



Strengthening Prior Service–Civil Life Gains and Continuum of Service Accessions into the Army’s Reserve Components

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Preface

This document reports the results of the study “Army Accessions Prior Service–Civil Life Gains and Continuum of Service Market Potential Study,” which aimed to improve the active component (AC) to reserve component (RC) transition process of former active-duty soldiers. To this end, we focus on identifying and characterizing the personnel who are most likely to transition from the AC to the RC and the typical timing of transitions. We also examine the effects of other factors, such as the civilian unemployment rate or the location of the last AC base, on this decision.

We describe our findings, which are based on both qualitative information from focus groups and quantitative estimates from personnel data, in this document. The findings should be of interest to RC policymakers and staff concerned with recruiting and retaining reserve personnel.

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Contents

Preface	iii
Figures	vii
Tables	ix
Executive Summary	xi
Summary	xiii
Acknowledgments	xvii
Abbreviations	xix

CHAPTER ONE

Introduction	1
---------------------------	---

CHAPTER TWO

Historical Trends and Challenges in the Army's AC-RC Force Mix	5
Factors That May Contribute to AC Soldiers' Choice to Enter the RC	6
Demographic Factors	6
Economic Factors	7
Geographic Factors	8
Previous Experience with the AC	10
Identifying Prior-Service Recruits for RC Service	10

CHAPTER THREE

Transitions to the Reserve Component: Enlisted Personnel	13
Who Affiliates? When Does Affiliation Occur?	13
How Does Geography Influence Affiliation?	22
Separating the Factors That Influence Affiliation	28
Probability of Affiliation with the RC	29
Probability of Affiliation with the USAR (Versus ARNG)	31
Probability of Affiliating with the USAR Within Six Months	33
Persistence in the RC as a Measure of Performance	34
Affiliation Among Enlisted Personnel	35

CHAPTER FOUR

Transitions to the Reserve Component: Officers	37
Who Affiliates? When Does Affiliation Occur?	37
Separating the Factors That Influence Affiliation	48
Persistence in the RC as a Measure of Performance	51
Affiliation Among Officers	53

CHAPTER FIVE

Qualitative Analyses	55
Focus Groups with Service Members	55
Interviews with Reserve Recruiters	57
Procedural and Regulatory Concerns	58

CHAPTER SIX

Conclusions and Recommendations	61
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APPENDIXES

A. Data Description	67
B. Qualitative Research and Instruments	71
C. Additional Map	75

References	77
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Figures

1.1.	Representation of Flows from the Regular Army	2
3.1.	Pathways from the Regular Army, Enlisted Personnel	14
3.2.	Time to Affiliation Among Prior-Service Enlisted Personnel	16
3.3.	Personnel from the AC Entering the RC, by Fiscal Year.....	16
3.4.	RC Affiliation Rates Among Those Leaving the AC, by Fiscal Year.....	17
3.5.	Percentage Affiliating Within Six Months, by Fiscal Year.....	18
3.6.	RC Affiliation Rates and Number of Soldiers Leaving the AC, by Years of Service	18
3.7.	Years of Service Among Former AC Soldiers Affiliating with the RC.....	19
3.8.	RC Affiliation Rates and Number of Soldiers Leaving the AC, by Pay Grade	20
3.9.	Pay Grade Among Former AC Soldiers Affiliating with the RC.....	21
3.10.	Personal Characteristics of Soldiers Affiliating with the RC	21
3.11.	Soldiers Leaving the AC and RC Authorizations, by Census Division.....	23
3.12.	Soldiers Leaving the AC, RC Authorizations.....	24
3.13.	Geographic Region of Regular Army Soldiers Affiliating with the USAR	26
3.14.	Affiliation Rates of Soldiers Leaving the AC; RC Job Openings.....	27
3.15.	Predicted Probability of Affiliating with the RC, Enlisted Personnel	29
3.16.	Predicted Probability of Affiliating with the USAR (Versus ARNG), Enlisted Personnel	32
4.1.	Pathways from the Regular Army, Officers.....	38
4.2.	Time to Affiliation Among Prior-Service Officers	40
4.3.	Officers from the AC Entering the RC, by Fiscal Year.....	40
4.4.	RC Affiliation Rates Among Officers Leaving the AC, by Fiscal Year	41
4.5.	Proportion of Officers Affiliating Within Six Months, by Fiscal Year	42
4.6.	RC Affiliation Rates and Number of Officers Leaving the AC, by Years of Service	43
4.7.	Years of Service Among Former AC Soldiers Affiliating with the RC.....	44
4.8.	RC Affiliation Rates and Number of Officers Leaving the AC, by Pay Grade	44
4.9.	Pay Grade Among Former AC Officers Affiliating with the RC.....	45
4.10.	Personal Characteristics of Officers Affiliating with the RC	46
4.11.	Geographic Region of Regular Army Officers Affiliating with the RC.....	47

4.12.	Predicted Probability of Affiliating with the RC, Officers.....	49
4.13.	Predicted Probability of Affiliating with the USAR (Versus ARNG), Officers.....	50
B.1.	Affiliation Rates, and Average Years of Service, by Final AC Location	72
C.1.	Soldiers Leaving the AC, RC Job Openings, and RC Unit Locations	76

Tables

3.1. Characteristics of Soldiers, by Pathway to Affiliation 15

3.2. Persistence of Soldiers Who Enter the RC Through Various Pathways 34

4.1. Characteristics of Officers, by Pathway to Affiliation 39

4.2. Persistence of Officers Who Enter the RC Through Various Pathways 52

A.1. States in Each Census Division and Region 69

Executive Summary

Many service members join (affiliate with) the reserve component (RC) after leaving the Regular Army, thus bringing experienced and trained personnel into the RC. Attracting prior-service personnel to the RC provides an opportunity for the Army to retain valuable experience, perhaps especially in the current environment encompassing a drawdown and decreasing deployments. In this report, we combine quantitative and qualitative methods to understand more about the decisions service members make upon exiting the Regular Army: to join the RC or not, to join the U.S. Army Reserve (USAR) versus the Army National Guard (ARNG), and the timing of their affiliation.

We find that personal characteristics, experiences in the Regular Army, availability of positions in the RC, and economic conditions all are correlated with these decisions. Our results indicate that service members generally choose a geographic location without explicitly considering availability of jobs in the RC. Also, service members who leave the Regular Army when civilian unemployment is high are less likely than others to join the RC. While this result seems counterintuitive, personnel in our focus groups perceived that serving in the RC could disadvantage them with civilian employers; therefore, when civilian jobs are scarce, former service members may be hesitant to join the RC. Service members seem to form an impression of overall RC job availability based on the RC jobs available near their last Regular Army installation; service members who leave the Army in areas with fewer RC jobs are less likely to join the RC. Finally, those who join the USAR after a break in service serve for fewer months than other prior-service recruits (we do not have the data to perform a similar analysis for the ARNG). Overall, our findings suggest that focusing recruiting resources on soldiers who are preparing to leave the Regular Army is likely to be cost-effective; also, to the extent possible, working to ensure that more positions are available in geographic areas that appeal to personnel is likely to pay dividends.

Summary

Like the active component (AC), the reserve component (RC) recruit new personnel every year. Recruiting prior-service (PS) personnel means that some personnel who are new to the RC arrive with service-provided training and experience. As the U.S. Army reduces Regular Army (RA) or AC endstrength—and as the deployment cycle of the past decade is expected to ease—substantial experience is leaving the RA. In such an atmosphere, initiatives to increase the proportion of prior active-duty personnel who join the RC take on additional importance in helping the Army to retain experienced soldiers.

PS personnel may join the U.S. Army Reserve (USAR) or the Army National Guard (ARNG); they may join immediately, after spending time in the Individual Ready Reserve (IRR), or after spending time as a civilian (prior service–civil life gains [PS-CLG] personnel). From the Army’s perspective, the optimal pathway from the AC to the RC is unclear. Additionally, very little is known about PS-CLG personnel, and it is unclear which aspects of service are likely to be especially appealing to exiting and former soldiers.

For the purposes of our analysis, we define affiliation in the following manner:

- Direct affiliation: Join the RC within six months of leaving the RA.
- IRR affiliation: Join the RC after affiliation with the IRR; this is defined for personnel who had fewer than eight years of service at the affiliation point.
- PS-CLG: Join more than six months after leaving the RA *and* more than eight years after initial accession.

In this report, we use quantitative and qualitative methods to characterize the PS personnel who join the RC; we examine the personal characteristics of those who join as well as the factors that affect the timing of their decisions, their choice of component, and the extent to which geography and civilian labor market conditions influence affiliation decisions.

Our data include all personnel who exited the RA in the fiscal years (FYs) 2003–2010. We match this information to personnel files (service records) from the USAR and ARNG for the period covering FY 2003 through the first quarter of FY 2013. This allows us to observe affiliation rates, even when personnel have a substantial

break in service. During this time period, about 20 percent of PS enlisted personnel who left the RA prior to retirement joined the RC. Affiliation rates of PS officers were higher than the rates of enlisted personnel; about 35 percent of officers who left the RA prior to retirement joined the RC. Within both groups, the majority of those who joined the RC did so within six months of leaving the RA (direct affiliation). Among enlisted personnel, affiliation after time in the civilian world (PS-CLG affiliation) is relatively rare; however, PS-CLG affiliation plays an important role for officers who join the USAR.

There are marked differences in affiliation rates by years of service. Also, personnel leave the RA at specific points in their careers, so the distribution of personnel who are exiting the RA is concentrated at certain years of service. Among enlisted personnel, affiliation rates are highest among those with three to six years of service; this is also the point at which many enlisted personnel exit the RA. Although affiliation rates remain relatively high among personnel with 12–18 years of service, few enlisted personnel leave the RA at this point. Therefore, the vast majority of PS personnel enter the RC after serving three to six years and having achieved the pay grade of E-4 or E-5 in the RA. Among officers, affiliation rates are also highest among those who have spent three to six years in the RA; these officers most often achieved the pay grade of O-3 prior to exiting the RA. While affiliation rates remain fairly high among those with 12–18 years of service, few officers leave the RA at this point. Thus, the RA serves as a source of trained RC personnel with several years of active-duty experience.

Many of the personnel today joining the RC also accumulated significant deployment experience in the RA. Our qualitative results suggest that some personnel leaving the RA view possible future deployments as a negative aspect of RC service, while other personnel hold the opposite view.

Some personal characteristics are associated with affiliation decisions. Among enlisted personnel, but not among officers, women are less likely to join the RC. Overall, for both enlisted personnel and for officers, those with substantial deployment experience are more likely than others to affiliate. The enlisted personnel data suggest that there is no “negative selection” into the RC; indeed, PS personnel who join the RC are more likely than others exiting the RA to hold a high school diploma (rather than an alternate credential, such as a General Education Development [GED] certificate).

For both enlisted personnel and officers, women and members of some ethnic/racial minorities who do join the RC are more likely to join the USAR than the ARNG. Among officers, those with limited deployment experience, as well as those who attained a more senior pay grade, are more likely to join the USAR.

Economic conditions are also associated with affiliation—enlisted personnel and officers who leave the RA when unemployment is high are less likely to join the RC than others. While this might seem counterintuitive, focus-group participants told us repeatedly that they worried that civilian employers would hold a negative view of RC

affiliation. These results suggest that as the civilian economy improves, RC recruiting should improve as well.

Above and beyond economic conditions, geography seems to play an important role in the affiliation decision. Enlisted personnel who leave the RA in an area with many RC openings are more likely to affiliate; those who leave the RA in an area with relatively few USAR openings are more likely to join the ARNG. We also note that RA installations are distributed differently than RC units; in particular, soldiers and officers leaving the RA are often last stationed in the southeastern United States. While there are many RC units in that area, most units are in other Census divisions. Our analysis suggests that enlisted personnel who affiliate are more likely than other RC personnel to serve in units in areas that have bases with a large RA presence. Analysis on a subsample suggests that, indeed, many personnel who join the RC after leaving the RA remain in the same general region. This result also accords with our qualitative findings—in particular, enlisted personnel and officers reported consistently that they first decided where to live after leaving the RA and then considered RC service in light of their geographic decision. Our conversations with recruiters yielded information that is consistent with this finding as well. However, the information that we gathered also suggests that personnel generally make up their minds about RC affiliation as they are leaving the RA, regardless of when they actually join. There are surely exceptions to this, but the effect of the unemployment rate and RC openings at the last RA base, as well as our conversations with soldiers and officers leaving the Army, generally accord with this.

While we have information on the locations of veterans, the final bases of AC personnel, and the locations of some who join the RC, we lack the detailed information necessary to determine the migration patterns of all personnel who leave the AC. Such information would allow us to gain a better understanding of the effects of geography on the decision to join the RC. Our results do suggest, however, that experienced PS personnel will be less common at more remote locations and smaller units, and our snapshot data suggest that the RC openings are to some extent concentrated in units that are in relatively remote locations or are not near large RA bases. It may make sense to reexamine the placement of some of these units, if our results in terms of job openings are consistent across years.

Finally, we do find a few differences between those who join via PS-CLG and those who join through other pathways. However, we do not find evidence that PS-CLG personnel constitute an especially rich source of potential recruits; those recruited via PS-CLG are limited in number, serve fewer months in the USAR than others, and recruiters report a variety of issues related to recruiting this group. Examining the return on investment to recruiting personnel via PS-CLG may help the Army to determine the best use of recruiting resources.

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Abbreviations

AC	active component
AOC	Area of Concentration
AFQT	Armed Forces Qualification Test
ARNG	Army National Guard
BRAC	Base Realignment and Closure
CA	combat arms
CS	combat support
CSS	combat service support
DMDC	Defense Manpower Data Center
DoD	U.S. Department of Defense
FY	fiscal year
GED	General Educational Development
IRR	Individual Ready Reserve
MOS	military occupational specialty
NCOA	National Change of Address
PS	prior service
PS-CLG	prior service—civil life gains
RA	Regular Army (the Army’s active component)
RC	reserve component

RCCC	reserve component career counselor
TAPDB	Total Army Personnel Data Base
USAR	U.S. Army Reserve
USPS	U.S. Postal Service

Introduction

The Army is in a period of transition. The deployment cycle of the past ten-plus years has eased, and the Regular Army (RA, the Army's active component) is drawing down. Due to the combination of these two trends, substantial experience is leaving the RA.¹ To the extent that experience is valuable, initiatives to increase the proportion of prior active-duty personnel who join the reserve component (RC) take on added importance in such an atmosphere, as they provide an opportunity for the Army to retain experienced soldiers.

Prior-service (PS) personnel can join the RC, including the U.S. Army Reserve (USAR) and Army National Guard (ARNG) immediately upon leaving the active component (AC) or after a period spent completely as a civilian (prior service–civil life gains [PS-CLG] personnel). Soldiers who have remaining service obligations also may choose to enter the RC from the Individual Ready Reserve (IRR); in previous years, many of the experienced (PS) soldiers who entered the RC did so directly from the IRR. However, as RA endstrength is reduced, the number of service members flowing into the IRR is expected to eventually decline, and it is not clear that the IRR will continue to provide sufficient numbers of experienced soldiers to the RC. Today, most PS soldiers who enter the RC do so very shortly after leaving the AC, but some PS soldiers do enter the RC months or years later. In this analysis, we explore the factors that are related to a soldier's decision to join the RC, the decision to join the USAR versus the ARNG, and the timing of these affiliations.

