might not have been able to afford. Thus military cutbacks may indirectly cause a shortage of trained civilians by reducing educational opportunities for those segments of the population least likely to have alternative means of financing an education.

Given that the military functions effectively as a job and scholarship program for minorities and the poor, the primary policy issue facing those concerned with the labor implications of military reductions is how to ensure educational benefits to those who would be unable to acquire further education without military service. Policymakers might consider programs for inducing minorities to complete high school and to pursue some form of postsecondary education. Postsecondary education should not, however, be construed solely as attendance at an established educational institution. Research shows that many veterans use their benefits to pursue on-the-job training (O'Neill, Ross, and Warner 1976) and that such forms of training are potentially the most effective even in technical occupations (Barley 1993). In fact, it may be the hands-on knowledge obtained by technical specialists in the military that makes them attractive to employers.

Subsidies for postsecondary education might cost less per person than the cost of supporting a serviceman or -woman for an entire tour of duty. Such an approach, however, is likely to encounter several difficulties. First, some political factions will undoubtedly frame such a program as an entitlement and hence oppose any government effort to support the education of minorities in lieu of some form of service. Second, and perhaps even more troubling, such programs may be unattractive to those who would benefit most. Research by Portes and Stepick (1993) indicates that educational attainment may be less highly valued than military service in some minority youth cultures.

Policymakers may have several options for circumventing such difficulties. One approach would be to create a job corps or a community service program for which volunteers would be repaid, in part, by a civilian equivalent of the GI bill. A second approach would be to reemphasize the importance of the National Guard as a standing militia. High school graduates might enlist for service in the National Guard rather than the armed forces, be asked to participate for a reasonably long period of time, and then be repaid immediately by stipends and access to scholarships. Finally, if advanced education is as critical for employment today as recent studies suggest (Parnell 1985; Johnston and Packer 1987; Aerospace Education Foundation 1989), then it may be time for policymakers to consider some approximation of compulsory postsecondary education. In this regard,

apprenticeship programs that link high school students to community college programs seem to have considerable promise. Whatever steps are taken, policymakers must formulate their decisions in light of the realization that reductions in military personnel are likely to increase the unemployment rate among minorities. Policies ought to be fashioned to create alternative forms of employment as well as alternative sources of training.

### Notes

1. Most studies prior to those summarized in Table 1 focused on the earnings of men and women who retired from military careers, rather than on servicemen and -women who served shorter tours of duty. Given that the policy debate does not concern those who pursue full-term careers in the military, I have restricted my attention to studies relevant to the average recruit.

2. A third explanation may be changes in culture, in particular the declining prestige of military service in American society. Several researchers have suggested that Vietnam veterans were disadvantaged in the civilian economy due to the war's unpopularity. Patterns of earnings for recent veterans are similar to those of Vietnam vets, however, so a cultural explanation for dwindling returns is not particularly compelling.

3. This figure represents half the number of servicemen and -women discharged in 1991.

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