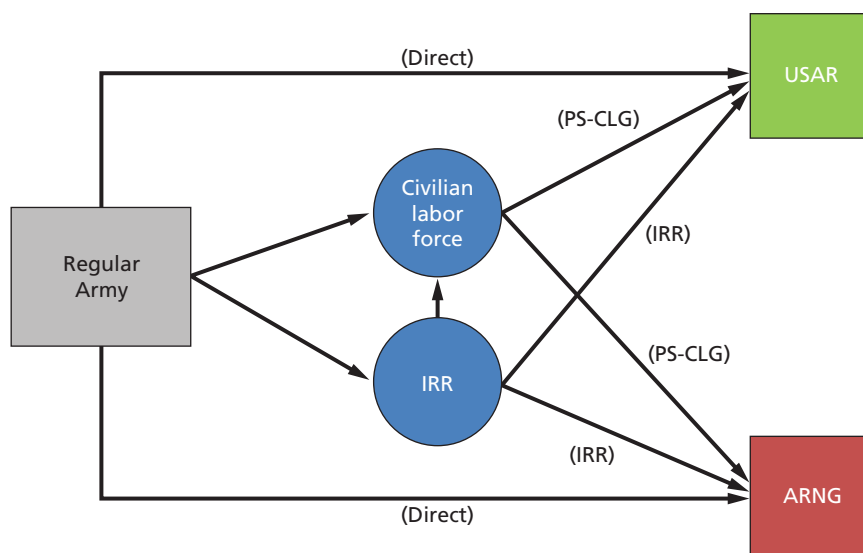
For the purposes of our analysis, we define affiliation based on the above pathways in the following manner:

- Direct affiliation: Join within six months of leaving the RA.
- IRR affiliation: Join the RC after affiliation with the IRR.²

¹ When we use the term *experience*, we generally mean years of service; however, in our quantitative analyses, we also include pay grade and time deployed as alternate measures of experience. We use the terms *AC* and *RA* interchangeably.

² For simplicity, this is defined as personnel who joined the RC within eight years of joining the AC, but not within six months of leaving the AC. While we can track service members' entry into the IRR, our data do not

Figure 1.1
Representation of Flows from the Regular Army



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- PS-CLG: Join after a break in service; more than six months after leaving the RA *and* more than eight years after accession.

Figure 1.1 presents a simple description of how personnel who leave the RA may join the RC.

From the Army's perspective, the optimal pathway from the AC to the RC is unclear. Additionally, very little is known about PS-CLG personnel, those who spend months or years in an unaffiliated status after leaving the AC and before joining the RC. Finally, it is unclear which aspects of service are likely to be especially appealing to exiting and former soldiers. In this analysis, we combine quantitative and qualitative methods to shed light on these questions. We use the Total Army Personnel Data Base (TAPDB) to examine the characteristics of those PS soldiers who join the RC.³ We also conducted a series of focus groups at several large bases with soldiers and officers who were preparing to leave the Army, as well as a series of interviews with USAR recruiters. This qualitative information allowed us to learn about aspects of ser-

indicate when service members exit the IRR. Therefore, we chose the eight-year window to capture those who were likely still affiliated with the IRR due to their initial obligation. IRR affiliations with the RC, which are processed by different persons using different procedures than those for the PS-CLG affiliates described in this report, are not a focus of our sponsor or, consequently, of this research.

³ Our information on officers is somewhat less detailed than our information on enlisted personnel, as we note in the following chapters.

vice that are especially appealing or unappealing to personnel leaving the Army, and about both advantages and challenges involved with recruiting PS personnel.

Our report is organized as follows: Chapter Two provides information about existing research on reserve recruiting, as well as research that suggests reasons PS personnel might be inclined, or disinclined, to enlist. Chapters Three and Four include our quantitative analyses on the AC-RC transition. Chapter Five includes analyses of our qualitative data, based on focus groups with soldiers who were in the process of leaving the RA and recruiters who interact with PS personnel. Finally, Chapter Six presents our conclusions as well as a series of recommendations to improve the effectiveness of RC recruiting. Appendix A provides detailed information about our quantitative and qualitative data; Appendix B discusses the protocols from our focus groups and interviews; and Appendix C provides additional maps.

Historical Trends and Challenges in the Army's AC-RC Force Mix

Today, the Army RC is somewhat larger than the Army AC.¹ Historically, PS accessions formed about half of the total accessions into the RC (Marquis and Kirby, 1989; Buddin and Kirin 1994). These soldiers frequently had completed a single term of service, with about 40 percent of those who did not reenlist at the end of their first term in the AC joining the RC (Buddin and Kirin, 1994). While the proportion of RC accessions with PS is smaller today, the affiliation of these personnel still allows the Army to retain experience. As the deployment cycle has recently decreased and deployment experience is leaving the AC, the retention of deployment experience in the RC may be especially valuable (O'Connell, Wenger, and Hansen, 2014).

There is a significant body of literature examining the characteristics of those who choose to serve in the military and how those characteristics are related to performance; most of this research focuses on the AC (see Buddin, 2005). There is also some research on enlistment into the RC and some focus on PS personnel in the RC. However, obtaining reliable estimates of the supply of PS recruits has proved especially problematic (Arkes and Kilburn, 2005). And, less is known about *why* some soldiers exiting the AC choose to enter the RC, while others do not.

While some of the existing literature is not grounded in theory, some literature carefully traces a path between economic (or other) theories and expected behaviors. For example, Arkes and Kilburn include a detailed description of the *moonlighting model*, applied to RC affiliation. In this standard labor-economics model, an individual's decision of whether or not to take a second job depends on whether the (monetary and nonmonetary) value of taking the second job exceeds the (monetary and nonmonetary) value of using the time in another way. In particular, the moonlighting model assumes the former soldier will determine and compare the values of working more hours at his or her primary job, spending time in another manner (on leisure or other

¹ Authorized endstrengths for fiscal year (FY) 2014 were 520,000 for the RA; 354,200 for the ARNG; and 205,000 for the USAR.

unpaid work), and joining the RC.² (See Asch et al., 2008.) The RC will be selected if the value of joining the RC is greater than the value of the other options. Arkes and Kilburn also point out that the theory behind the moonlighting model is fundamentally similar to that behind most recruiting models—the individual chooses to enter the service if the value of doing so exceeds the value of other options. The model does not specify the factors that are likely to affect the decision to enter the RC, but there is a literature that explores the effects of many factors. Demographic characteristics and Army experiences, civilian pay, and job factors—as well as Army pay and benefits—are likely to affect this decision. Also, location is likely to play a key role in the affiliation decision, mostly because civilian and Army factors are likely to vary with location. Below, we discuss the prior research on these factors, and also review the literature that suggests ways to identify PS soldiers and to make them more accessible to RC personnel managers and recruiters.

Factors That May Contribute to AC Soldiers' Choice to Enter the RC

The literature suggests a number of factors that may influence AC soldiers' decisions concerning affiliation with the RC. Here, we divide the factors into the following categories:

- demographic factors
- economic factors
- geographic factors
- previous AC experience (including the reasons for separation).

Of course, there will be overlap among these categories; nonetheless, dividing them in this manner is helpful as we explain how each set of factors is reflected in our empirical strategy. We discuss the existing literature on each in turn.

Demographic Factors

The existing research suggests that demographic factors (specifically gender, race/ethnicity, education/achievement level, and age) are likely to influence the decision to join the RC. In particular, members of racial or ethnic minorities have been found to affiliate at higher rates, while older service members affiliate at lower rates; the evidence

² To our knowledge, there is no literature that provides a theoretical basis for the decision between USAR and ARNG, although the theory discussed here could be applied to this decision if it were possible to quantify differences between USAR and ARNG. The initial decision that sets all of this in motion is the decision to leave the AC; past research generally has applied dynamic or multi-period versions of the model discussed here to this decision and has found that individual characteristics, service characteristics, and civilian factors help to explain the decision.

on women's affiliation rates is mixed (see Buddin and Kirin, 1994; Arkes and Kilburn, 2005; and Schulte and Dolfini-Reed, 2012). One's Military Occupational Specialty (MOS) is strongly correlated with the probability of affiliation (Buddin and Kirin, 1994). We include information on these factors in our quantitative models using service member records.

Economic Factors

Much of the literature suggests that economic downturns generally are associated with improved recruiting and retention, while low levels of unemployment and rising wages have been associated with recruiting struggles. This is especially true when examining AC recruiting, but in some cases, similar effects have been observed for the RC (see Buddin and Kirin, 1994; Arkes and Kilburn, 2005; Marquis and Kirby, 1989; and Winkler and Bicksler, 2008, p. 278). However, Schulte and Dolfini-Reed (2012) use recent data and focus on retention of U.S. Marine Corps RC personnel; they find that the unemployment rate is positively associated with retention of PS enlisted marines, but negatively associated with the retention of PS officers in the Marine Corps Reserve. This research uses a measure similar to the one we employ (state unemployment, measured monthly) and includes information from recent years (FY 2006 forward), thus capturing effects of the most recent economic recession.

Civilian labor-market conditions are likely to influence the decision to reenlist, as well as the decision to join the RC. National unemployment rates have been fairly stable and falling over the past few years (from 7.9 percent to 6.7 percent in 2013), but about 10 percent of the labor force was unemployed during 2009. While national rates provide one view of the health of the U.S. economy, state unemployment rates are believed to be more relevant in describing individuals' experiences in the job market. State rates tend to be more volatile than national rates, and state monthly rates are much more volatile (they ranged from 2.6 percent to 9.8 percent in 2013, and some states' monthly rates surpassed 15 percent in 2009–2011) (National Conference of State Legislatures, undated). During this time period and for the decade preceding the recession, civilian wages generally have been stagnant or grew only slowly; in particular, those in the civilian sector without a college degree have seen their inflation-adjusted earnings fall (Autor, Katz, and Kearney, 2008, pp. 300–323). Thus, the past 15 years have included tepid growth and then a long recession followed by a relatively slow recovery, coupled with unprecedented levels of deployment activity within the AC and RC. However, much of the research on the relationship between the civilian economy and RC affiliation was done in an era when both the RC and the civilian economy operated rather differently than in recent years. This suggests that the effects of the civilian labor market on RC affiliation and retention may be different today than in the past.

Also, it is possible that any returns to military experience in civilian-sector jobs have changed, either because of differences in the skills required in the civilian market,

differences in the experiences of today's service members versus those exiting the AC in past decades, or both (Mann, 2012, p. 301; and Loughran et al., 2011).³ Finally, today's veterans have access to generous educational benefits (the Post-9/11 GI Bill); this policy may have affected the probability of leaving the AC and/or affiliating with the RC.

The Post-9/11 GI Bill is a relatively new benefit; thus, there is little research on how this benefit has affected affiliation. However, past research has shown that reservists are affected by such benefits; for example, retirement points increase retention among reservists (Buck, 2008; Asch and Hosek, 2008; Winkler and Bicksler, 2008), and health benefits can stimulate affiliation and retention. In our quantitative models, we include indicators of economic conditions at the time that soldiers exited the AC; we also include indicators of the FY to capture other relevant changes (such as the passage of the Post-9/11 GI Bill).

Geographic Factors

Recent U.S. Census data on military personnel shows that the highest numbers of AC military personnel reside in Texas, North Carolina, Georgia, Virginia, and Kentucky; this is a function of the concentration of bases in the southeastern United States (U.S. Census Bureau, 2009, and U.S. Department of Defense, 2014a). Many veterans live in the same areas, but veterans generally are less concentrated in the southeast. A September 2013 map released by the United States Department of Veterans Affairs suggests that Texas, California, and Florida have the highest number of veterans living in those states, but New York, Pennsylvania, Ohio, Michigan, Illinois, Virginia, North Carolina, and Georgia also have high numbers of veterans (U.S. Department of Veterans Affairs, 2014). Our analysis of young veterans shows that their distribution at the state level is similar to that of all veterans, although Colorado and Maine have substantial numbers of young veterans, while Michigan and North Carolina are not among the states with the highest numbers of young veterans.⁴

Geographic factors are likely to play a large role in the decision to join the RC. While AC bases are disproportionately located in the southeastern region of the United States and young veterans often live in the same areas as noted above, RC units are more widely dispersed (this is especially the case for the ARNG, with units in each state). The concentration of AC bases suggests that many personnel who leave the AC may move away from their final AC location, and that finding an RC position may be complicated by the need to find a job in the civilian sector or the decision to live near other family members as well. RC members may live in communities distinct from

³ Mann finds that civilian experience is associated with higher wage gains than military experience; in contrast, Loughran et al. find that, while veterans initially have lower earnings than similar nonveterans, the difference disappears or reverses over time.

⁴ We used data from the Merged Outgoing Rotation Groups of the March Current Population Survey Series (CPS), for the years 2003–2011, to estimate the size of the young veteran population in each state. Young veterans are defined as those between the ages of 18 and 42.

that of their units, but they will still need to live within reasonable travel proximity of their units (Clever and Segal, 2013; and Johnson, 2009, p. 21). Additionally, RC members (and potential RC members) may make location decisions based on access to health care facilities; in particular, RC members may be at a disadvantage in enjoying the benefits of military-provided health care depending on whether they live in a rural or urban environment (Hosek and Wadsworth, 2013; Clauss, 2012; Clever, 2013, p. 31)⁵ and depending on the state they reside in (Hosek and Wadsworth, 2013, p. 43). Tax policies differ by state; although we discovered no literature on this, tax policies could also affect veterans' location decisions.

Marital status could also play a role in understanding AC/RC location. The U.S. Department of Defense (DoD) demographic report, as well as other research, indicates that AC members are more likely to be married than RC members (see U.S. Department of Defense, 2014a).⁶ However, it is likely that PS members of the RC are more likely than other RC members to be married, both because they are likely to be somewhat older and because they served in the AC where marriage rates are somewhat higher than civilian rates.⁷

There is no strong correlation between RC members' marital status and location preference in the literature (see Gewitz and Davis, 2014).⁸ However, marital status could have a direct bearing on employment opportunities for RC member spouses (which could lead to location preference). Recent data indicate that only 40 percent of AC spouses were employed, but spouses may be more likely to search for work as personnel exit the AC (U.S. Department of Defense, Office of the Deputy Under Secretary of Defense [Military Community and Family Policy], 2012, p. 125 [based on Defense Manpower Data Center 2012 Active Duty Spouse Survey]). The most recent Defense Manpower Data Center (DMDC) employment survey did not include RC personnel, so no recent DoD information exists for civilian employment levels among RC members or spouses.

The limited data available suggest that some service members may experience issues reintegrating into the civilian job market upon exiting the AC. It is unclear how these reintegration issues would manifest themselves by location and in the choice to join the RC.

⁵ Hosek and Wadsworth; Clauss; and Clever all note that RC and AC members who live in rural areas are at an increased risk for addressing battle stress (post-traumatic stress disorder and others) and homelessness. Clever also specifically notes that since many AC members do not typically serve 20 years and end up landing civilian jobs, AC members may never actually use Veterans Affairs benefits.

⁶ According to Appendixes B and C of U.S. Department of Defense (2014a), in FY 2013, about 55 percent of AC members and 45 percent of RC members were married.

⁷ Our data indicate that 44 percent of enlisted service members, and 70 percent of officers, separating from the AC are married.

⁸ Gewitz and Davis seem to refute the DoD numbers, stating that, "On average NG/R personnel are older, and more likely to be partnered and parenting, than 'regular' active duty military personnel."

Due to the likely importance of geographic factors, we include several geographic measures in our quantitative analyses; in particular, we are able to identify the final AC base for all soldiers and officers in our data set, as well as the home of record (prior to joining the AC) for most, and the first RC location for some.

Previous Experience with the AC

A final factor in the choice to join the RC involves the members' direct experience in the AC, and whether it was positive or negative. If the individual had a negative experience, or did not feel committed to the AC position or military organization, the individual may decide to forgo further military service. (See Bressler, 2010; Stetz, Castro, and Bliese, 2007; and Lytell and Drasgow, 2009). As such, AC soldier feelings of prior fulfillment (Bressler, 2010, p. 2) are likely to influence the probability of transitioning to the RC. For example, soldiers in occupations that provide more technical training may report more positive experiences. Relatedly, some types of AC experience may be less applicable to the civilian sector than others; in particular, soldiers who served in combat-arms (CA) occupations will understandably have "less direct transferability of their military training to the civilian sector and less overlap between their civilian occupation and their reserve job" (Buddin and Grissmer, 1994, p. 24). Also, the amount of deployment experienced by a soldier may influence overall perceptions (but note that there is evidence that deployments may be viewed either positively or negatively). (See Hosek and Totten, 2002, and Hosek, Kavanagh, and Miller, 2005.) Of course, the circumstances surrounding a soldier's decision to leave the Army are likely to have an effect as well; soldiers who are separated involuntarily may be ineligible to join the RC in some cases and may be unlikely to do so in other cases, as may be those who separated voluntarily but were unhappy with their experience with the AC or with their experiences with RC personnel while serving in the AC. (The soldiers in our focus groups appeared to be leaving voluntarily.)

Our data include indicators of soldiers' occupations as well as their deployment experience; we include these factors in our models. However, there are no direct measures of soldier perceptions in service members' records; thus, we depend on information gathered in our focus groups for information about such perceptions.

Identifying Prior-Service Recruits for RC Service

The Army may benefit from understanding how education alumni services use data and track graduates to better understand how to make PS recruits more easily identifiable. Although each alumni office may have incorporated its own unique mechanisms of tracking prior students for a variety of reasons (funding, speaking engagements, career-outreach services, other college events), much of the *method* by which alumni are tracked remains the same.

In the pre-digital age, most college records were managed by university secretaries whose main goal was to stay in direct contact with graduates throughout their career—by way of paper mailing, holding set college reunions, and maintaining alumni registers during homecoming events (Hall, 1949). The digital age has made tracking alumni a near-effortless task. Universities now maintain electronic student records, access student affiliated Facebook and LinkedIn pages, and even use/run a National Change of Address (NCOA) check to track graduate locations (Council for Advancement and Support Education, undated).

The NCOA is a paid service hosted by the U.S. Postal Service (USPS), but may be run by an assortment of third-party vendors. The NCOA varies in price depending on the user and how the information is to be used. However, one of the setbacks of using the NCOA could result from an individual not updating his/her location with the USPS. As such, universities may only use this as one *tier* of their outreach approach, while using the various other digital means (U.S. Postal Service, 2015).

Overall, a university best-practice list may include a multipronged digital and written approach, an ability to capitalize on major alumni events (as in the past), integrating the outreach alumni office with the actual data gatherers, and even expanding the *scope* of alumni to include parents, other family members, and donors (Tansey and Yarrish, 2008).

There are also some challenges that universities still face when keeping track of alumni. For instance, attracting alumni to social networks may only work for some outside of the network—other incentives may be needed to attract membership (Gandham, 2011). Privacy concerns also remain regarding the use of social-site data mining, and some forms of data mining may actually have the opposite of the intended effect on the targeted audience, serving to push them away rather than attracting them. Recently, universities have been trying to develop ways to get the active student body incorporated into alumni systems, which would provide a lasting link when students disperse after graduation.

By adopting some of the best-practices methodology that universities have used to keep track of graduates, the Army could very well use the same mechanisms to keep track of transitioning service members to better understand and identify such members and make their data available to Army recruiters. Another option for improving identification of some PS recruits is to more closely coordinate with the IRR identification efforts.

Next, we present our quantitative analyses, modeling the probability that enlisted personnel and officers leaving the AC will join the RC. We present results for enlisted personnel in Chapter Three and results for officers in Chapter Four.

Transitions to the Reserve Component: Enlisted Personnel

In this chapter, we describe our quantitative analysis of enlisted personnel and their transitions to the RC. We focus on the number and proportion of soldiers who transition to the RC and when soldiers transition, as well as the roles that personal characteristics, geography, and the civilian labor market play in explaining AC to RC transitions. Based on our review of the literature, any or all of these factors could influence soldiers' decisions to join the RC. Our discussions with soldiers about the factors that influenced their decisions confirm this. See Chapter Five for a summary of our discussions with soldiers.

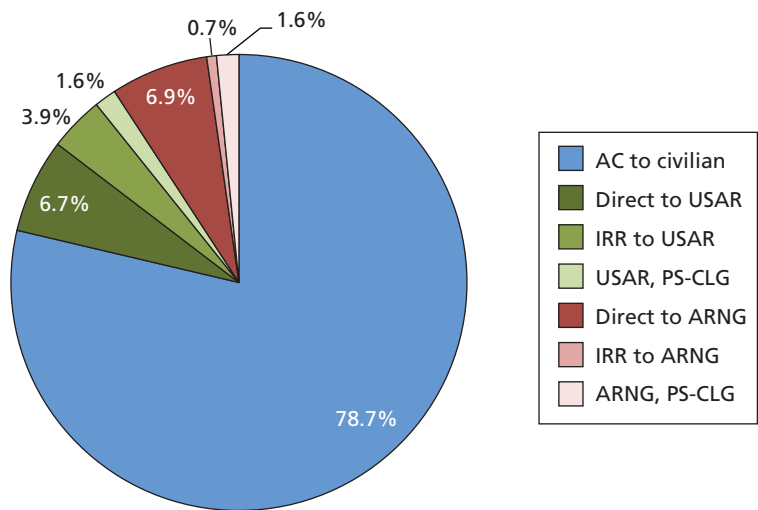
Our quantitative analyses are based on a dataset formed from matching personnel who left the RA in the FY 2003–2010 period with USAR and ARNG databases; in this manner, we identify those soldiers who join the RC.¹ We begin with detailed descriptive statistics on the timing of affiliation, as well as the personal characteristics of those who affiliate. In the next section, we present regression analyses to distinguish the characteristics of those who do and do not affiliate and to separate effects that may be correlated with, for example, timing of affiliation versus age of personnel.

Who Affiliates? When Does Affiliation Occur?

As shown in Figure 3.1, most enlisted personnel who leave the RA do not join the RC in the period covered by our data. However, a sizable fraction does affiliate: Among our sample of soldiers leaving the RA with fewer than 20 years of service, about 21 percent affiliated with the RC. Personnel are more likely to join the USAR (roughly 12 percent) than to join the ARNG (roughly 9 percent). We explore the time to affiliation in more detail, below, but we note here that direct affiliations are by far the most common path. In other words, the majority of personnel who enter the RC after leaving the RA do so within a short window of time. Among both USAR and ARNG affiliates, PS-CLG

¹ We discuss our dataset in more detail in Appendix A, but note here that we use RC data through the first quarter of FY 2013 to allow personnel time to affiliate; also, we exclude personnel who leave the RA with 20 or more years of service from our analyses.

Figure 3.1
Pathways from the Regular Army, Enlisted Personnel



SOURCE: RAND Arroyo Center analysis based on Army personnel data.
RAND RR1376-3.1

gains are much less frequent. Finally, the IRR appears to be a more-important source of PS recruits for the USAR than for the ARNG: Those who enter the RC from the IRR are more likely to enter the USAR than the ARNG. We have no direct information to explain these differences, but some of our results presented later in the chapter suggest potential explanations.

There is surely an optimal rate of PS personnel entering the RC. To our knowledge, no estimates of that rate exist, and we do not have the information on all costs and benefits that would be necessary to produce such estimates. However, nothing we learned in our discussions with recruiters indicated that the current rate of affiliation is too high.

Next, we provide more information on the characteristics of soldiers who enter the RC through these different pathways. Table 3.1 indicates that there are similarities among soldiers who affiliate by different pathways and that many of the differences in evidence are fairly small. For example, women make up one-fifth of those leaving the Army (and one-fifth of those who do not affiliate), but women make up a smaller share of direct and IRR affiliates and a slightly larger share of PS-CLG affiliates. The pattern for African Americans is similar; in contrast, Hispanics affiliate at relatively high rates through all pathways, and thus the percentage of RC affiliates who are Hispanic is larger than the percentage transitioning to the civilian world. Finally, those affiliating directly are more likely to have a high school diploma or some college, while those affiliating via the IRR or PS-CLG are more likely to have passed the General Education Development (GED) test than those affiliating directly. In particular, those affiliating

Table 3.1
Characteristics of Soldiers, by Pathway to Affiliation

Characteristics	AC to Civilian	Direct (Within Six Months)	From the IRR	PS-CLG
Men	80%	83%	82%	78%
Women	20%	17%	18%	22%
African American	18%	18%	15%	22%
Hispanic	10%	14%	14%	14%
Married with children	22%	24%	15%	26%
Some college	8%	9%	7%	7%
Holds high school diploma, no college	68%	86%	75%	73%
Holds GED	14%	8%	11%	10%
AFQT \geq 50	66%	67%	63%	62%
Average deployment experience (months)	6	11	10	8
Average years of service	3.8	5.2	3.6	5.0

SOURCE: RAND Arroyo Center analysis based on Army personnel data.

NOTE: Each figure in this table indicates the percentage of personnel joining the RC through the indicated pathway and possessing the characteristic.

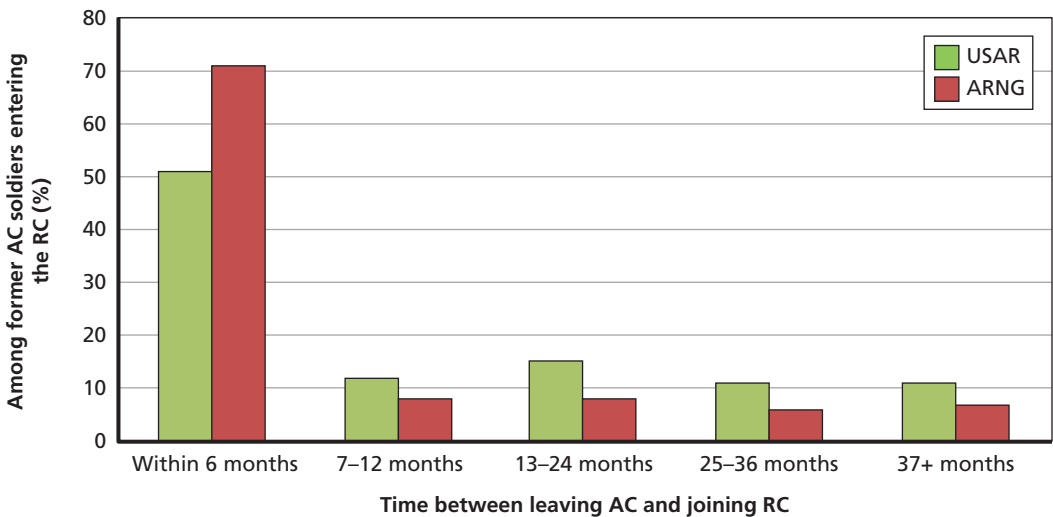
directly are more likely than those affiliating through other pathways or those transitioning to the civilian world to have at least a high school diploma or to score in the upper half of the Armed Forces Qualification Test (AFQT) distribution. Those affiliating via the IRR have fewer years of service, while those affiliating through PS-CLG have fewer months of deployment experience. Most of these differences are small, but Table 3.1 suggests that personal characteristics may be linked to affiliation pathway, and also that those who join the RC score fairly high on such traditional *quality* indicators such as the AFQT and education credential.

Figure 3.2 provides more information on time to affiliation. Consistent with Figure 3.1, Figure 3.2 indicates that about half of all personnel entering the USAR and about 70 percent of those entering the ARNG do so within six months of leaving the RA (i.e., direct affiliation).

Next, we examine the number of personnel from the AC flowing into the RC by year and component. As shown in Figure 3.3, the flow differed both by year and by component. In particular, large numbers of enlisted personnel with AC experience entered the RC during FYs 2006–2010, and those personnel were especially likely to enter the USAR. In general, former AC personnel were more likely to enter the USAR than the ARNG over the period included in our sample. This, coupled with the smaller total size of the USAR versus the ARNG, implies that over the past decade PS personnel have made up a larger proportion of USAR personnel than of ARNG personnel.

Figure 3.4 demonstrates the *eventual* affiliation rate of soldiers exiting the AC, by the FY of exit. Figure 3.4 is not directly comparable to Figure 3.3, because Figure 3.3 indicates the *total number affiliating by FY*, while Figure 3.4 tracks the *affiliation rate over time* and because the number of personnel leaving the RA varied somewhat across the years included in our sample. In other words, Figure 3.4 tracks personnel by the year they left the AC, while Figure 3.3 tracks the same personnel but by the year they

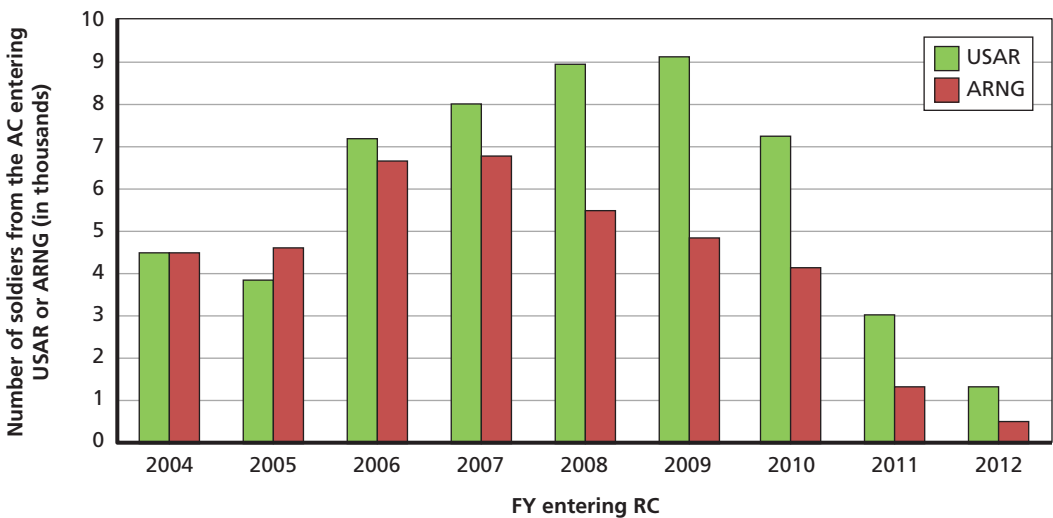
Figure 3.2
Time to Affiliation Among Prior-Service Enlisted Personnel



SOURCE: RAND Arroyo Center analysis based on Army personnel data.

RAND RR1376-3.2

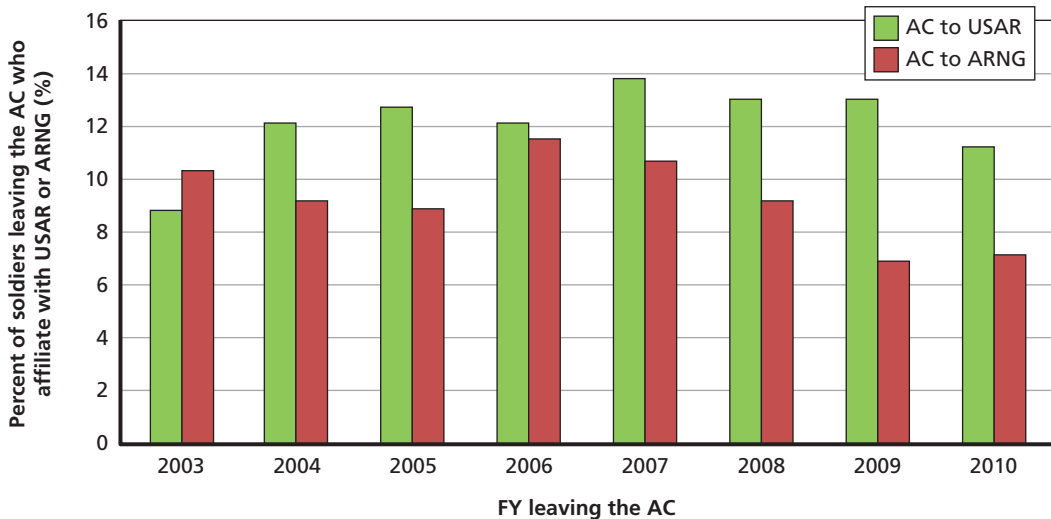
Figure 3.3
Personnel from the AC Entering the RC, by Fiscal Year



SOURCE: RAND Arroyo Center analysis based on Army personnel data.

RAND RR1376-3.3

Figure 3.4
RC Affiliation Rates Among Those Leaving the AC, by Fiscal Year



SOURCE: RAND Arroyo Center analysis based on Army personnel data.

RAND RR1376-3.4

entered the RC. The more-even flows in Figure 3.4 than in Figure 3.3 suggest that average time to affiliation could vary across our sample period. We track time to affiliation, by FY, next.

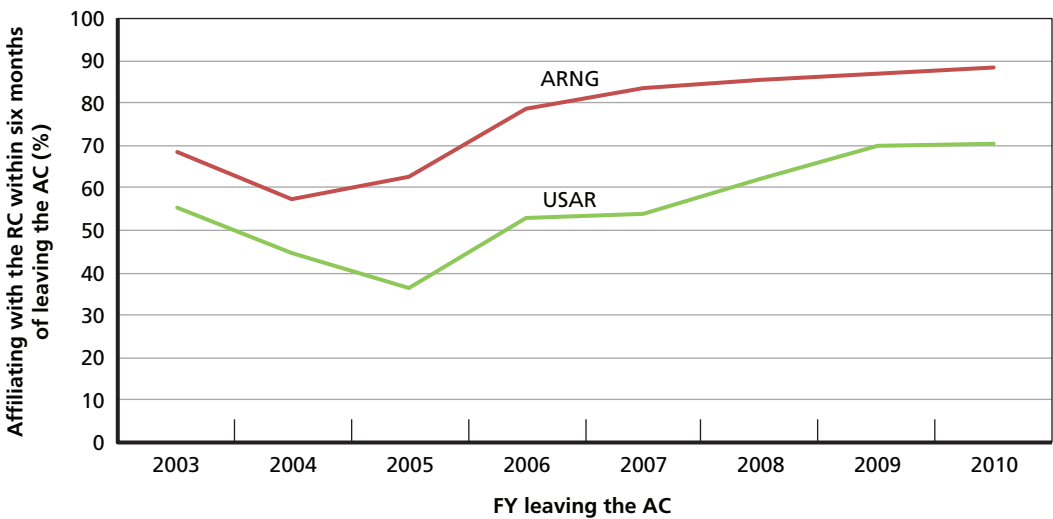
Figure 3.5 includes all personnel who join the RC after leaving the AC, breaking down some of the information in Figure 3.2 by FY. Figure 3.5 indicates that beginning around 2005, an increasing proportion of those who affiliated with the RC did so within six months. Also, consistent with Figure 3.2, Figure 3.5 shows that affiliation rates are somewhat faster among PS personnel joining the ARNG than among those joining the USAR. While most PS personnel affiliate quickly, some personnel affiliate after several years in the civilian world (see Figure 3.1). Therefore, it is possible that the percentage affiliating within six months for the later FYs will decline slightly, as these soldiers have more time to choose whether to affiliate.

Next, we look at affiliation rates by personal characteristics (in particular, years of service, but also pay grade as well as gender, ethnicity, and education).

In Figure 3.6, the green and red bars indicate the affiliation rate of soldiers by their years of service. Affiliation rates are highest among soldiers who have completed about one term (specifically, three to six years of service).² These soldiers are more likely to join the USAR than the ARNG. The blue line in Figure 3.6 indicates the distribution of soldiers leaving the RA by years of service. Soldiers with three to six years of

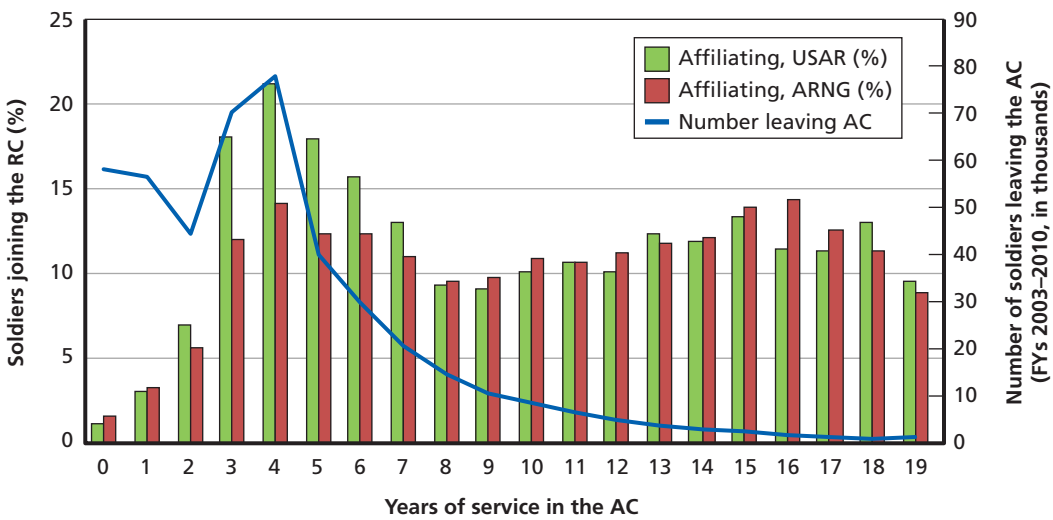
² We calculate completed years of service, so three years of service indicates a soldier completed at least 36, but fewer than 48, months of service, and so forth.

Figure 3.5
Percentage Affiliating Within Six Months, by Fiscal Year



SOURCE: RAND Arroyo Center analysis based on Army personnel data.
RAND RR1376-3.5

Figure 3.6
RC Affiliation Rates and Number of Soldiers Leaving the AC, by Years of Service



SOURCE: RAND Arroyo Center analysis based on Army personnel data.
RAND RR1376-3.6

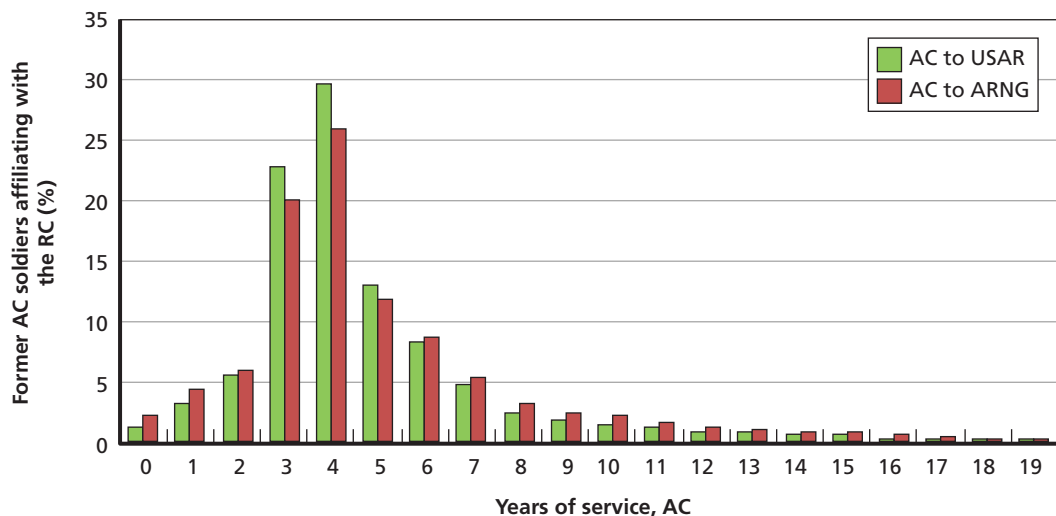
service make up the bulk of those leaving the RA, and the affiliation rates are highest among this group. Soldiers with 13 to 18 years of service also have higher affiliation rates, but there are far fewer of these soldiers leaving the RA. This suggests that soldiers with three to six years of experience in the RA are likely to make up the bulk of PS soldiers entering the RC. Thus, soldiers who have completed a single term of service have higher separation and affiliation rates than others. As a result, most soldiers who enter the RC after serving in the RA spent three to six years serving in the RA.

Figure 3.7 shows the distribution of years of service among PS personnel who enter the RC (thus, Figure 3.7 combines the affiliation rates and the number of soldiers leaving the RA shown in Figure 3.6). Consistent with the information in Figure 3.6, Figure 3.7 indicates that the majority of soldiers who join the RC acquired three to six years of experience in the AC.

We next carry out a similar analysis on the distribution by pay grade. Figure 3.8 shows that affiliation rates are highest among those who are E-4s or E-5s at the time they separate from the RA, and that E-4 is the most common pay grade among those leaving the Army.

The combination of the distribution of soldiers leaving the AC and the affiliation rates by pay grade shown in Figure 3.8 imply that AC personnel who transition to the RC typically held the pay grade E-4 immediately prior to leaving the RA. Figure 3.9 shows the pay-grade distribution of former AC personnel who join the RC; indeed, the majority of these soldiers held the pay grade of E-4, and the vast majority held either the pay grade of E-4 or E-5 upon leaving the RA. Thus, PS personnel who enter the RC

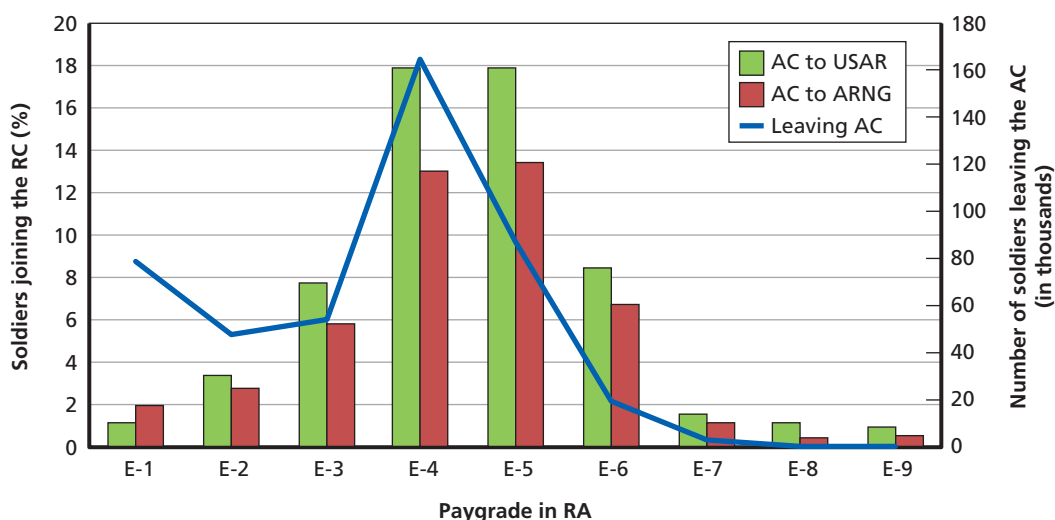
Figure 3.7
Years of Service Among Former AC Soldiers Affiliating with the RC



SOURCE: RAND Arroyo Center analysis based on Army personnel data.

RAND RR1376-3.7

Figure 3.8
RC Affiliation Rates and Number of Soldiers Leaving the AC, by Pay Grade



SOURCE: RAND Arroyo Center analysis based on Army personnel data.

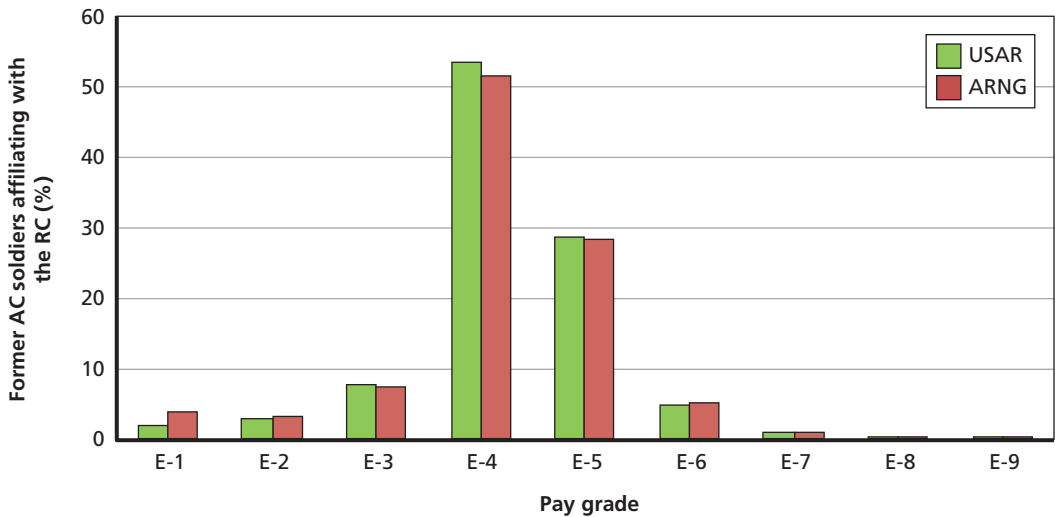
RAND RR1376-3.8

most commonly last served as E-4s or E-5s and generally spent between three and six years in the RA. *Therefore, the RA is a source of experienced RC personnel, but few who affiliate were promoted beyond the rank of sergeant in the RA.*

Of course, years of service and pay grade are closely linked, due to promotion policies and time-in-service/grade requirements. Therefore, in a sense, Figures 3.6–3.9 provide very similar information; all the figures suggest that the *typical* soldier who joins the RC after leaving the AC has served roughly one term and has been promoted in a timely manner. However, these figures also show that some personnel who leave the AC with few years of service and/or at a low pay grade also join the RC. While our data provide only a few measures of quality, there is evidence that promotion can serve as one measure of quality (see Hosek and Mattock, 2003); this suggests that the performance of those who join the RC after a very short time in the AC might compare unfavorably with the performance of personnel who served longer and achieved a higher pay grade.

We also examined the personal characteristics of soldiers who left the RA and affiliated with the RC. As shown in Figure 3.10, soldiers who join the RC differ somewhat from the group of all soldiers leaving the AC, and there are differences between the USAR and ARNG. Almost 20 percent of soldiers leaving the RA are women. Women are somewhat more likely than men to join the USAR, and are substantially less likely than men to join the ARNG. The pattern is somewhat similar among African Americans, Hispanics, and those with some college education; in each case, per-

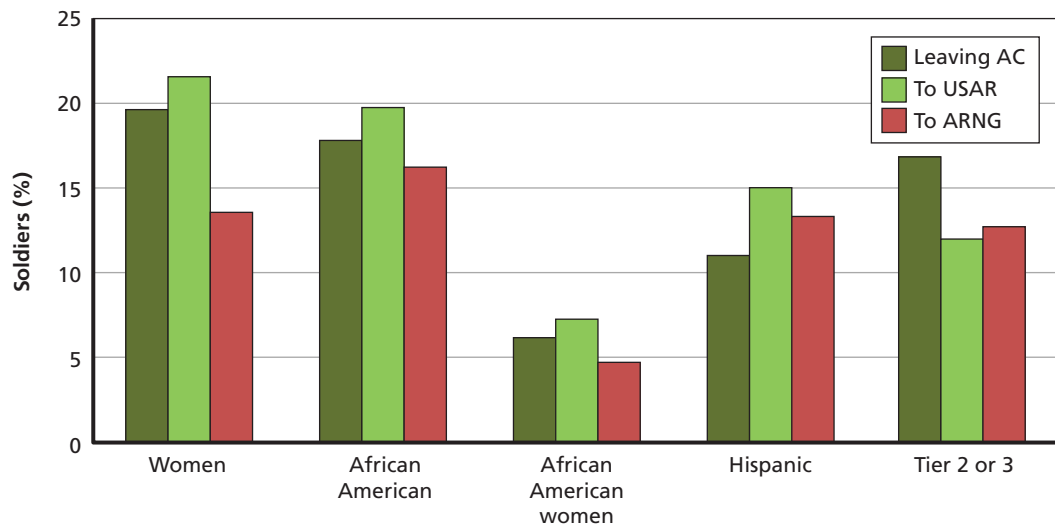
Figure 3.9
Pay Grade Among Former AC Soldiers Affiliating with the RC



SOURCE: RAND Arroyo Center analysis based on Army personnel data.

RAND RR1376-3.9

Figure 3.10
Personal Characteristics of Soldiers Affiliating with the RC



SOURCE: RAND Arroyo Center analysis based on Army personnel data.

RAND RR1376-3.10

sonnel with these characteristics are more likely to join the USAR than the ARNG.³ We do not know all of the reasons for the differences, and our conversations with soldiers leaving the AC did not reveal reasons for such differences. To some extent, the differences could be driven by differences in patterns of MOS; in particular, most CA positions in the RC are located within the ARNG (we explore this idea in more detail in the next section). Finally, exiting AC soldiers who have not completed a traditional high school degree (and therefore do not hold a Tier 1 educational credential) are less likely to join the RC.

The descriptive statistics discussed in this section and displayed in Figures 3.1–3.10 suggest that most PS soldiers who join the RC do so within six months of leaving the RA, and that, beginning in the mid-2000s, the proportion affiliating within six months began to increase. There are some interesting differences between the components: Soldiers who join the ARNG are even more likely than those who join the USAR to do so within six months, and women and soldiers who are members of racial or ethnic minorities appear more likely to join the USAR than with the ARNG. PS soldiers who join the RC typically have served a single term in the RA. Finally, there are some small differences in soldiers by pathway of affiliation: Women and racial/ethnic minorities are somewhat more likely than others to affiliate after a break in service.

How Does Geography Influence Affiliation?

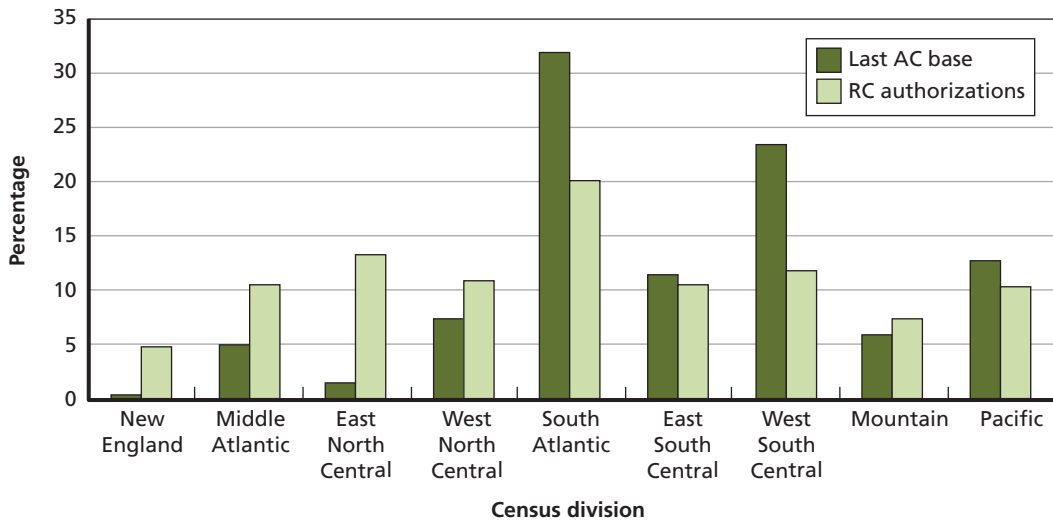
Geography is likely to have a significant influence on affiliation; affiliation is only possible if there is an appropriate opening in the RC that is in the geographic area where the service member chooses to live after separating from the AC. Given the relatively modest pay associated with RC affiliation, it seems unlikely that personnel who choose to affiliate make their location decisions based on RC authorizations or available spaces; our qualitative analyses confirm this.

RC units are distributed in a different manner than AC units. In general, RC units are distributed in a less-concentrated manner; in particular, ARNG units are located in each state. Figure 3.11 shows the distribution of the average number of soldiers leaving the AC each year, as well as the number of authorizations in the RC, by Census division.⁴ For example, Figure 3.11 shows that more than 30 percent of personnel leave the RA from a base in the South Atlantic Division, while about 20 percent of RC authorizations are in this division. Indeed, more than two-thirds of Army per-

³ Figure 3.10 includes some of the same information as Table 3.1, but Figure 3.10 separates the data by component rather than by time to affiliate. All differences presented are statistically significant at the 5-percent level or better, meaning that the result would have occurred by chance one time in 20 or fewer.

⁴ Authorization information comes from snapshot files from the summer of 2013.

Figure 3.11
Soldiers Leaving the AC and RC Authorizations, by Census Division



SOURCE: RAND Arroyo Center analysis based on Army personnel data.

RAND RR1376-3.11

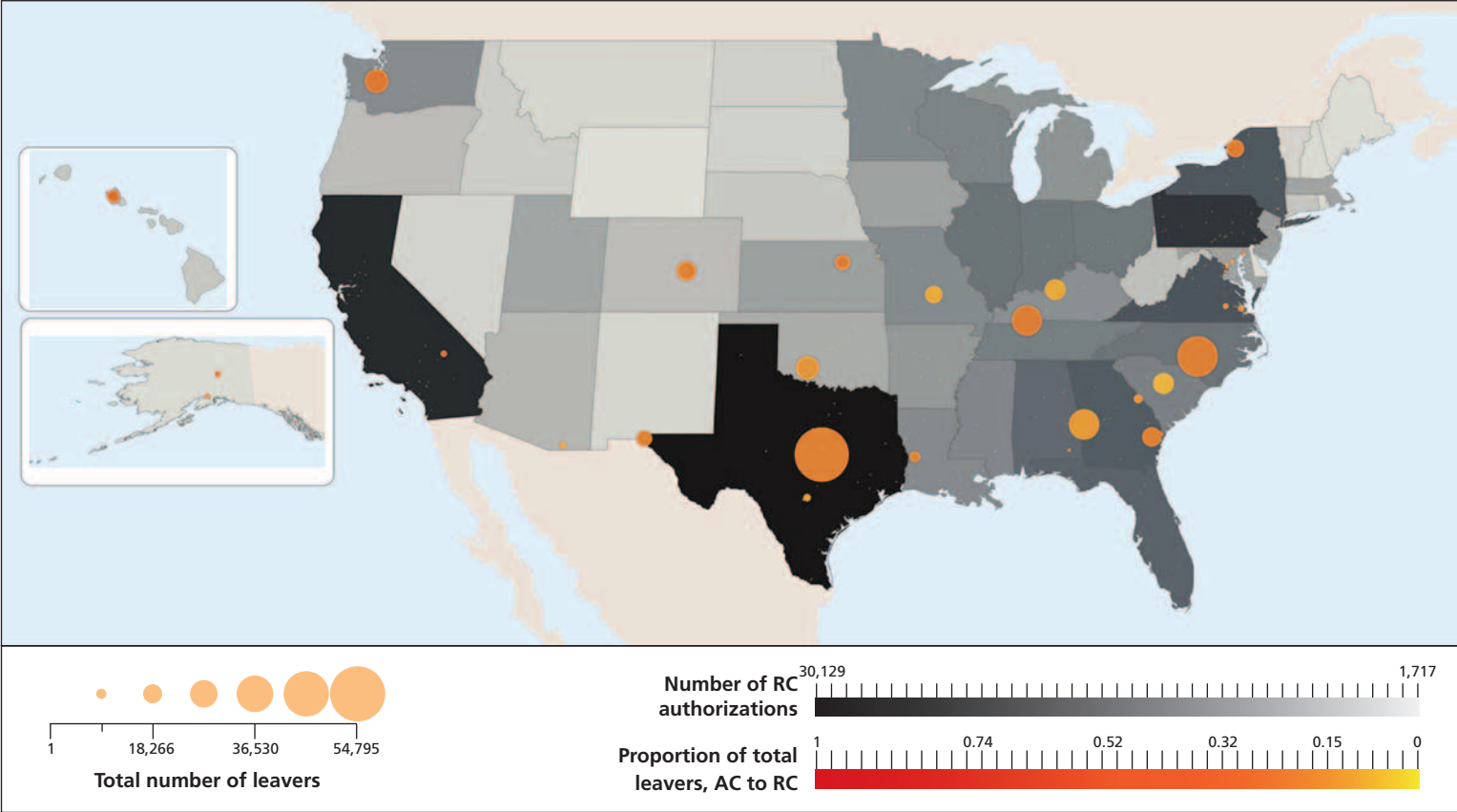
sonnel leave from a base in the southern region of the United States (south Atlantic, east south central, and west south central), but only 43 percent of RC authorizations are located in these areas.⁵ While this figure does not graph supply and demand per se, it indicates that personnel who leave the AC are likely to have been stationed in the southern region; therefore, RC units in the southern region of the United States may find it easier to recruit PS personnel.⁶

Next, we use maps to examine state-level differences in the information shown in Figure 3.11. Figure 3.12 indicates the last AC base of the personnel included in our sample; the relative sizes of the dots indicate the number of personnel leaving the AC from each base. RC units generally are smaller than AC units and are dispersed across the United States in a more-even manner; shading of the states in Figure 3.12 indicates the total number of RC authorizations in each state, with darker states having higher

⁵ See Appendix A for a list of the states in each Census division and region.

⁶ This pattern is likely to be influenced by the soldiers' home of record prior to joining the Army; in our qualitative analyses, many soldiers indicated that they were moving to be near family. The South Atlantic Division supplied about 24 percent of all non-PS accessions in FY 2013; the southern region supplied nearly 44 percent, according to DoD (U.S. Department of Defense, 2014a). Based on this information, we would expect many soldiers to remain in or relocate to southern states after leaving the AC.

Figure 3.12
Soldiers Leaving the AC, RC Authorizations



SOURCE: RAND Arroyo Center analysis based on Army personnel data.
RAND RR1376-3.12

numbers of RC authorizations.⁷ Taken together, this information suggests that large numbers of RC authorizations sometimes are located near large AC bases, but often RC authorizations are not located in the same states as the final AC locations of many PS personnel. Indeed, RC authorizations more generally follow patterns of the U.S. population (i.e., authorizations are highest in the highly populated states of California, Texas, and Pennsylvania, three of the six most highly populated states in the country). Therefore, many personnel who join the RC may change locations after leaving the AC. This is consistent with Figure 3.11.

Next, we use information on personnel who entered the AC after 1999 and who eventually affiliated with the USAR. We focus on USAR affiliates because we have RC location information only for those who join the USAR; note also that we have home-of-record information only for those who affiliate after 1999. The optimal data set would include detailed information about the service members' last AC base, first RC base (if any), and home-of-record state after leaving the AC.⁸ For this group, we know their original home of record, the location of their last AC base, and the location of their first USAR unit. Among this group, we find that about 40 percent serve in the USAR in the same Census division as their original home of record.⁹ Nearly 70 percent of these personnel serve in the USAR in the same Census division as their last AC base. Note that these two categories are *not* mutually exclusive—many personnel grow up, last serve in the AC, and first serve in the USAR in the same Census division. In contrast, about 16 percent of personnel serve in the USAR in a Census division that is not where they grew up *and* is not where they last served in the AC.

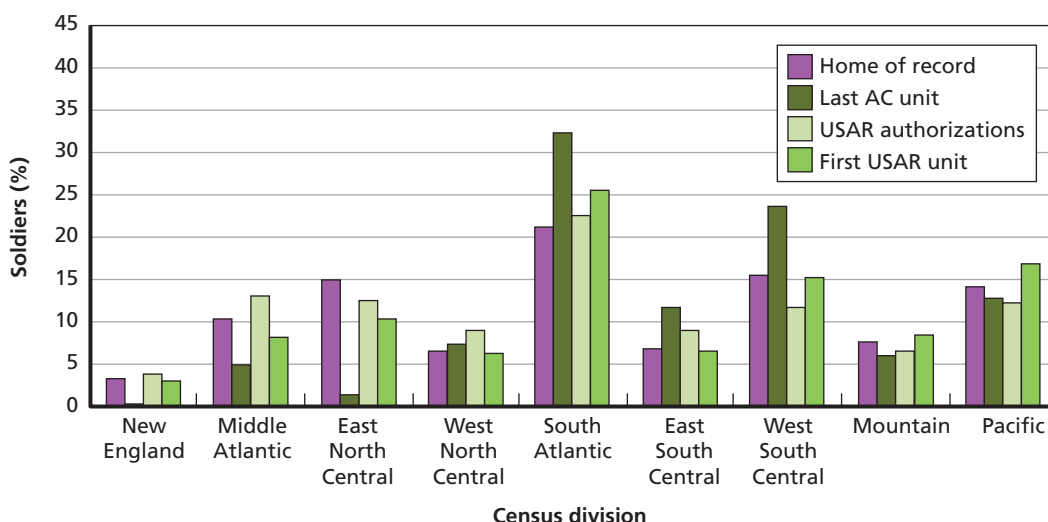
Figure 3.13 shows that, while personnel originally lived in all regions, many soldiers enlist from the Southern Region (as indicated by the purple bars). Also, as indicated above, most personnel leave the RA from the Southern Region (dark-green bars). USAR authorizations are distributed in a manner similar to that of all RC authorizations (hatched bars; also compare with Figure 3.11). Finally, the light-green bars indicate the distribution of PS personnel who join the USAR. These personnel are more likely than other USAR personnel to be located in parts of the Southern Region and the Western Region (the South Atlantic, West South Central, Moun-

⁷ The authorization information used in Figure 3.12 is the same information used in Figure 3.11; authorization data come from a snapshot file from the summer of 2013 and thus do not capture changes in unit sizes or locations over time.

⁸ While the service records of personnel who leave the AC and then join the RC include home-of-record information, our analyses suggested that this information is not updated in a timely manner; therefore it is difficult to determine where former AC service members live even if they join the RC. For the PS USAR personnel in our sample, we used the USAR base zip code to determine location; therefore, location is measured with error, but regions and divisions will be fairly precise in most cases.

⁹ See Appendix A for a list of states in each Census division. While these personnel may or may not return to their hometowns or their home states, they live in the same general region of the country in which they lived prior to RA enlistment.

Figure 3.13
Geographic Region of Regular Army Soldiers Affiliating with the USAR



SOURCE: RAND Arroyo Center analysis based on Army personnel data.

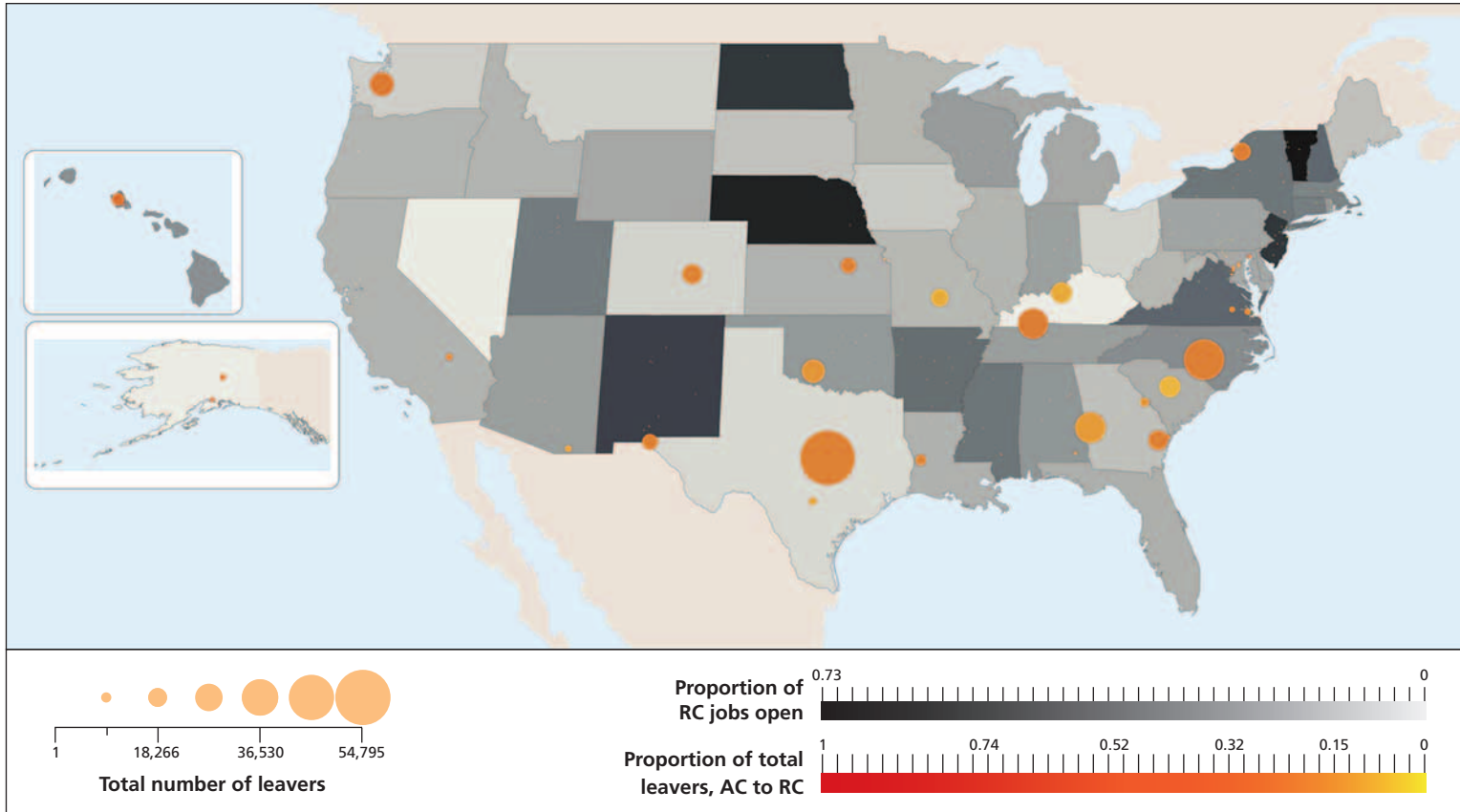
NOTE: Home-of-record information available only for those who enlisted after 1999 (82 percent of the sample). First USAR unit available for those who affiliated directly or through PS-CLG. Those who join the USAR through the IRR are excluded for consistency with our regression results, but their USAR units are distributed very much like those included in this figure.

RAND RR1376-3.13

tain, and Pacific Divisions). PS USAR personnel are less likely than other USAR personnel to be located in the New England, Middle Atlantic, East North Central, West North Central, and East South Central Divisions. This suggests that many PS personnel who join the USAR remain in the Southern Region, or serve in the Western areas of the United States. Of course, PS personnel also serve in other regions; recall in Figure 3.12 that there are relatively few authorizations in the New England and North Central areas of the country. In those areas (and in the Middle Atlantic and East South Central Divisions), PS personnel are underrepresented relative to RC authorizations. This suggests that some RC units that are not near large AC units may attract few PS recruits. Note that the data used in these figures indicate authorizations, not openings; next, we compare authorizations to personnel to calculate the percentage of all RC jobs that are open.

Figure 3.14 indicates the number of personnel leaving the RA, their last AC base, and the affiliation rate by last AC base as well as the percent of RC jobs that are open in the state. As in Figure 3.12, the size of the dots indicates the number of personnel leaving from each base. Here, the shading of the states indicates the proportion of authorized positions that are unfilled. It is interesting to note the differences between Figure 3.12 and Figure 3.14; while Figure 3.12 indicates that the largest *numbers of jobs* (authorizations) are in highly populated states, Figure 3.14 indicates that the states with

Figure 3.14
Affiliation Rates of Soldiers Leaving the AC; RC Job Openings



SOURCE: RAND Arroyo Center analysis based on Army personnel data.

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the largest *proportion of openings* are Vermont, Nebraska, North Dakota, New Mexico, and New Jersey. These are *not* states with large numbers of jobs. This suggests that the jobs in RC units in remote areas or those that are far from AC bases may be most difficult to fill and that PS personnel may be especially unlikely to join these units. While many personnel will move away from their last AC base, both data on where young veterans live and the qualitative information we collected (see Chapter Five) suggest that most AC personnel do *not* make a location decision based on RC job availability.¹⁰

Separating the Factors That Influence Affiliation

Our descriptive statistics suggest that gender, ethnicity, pay grade, years of service, and geography are all correlated with the decision to join the RC. To effectively target recruiting resources, it would be helpful to be able to separate the relationships between personal characteristics (including years of service and pay grade in the RA), geography (specifically, a soldier's final post in the RA and the availability of nearby RC positions), and other time-varying factors (such as the overall number of soldiers leaving the AC, the total RC recruiting mission, and the deployment cycle). In many cases, these factors may covary; for example, age, pay grade, and years of service are correlated. To separate these relationships, we use regression analysis. Specifically, we model the probability that a soldier will join the RC as a function of personal characteristics, the FY in which the soldier separated, and the economic conditions at the last AC post.^{11,12} Among soldiers who ever affiliate, we then model the probability of affiliating with the USAR versus the ARNG; we also experimented with modeling the probability of affiliating within six months versus after six months (i.e., direct versus PS-CLG affiliation).

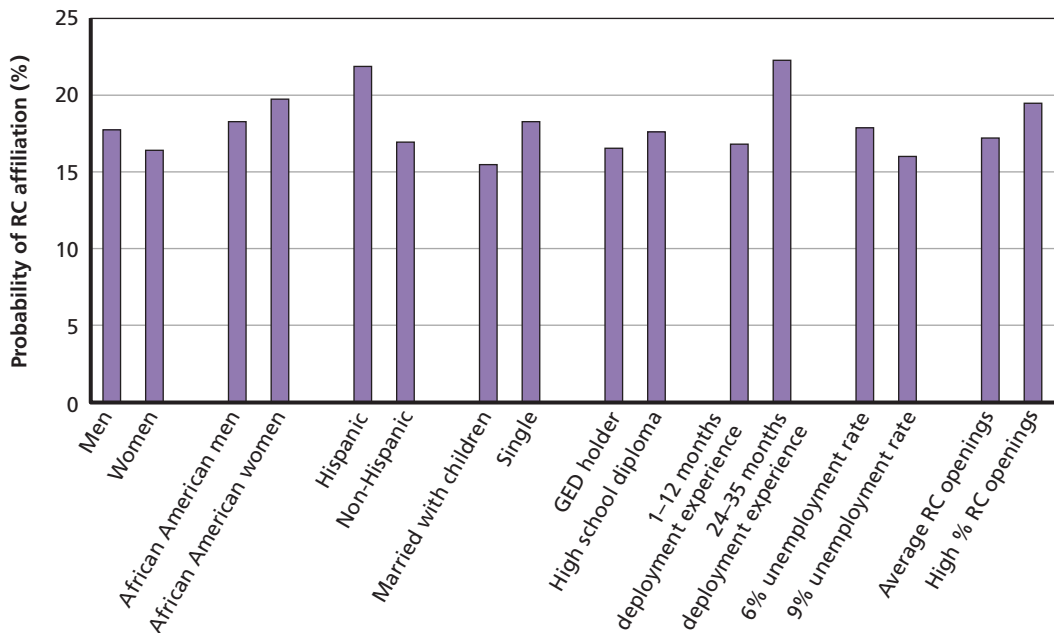
In each regression, we include indicators of gender, ethnicity, marital status/presence of dependents, education level at entry, AFQT score, deployment experience, years of service and pay grade in the RA, FY the soldier left the RA, and the area of the soldier's MOS (CA, combat support [CS], combat service support [CSS]).

¹⁰ We experimented with mapping the movements of personnel who leave the AC and join the RC; our findings were consistent with the implications above. We also experimented with mapping the locations of USAR and ARNG units in a more precise manner; consistent with our analysis above, this mapping indicated that the RC units located near AC bases tend to be fairly large, while those located in remote areas tend to be smaller. Appendix C includes an additional map showing the locations and sizes of RC units by component.

¹¹ In this analysis, we include only those soldiers who affiliate outside of the IRR. However, our results for the key personal characteristics change very little, even when we include IRR soldiers in our analysis as a specification test.

¹² Our model can be characterized as a *hurdle model*—the decision to ever affiliate constitutes the initial hurdle, while the decisions of which component to join and when to affiliate are modeled as occurring subsequent to the initial decision. This model is quite consistent with the qualitative information gathered from soldiers in the midst of the decisionmaking process (see Chapter Five). We discuss hurdle models in more detail in Appendix A.

Figure 3.15
Predicted Probability of Affiliating with the RC, Enlisted Personnel



SOURCE: RAND Arroyo Center analysis based on Army personnel data. Predicted probabilities based on logistic regression results; regression included controls for gender, race/ethnicity, marital/dependent status, education credential, AFQT score, years of service, deployment experience, pay grade, FY the soldier left the RA, unemployment rate at time and location the soldier left the RA, MOS "family" (CA, CS, CSS), Census Division of last AC unit, and RC openings in the state.

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Finally, we include indicators of the Census division of the final AC posting and a measure of the state-level unemployment rate at the last AC location during the month the soldier left the RA. The geographic measures are included to capture information about the likely civilian prospects in the area. As appropriate, we include measures of available RC jobs. These measures will be most relevant for those who remain in the area, but soldiers who plan to leave the area may also believe that local conditions are similar to the conditions in the area where they plan to settle. Indeed, our results are consistent with this idea.

Probability of Affiliation with the RC

We present our results by showing the predicted probabilities associated with key variables; we also discuss the probabilities associated with other variables. All the marginal effects that we present and discuss are statistically significant at the 5-percent level or better, implying the result would occur by chance no more than one time in 20. Figure 3.15 shows how the predicted probability of affiliation differs when we vary a single factor in the model (gender, ethnicity, marital status, deployment experience,

etc.). Across the sample, men are predicted to affiliate at a higher rate than otherwise similar women, but African American women's predicted affiliation rates are higher than those of African American men, members of other races (by inference), and non-Hispanics. Those who identify as Hispanic have a higher predicted probability of affiliation, compared with non-Hispanics. Single service members are predicted to affiliate at a higher rate than those who are married with children.¹³ Having a high school diploma (rather than an alternate credential) at accession is correlated with higher levels of affiliation. Finally, deployment experience is positively correlated with affiliation into the RC; this effect remains even while holding years of service constant.¹⁴

Figure 3.15 also shows the marginal effects of two variables designed to capture information about the civilian labor market and the availability of RC positions in the area of a soldier's last AC base. In contrast to earlier research, we find that affiliation is negatively correlated with the local unemployment rate; enlisted personnel who leave the AC when the local unemployment rate is 9 percent are predicted to affiliate at a lower rate than otherwise similar personnel who leave the AC when the local unemployment rate is 6 percent.¹⁵ While this finding stands in contrast to earlier research, most of the earlier research focused on AC affiliation; also, this finding is quite consistent with the information we gathered during our focus groups (see Chapter Five). Finally, we find that the predicted probability of affiliation is higher in states with more open RC positions.¹⁶

¹³ We tested a number of other variables describing family composition. Across the board, unmarried personnel were more likely than married personnel to affiliate, and those with children were less likely to affiliate. Single parents affiliated at a slightly higher rate than married parents, and single childless women were slightly more likely than single men to affiliate, but the differences generally were small.

¹⁴ Years of service are related to affiliation; we classify years of service as a series of indicator variables (e.g., fewer than or equal to three years of service). We do not present the marginal effects of these variables, but note that they are very consistent with the descriptive statistics; personnel who have completed roughly one term are more likely than others to join the RC. Although we include years of service, pay grade, and deployment experience in our models, we do recognize that the relationship between these variables could be more complicated than our model allows; in particular, we have few individuals in our data set with significant deployment experience and limited years of service. Also, years of service and deployment experience (and perhaps pay grade) could reflect *taste for service* rather than simply Army experiences.

¹⁵ This result is quite robust; we experimented with alternate specifications and found that the effect of the civilian unemployment rate was nearly unchanged when we excluded RC openings and when we added state-level fixed effects. The latter specification suggests that our findings are not driven by unobserved state-level factors. However, when we exclude soldiers who affiliate within six months and model the probability of eventual affiliation, the effect of the state unemployment rate becomes positive. The correct interpretation of this model is not clear. Those who left the Army during the periods of highest unemployment and did not affiliate quickly are, on average, more likely to affiliate when the unemployment rate is lower (after at least six months). However, it could also be the case that soldiers who do not affiliate immediately find the civilian labor market less hospitable than they had hoped, and thus affiliate. When we explored the time to affiliate in a separate model, we found that unemployment did not drive this decision (results excluded for brevity).

¹⁶ We calculated the number of open RC positions based on snapshots of RC personnel and RC jobs from summer 2013. This is the same information that we used in Figure 3.14. In our regression analyses, we formed an

These results suggest that personal characteristics are correlated with affiliation. Overall, women affiliate at a slightly lower rate, but members of several racial/ethnic minority groups affiliate at higher rates. As we might expect and as the literature suggests, marital status is linked to affiliation. Deployment experience is strongly linked to affiliation—those with two to three years of experience are predicted to be about 5-percentage points more likely to affiliate than those with fewer than one year of deployment experience (even holding constant the soldier's MOS). The results also suggest that civilian job-market conditions and RC job openings are correlated with affiliation. While many soldiers who affiliate may move away from their final AC unit before affiliation, most soldiers who affiliate do so within a few months of leaving the AC. Our regression results do not establish causality, but the information in Figure 3.15 suggests that soldiers' final experience in the Army may substantially influence their probability of RC affiliation.¹⁷ For example, soldiers may assume that the economic conditions at their last unit are representative of the entire economy, and/or that the number of RC positions near their last base is representative of the number of positions available in other locations. While we do not have data to determine the distance between the final AC base and the initial RC base for all PS soldiers who affiliate, given the large proportion of soldiers who remain in the same Census division upon affiliating with the USAR, the information gathered at the final AC base may be an accurate measure of conditions at their new location.

Probability of Affiliation with the USAR (Versus ARNG)

Next, we model the probability that a soldier will join the USAR versus the ARNG (here, our sample includes only those who join the RC). About half of our sample affiliates with the USAR.¹⁸ In this model, we include many of the same factors as in the model of RC affiliation, but rather than the total percentage of RC openings, we include the ratio of USAR to ARNG openings in the state.¹⁹ Figure 3.16 presents the marginal effects of this model.

Figure 3.16 indicates that, among former AC soldiers affiliating with the RC, women are predicted to join the USAR at a higher rate than similar men; the same is true of Hispanics (versus non-Hispanics) and to a smaller extent among African Amer-

indicator for those states in which fewer than 16 percent of RC positions were vacant; this included about one-quarter of all states. Soldiers whose last unit was in a state with fewer than 16 percent of positions vacant were about 5 percentage points less likely to affiliate.

¹⁷ To establish causality, we would require an experiment or quasi-experiment in which factors in our model (such as the unemployment rate at the final AC base) changed in a manner unrelated to other variables in the model.

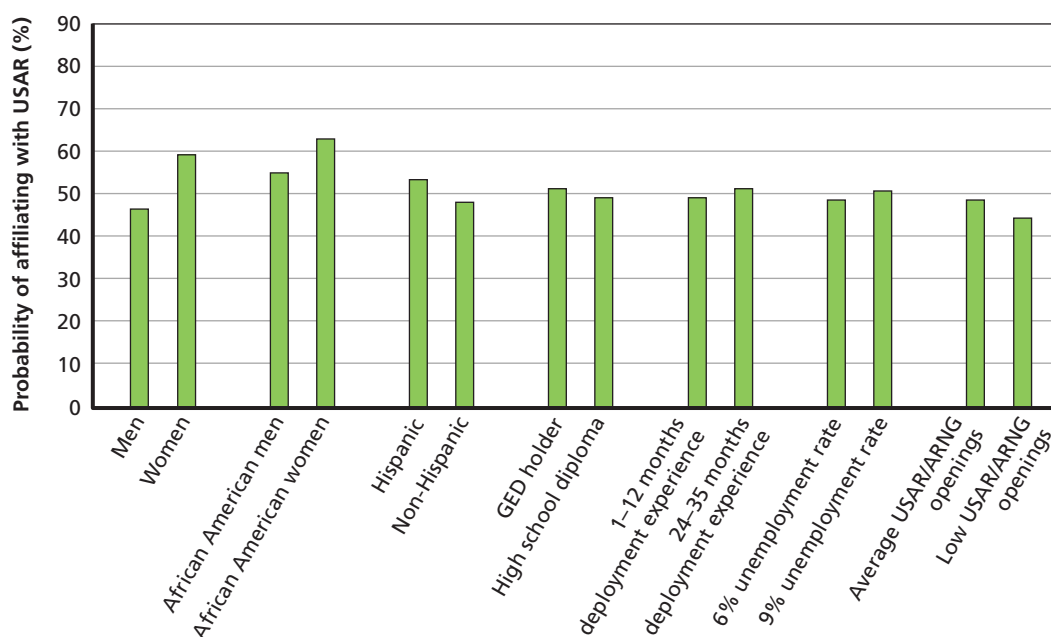
¹⁸ Recall that the majority who join the RC do so by joining the USAR (Figure 3.3), but that the IRR pathway is more common among USAR affiliates than among ARNG affiliates (Figure 3.1). After we exclude those joining through the IRR pathway, the remaining sample is split roughly equally between USAR and ARNG.

¹⁹ Again, we form an indicator variable of the states with relatively low levels of USAR/ARNG openings.

icans (by inference from the overall results by gender). Thus, African Americans, Hispanics, and women are predicted to be *overrepresented* among those joining the USAR and slightly *underrepresented* among those joining the ARNG, and this is consistent with the descriptive statistics presented earlier in the chapter. For example, nearly 20 percent of those leaving the AC are women; in contrast, about 22 percent of those affiliating with the USAR, and about 14 percent of those affiliating with the ARNG, are women (see Figure 3.10).

The predicted differences based on education credential at the time of accession to the AC are small, as are those based on deployment experience. (Recall from Figure 3.15 that deployment experience is positively correlated with the probability of affiliating with the RC; Figure 3.16 suggests that deployment experience is not related to the choice of component.)²⁰ Among those who choose to join the RC, the state

Figure 3.16
Predicted Probability of Affiliating with the USAR (Versus ARNG), Enlisted Personnel



SOURCE: RAND Arroyo Center analysis based on Army personnel data. Predicted probabilities based on logistic regression results; regression included controls for gender, race/ethnicity, marital/dependent status, education credential, AFQT score, years of service, deployment experience, pay grade, FY the soldier left the RA, unemployment rate at time and location the soldier left the RA, MOS “family” (CA, CS, CSS), Census Division of last AC unit, and RC openings in the state.

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²⁰ Our estimates suggest that having at least 36 months of deployment experience is correlated with ARNG affiliation, but the result does not achieve statistical significance.

unemployment rate at the point they left the AC has a small, positive correlation with joining the USAR (versus ARNG). Thus, both deployment experience and the civilian economy are correlated with RC affiliation, but have little correlation with the choice of component. Finally, for soldiers who leave the AC in states with low levels of USAR openings compared with ARNG openings, predicted probability of USAR affiliation is lower than that of ARNG affiliation. Again, our results do not establish causality, but we might expect such a result if soldiers believe the information they gather at their last unit reflects the availability of jobs in the USAR versus the ARNG. And indeed, given the large proportion of PS soldiers whose USAR unit is in the same Census division as their last AC unit, the information gathered before leaving the RA may be accurate in many cases.

Probability of Affiliating with the USAR Within Six Months

Our third model uses the location information of those who join the USAR.²¹ In this case, we modeled the probability that a soldier who affiliates with the USAR will do so within six months of leaving the AC.²² Our results, figure excluded for brevity, suggest that men, as well those who are married with children, are predicted to increase the probability of affiliation within six months by a small amount. (Recall that, overall, men affiliate at a higher rate, while married soldiers with children affiliate at a lower rate.) Those with substantial deployment experience are predicted to affiliate more quickly, while leaving the AC in areas/times with higher unemployment rates as well as joining the USAR in areas with fewer USAR openings, are predicted to decrease the probability of affiliation within six months. However, these differences are very small (on the order of a couple of percentage points), and most other variables in our model had no significant correlation with timing of affiliation. Of course, the majority of soldiers in any of these categories tend to affiliate within six months. Overall, we find no evidence that PS-CLG affiliates provide substantial numbers of soldiers or substantial numbers of *diverse* soldiers (by any definition) relative to all PS affiliations with the USAR.²³

²¹ As discussed above, the RC location information on our original data file, in particular the zip code of the RC unit, was implausible, suggesting that a very large proportion of those who affiliated did so at their final AC location. Therefore, we obtained additional location information, but we were only able to obtain this information for those who affiliated with the USAR.

²² Recall that the majority who affiliate do so within six months; after we exclude those who affiliate through the IRR, about 85 percent affiliate within six months.

²³ We also ran a similar model for soldiers who affiliated with the ARNG (in this case we had no information about the location of the ARNG unit so we could not include information on openings). However, our results were qualitatively similar to those produced for soldiers affiliating with USAR; men and those with no children affiliated more quickly, but most variables in the model did little to explain the timing of affiliation.

Table 3.2
Persistence of Soldiers Who Enter the RC Through Various Pathways

Characteristics	USAR, Direct	USAR, via IRR	USAR, via PS-CLG	ARNG, Direct	ARNG, via IRR	ARNG, via PS-CLG
Average number of months in service, RC	37.8	26.7	32.3	40.2	41.7	40.3
Average months in service, RC by FY 2009	40.8	30.2	38.4	42.8	46.2	47.3
Remain for at least 12 months	88%	75%	77%	85%	86%	82%
Remain for at least 24 months	65%	43%	55%	62%	65%	65%
Troop-years of service	90,441	38,341	18,616	99,202	10,602	22,571
Number of soldiers affiliating	28,719	17,232	6,916	29,642	3,054	6,726

SOURCE: RAND Arroyo Center analysis based on Army personnel data. “Direct” pathway is defined as affiliation within six months of leaving the RA; IRR pathway is defined as affiliating with the IRR after leaving the RA, and affiliating with the RC within eight years of entering the RA. PS-CLG affiliation is defined as affiliation that occurs more than six months after leaving the RA, and more than eight years after entering the RA.

Persistence in the RC as a Measure of Performance

The literature on performance of RC soldiers is sparse and generally does not distinguish between PS and non-PS soldiers. However, research spanning several decades consistently reports substantial levels of turnover among RC personnel (see Buddin and Grissmer, 1994; Orvis, Lim, and Pint, 2008; Marquis and Kirby, 1989).²⁴ Our data include only very limited information on performance or quality, but we do have information on persistence. While persistence is certainly an imperfect measure of quality that lacks nuance, it is often used as a measure of AC-enlisted personnel (see Buddin, 2005). At a minimum, persistence is necessary for promotion and provides a means of calculating the return on recruiting investments.

Therefore, we compare the persistence of PS soldiers who join through different routes remaining in the RC. Across our sample, the average PS soldier who affiliates with the RC serves about 36 months.²⁵ As shown in Table 3.2, differences in persistence are correlated with source of affiliation.

²⁴ Buddin and Grissmer report that only about half of RC personnel stay in the same job and unit for at least 18 months (a significant amount of this switching appears to be due to retraining within the unit); Orvis, Lim, and Pint report loss rates of at least 15 percent per year; and Marquis and Kirby report attrition rates of 40–50 percent within two years.

²⁵ This figure is an underestimate (“right-censored”), as some soldiers are still serving in the RC. Therefore, we present alternate statistics by limiting the sample to those who affiliated by FY 2009 and tabulating the number who served at least 12 or 24 months. Our USAR results are not sensitive to these changes, but when we consider only personnel who affiliated by FY 2009, soldiers who affiliated with ARNG via IRR and PS-CLG actually serve more months than those affiliating directly.

In the USAR, those who affiliate from the IRR serve the fewest months, and those who affiliate via PS-CLG serve fewer months than those who affiliate directly. This pattern also holds when we examine only those who affiliated by FY 2009, and when we examine the proportion of soldiers who remain for at least 12 or 24 months. Therefore, depending on the recruiting resources required, the payoff to recruiting IRR soldiers for the USAR may be smaller than the payoff to recruiting PS soldiers directly from those leaving the AC; the same may be true for PS-CLG soldiers. The results for the ARNG differ; among soldiers who join the ARNG, those who affiliate via the IRR or as PS-CLG serve at least as many months as those who affiliate directly. Among ARNG affiliates from FY 2009 or earlier, those who affiliated via IRR or PS-CLG have served more months than those who affiliated directly.

Table 3.2 also includes a calculation of the number of *troop-years* of service, by pathway to affiliation. We calculate troop-years by multiplying the average number of years of service by the number of soldiers affiliating; in this manner, we can produce a statistic that indicates the total amount of time all soldiers affiliating through a pathway are likely to serve in the RC. This figure is an underestimate, as some soldiers in our data set are still serving in the RC; however, our general results are not sensitive to this.

Affiliation Among Enlisted Personnel

Here, we briefly summarize the empirical results presented in this chapter. Our results indicate that about 20 percent of the enlisted personnel leaving the AC join the RC. The majority who affiliate do so fairly quickly, and the percentage affiliating within six months has increased over the time period included in our data.

Most often, PS personnel left the RA as E-4s; the vast majority left as E-4s or E-5s. Most PS personnel had completed three to six years in the AC. Thus, the AC is a source of experienced personnel, though most PS service members who join the RC served well under ten years in the AC. Overall, our regression results suggest that men, those with significant deployment experience, unmarried soldiers, and soldiers who are racial/ethnic minorities are predicted to join the RC at higher rates than others. However, when we model the choice between the USAR and ARNG, we find somewhat different results—women are predicted to have a slightly higher probability of USAR affiliation than men; the same is true of racial/ethnic minorities when compared with nonminorities. Additionally, deployment experience is correlated with the choice of component, but the predicted probabilities of similar service members with different levels of deployment experience are quite similar. In general, there is little correlation between personal characteristics and the timing of affiliation.

Several indications suggest that geographic factors are correlated with service members' decisions; the distribution of RC authorizations differs from the location of

AC bases, as well as the distribution of young veterans. In particular, the distribution of RC job openings suggests that small units or those located far from large AC bases may be especially difficult to fill, or difficult to fill with PS soldiers. Finally, when the unemployment rate is higher, soldiers leaving the AC are predicted to join the RC at a lower rate (we measure the unemployment rate during the month the soldier leaves the AC, at the location of their last AC base). Also, leaving the AC in a state with high levels of RC openings is correlated with affiliation. In the choice between the USAR and the ARNG, the unemployment rate has only a small correlation with the choice of component, but the ratio of USAR to ARNG positions is correlated with affiliation.

Transitions to the Reserve Component: Officers

In this chapter, we describe our quantitative analysis of officers and their transitions to the RC. This analysis parallels the analysis of enlisted soldiers discussed in Chapter Three.

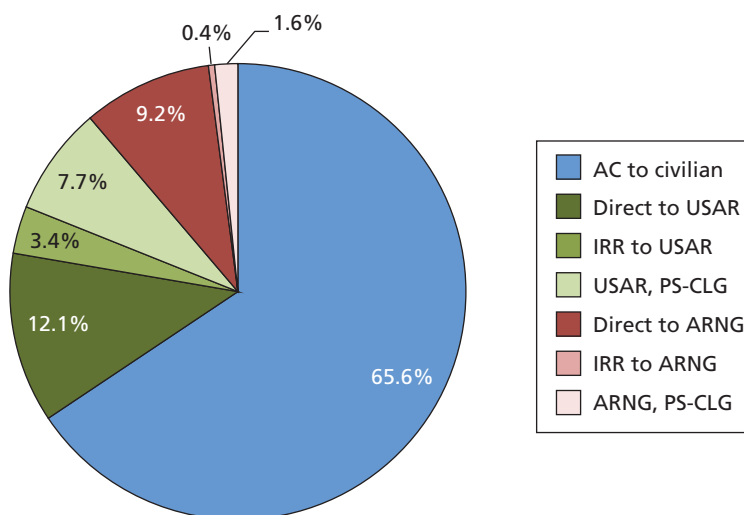
We begin with detailed descriptive statistics of affiliation with the RC, including the personal characteristics of those who affiliate and the timing of affiliation. In the following section, we present regression results from models designed to separate the effects of timing (the year in which the officer left the RA), personal characteristics, and geographic influences on the decision to join the RC. Our quantitative analyses are based on a data set formed from matching personnel who left the RA in the period FYs 2003–2010 with USAR and ARNG databases; in this manner, we identify those officers who join the RC.¹ A key difference between the enlisted data and the officer data is total sample size; during the time period that we examine, about 28,000 officers with fewer than 20 years of service left the RA. In contrast, more than 450,000 enlisted soldiers with fewer than 20 years of service left the Army during FYs 2003–2010; this difference reflects both the larger size of the enlisted force and the higher probability of officers serving at least 20 years in the RA.

Who Affiliates? When Does Affiliation Occur?

As shown Figure 4.1, the majority of officers who leave the RA with fewer than 20 years of service move into the civilian world and do not join the RC. However, officers are substantially more likely than enlisted personnel to join the RC, at about 35 percent of these officers compared with 21 percent of enlisted personnel. As was the case for enlisted personnel, USAR affiliation (23 percent) is more common than ARNG affiliation (11 percent). In general, the pattern of pathways is similar for officers and enlisted personnel. Most officers who join the RC do so soon after leaving the AC (“direct”

¹ We discuss our data set in more detail in Appendix A. As we did for enlisted personnel, we include RC data through the first quarter of FY 2013 to allow time for personnel to join the RC, and we exclude personnel who leave the RA after serving 20 or more years of service from our analyses.

Figure 4.1
Pathways from the Regular Army, Officers



SOURCE: RAND Arroyo Center analysis based on Army personnel data.

RAND RR1376-4.1

affiliation); affiliation through the IRR is uncommon among those joining the USAR and virtually nonexistent among those joining the ARNG. However, PS-CLG affiliation is fairly common among officers who join the USAR; more than one-third of officers affiliating with USAR can be classified as PS-CLG affiliates, while fewer than 15 percent of enlisted personnel who join USAR can be classified as PS-CLG. We explore the time to affiliation in more detail below.

Table 4.1 summarizes a few personal characteristics of officers who join the RC, by their pathway to the RC. Table 4.1 suggests that, in many ways, officers who affiliate via different pathways are quite similar, and are similar to those who do not affiliate. For example, more than three-quarters of officers who join the RC are men, regardless of pathway to affiliation, and racial/ethnic breakdowns are similar as well. Those who affiliate from the IRR are more likely than others who affiliate to be single and less likely to be married with children; however, officers affiliating from the IRR also have fewer years of service, which may explain the difference in family composition.² But officers affiliating directly are more likely to be married with children and less likely to be single than officers affiliating via PS-CLG, despite the similar average years of service. In this case, family composition may be affecting time to affiliation. Officers who do not affiliate are more likely than others to be married with children; those who do not affiliate also have more years of service (but no more deployment experience) than

² Unless otherwise noted, differences discussed in the text are statistically significant that the 5-percent level or better, implying that such differences would occur by chance fewer than one time out of 20.

Table 4.1
Characteristics of Officers, by Pathway to Affiliation

Characteristics	AC to Civilian	Direct (Within Six Months)	From the IRR	PS-CLG
Men	77%	77%	77%	76%
Women	23%	23%	23%	76%
African American	10%	10%	10%	11%
Hispanic	5%	6%	5%	5%
Married with children	39%	31%	22%	28%
Single	37%	43%	52%	48%
Below-zone promotion	0.8%	0.5%	0.1%	0.2%
Average deployment experience (months)	9	12	10	9
Average years of service	7.8	6.2	4.2	6.1

SOURCE: RAND Arroyo Center analysis based on Army personnel data.

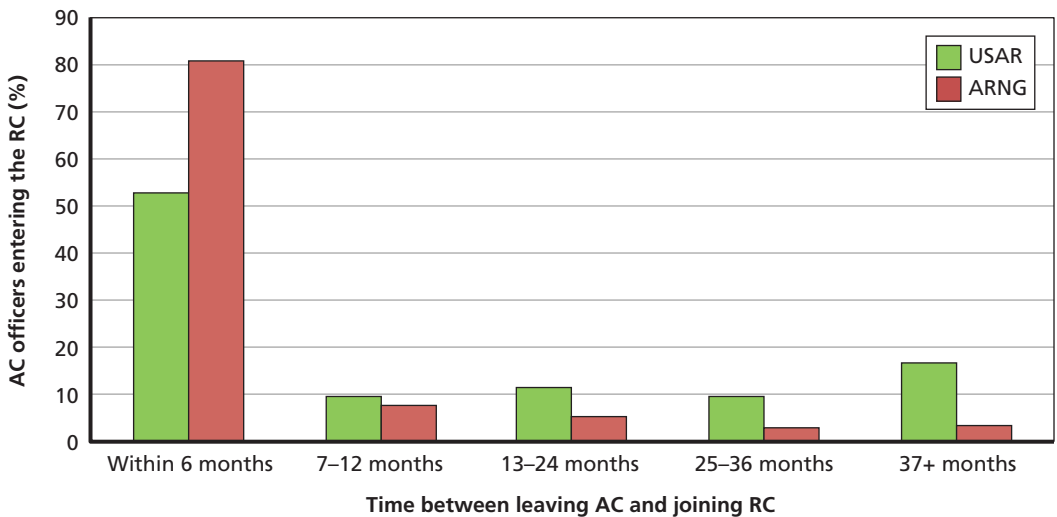
those who join the RC. Below-zone promotions are rare among officers who leave the Army; the difference in below-zone promotions between those who join the RC and those who do not is not statistically significant.³ We explore these various factors in more detail in our regression models later in the chapter.

Figure 4.2 provides more information on time to affiliation and separates those who join the ARNG from those who join the USAR. Consistent with Figure 4.1, Figure 4.2 indicates that about half of all personnel entering the USAR, and about 80 percent entering the ARNG, do so within six months. Also, Figure 4.2 indicates that affiliation rates are somewhat faster among personnel joining the ARNG than among those joining the USAR.

Next, we examine the number of personnel from the AC flowing into the RC by year and component. As shown in Figure 4.3, the flow differed both by year and by component. In particular, large numbers of officers with AC experience entered the RC during the FYs 2007–2010 period, and those personnel were most likely to enter the USAR (in FYs 2007–2010, the ratio of PS officers entering USAR to those entering ARNG was about 2.1; during the earlier years, when the total numbers were smaller, the ratio was roughly 1.7). This pattern is generally similar to what we observed among enlisted personnel with AC experience.

³ TAPDB includes indications of below-zone promotion to O-4, O-5, and O-6. The variable listed in Table 4.1 indicates the officer had at least one below-zone promotion.

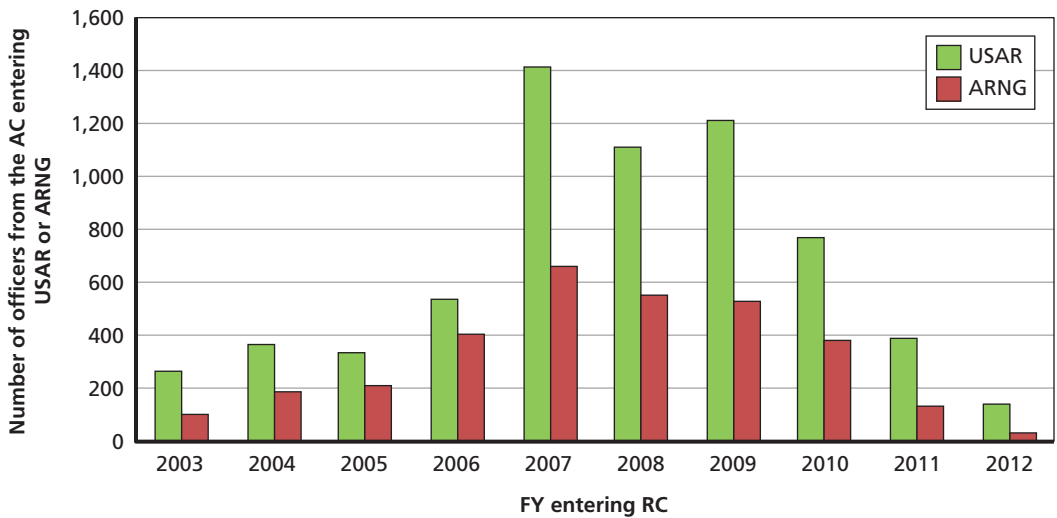
Figure 4.2
Time to Affiliation Among Prior-Service Officers



SOURCE: RAND Arroyo Center analysis based on Army personnel data.

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Figure 4.3
Officers from the AC Entering the RC, by Fiscal Year



SOURCE: RAND Arroyo Center analysis based on Army personnel data.

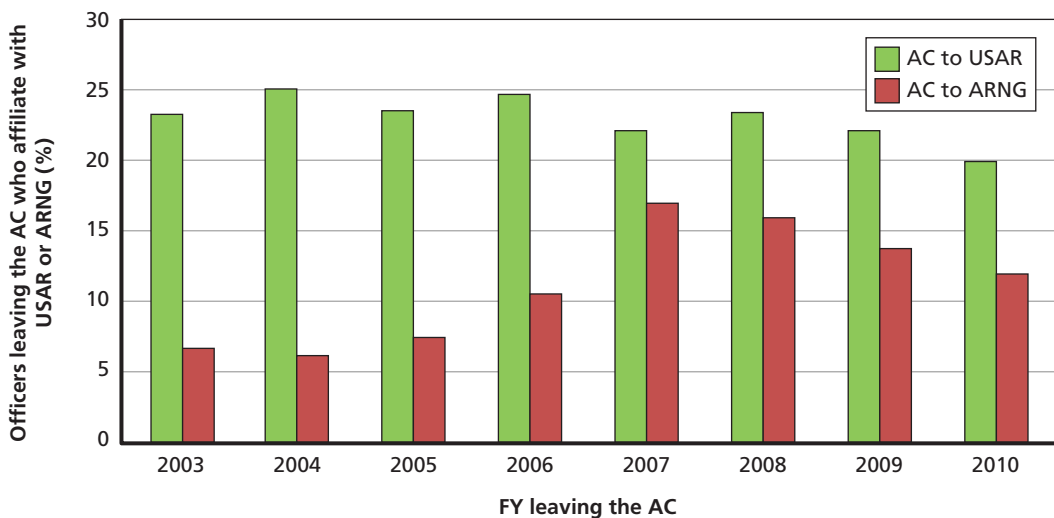
RAND RR1376-4.3

Figure 4.3 indicates that former AC officers were more likely to enter the USAR than the ARNG over the period from which our sample is drawn. This, coupled with the smaller total size of the USAR versus the ARNG, implies that PS officers make up a larger proportion of USAR personnel than of ARNG personnel; this, too, was true of enlisted personnel.

Figure 4.4 demonstrates the *eventual* affiliation rate of officers exiting the AC, by the FY of exit. Figure 4.4 is not directly comparable to Figure 4.3 because Figure 4.3 indicates the total *number* affiliating in each year, while Figure 4.4 tracks the affiliation *rate* over time and the number of officers leaving the RA varied somewhat across the years included in our sample. Also, Figure 4.4 tracks personnel by the year they left the AC, while Figure 4.3 tracks the same personnel, but by the year they entered the RC. However, as was true for the enlisted results, the more-even flows in Figure 4.4 suggest that average time to affiliation could vary across our sample period. We track time to affiliation, by FY, next.

Figure 4.5 includes all officers who join the RC after leaving the RA, breaking down some of the information in Figure 4.2 by FY. Figure 4.5 indicates that the proportion affiliating within six months actually decreased over the period covered by our data. Recall that, among enlisted personnel, we saw the opposite pattern; over time, the proportion affiliating within six months increased. Also, while the majority of officers who left the AC by 2010 were likely to have affiliated by early 2013, affiliation rates for the last couple of years could actually be a bit higher than shown in Figure 4.5 due to late affiliation. Consistent with Figure 4.2, Figure 4.5 shows that

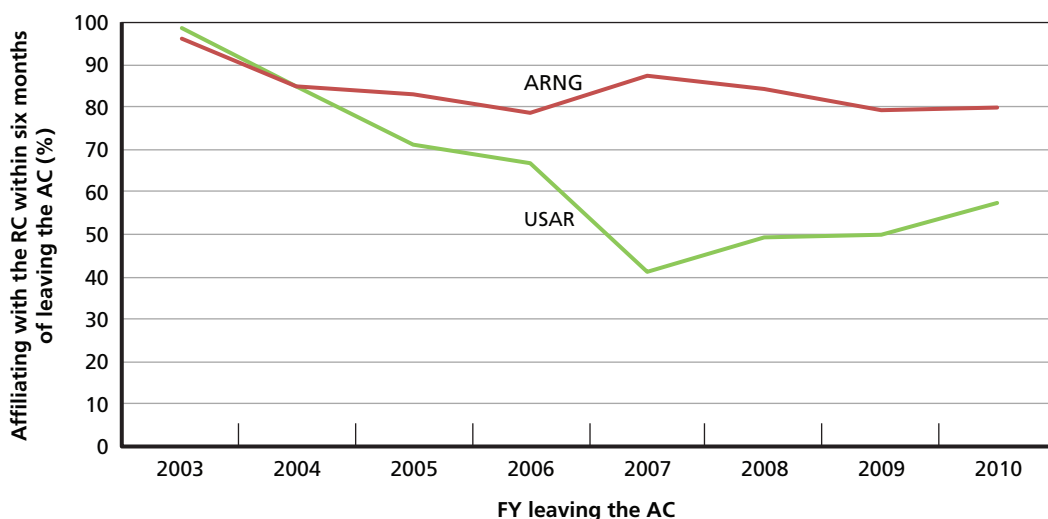
Figure 4.4
RC Affiliation Rates Among Officers Leaving the AC, by Fiscal Year



SOURCE: RAND Arroyo Center analysis based on Army personnel data.

RAND RR1376-4.4

Figure 4.5
Proportion of Officers Affiliating Within Six Months, by Fiscal Year



SOURCE: RAND Arroyo Center analysis based on Army personnel data.

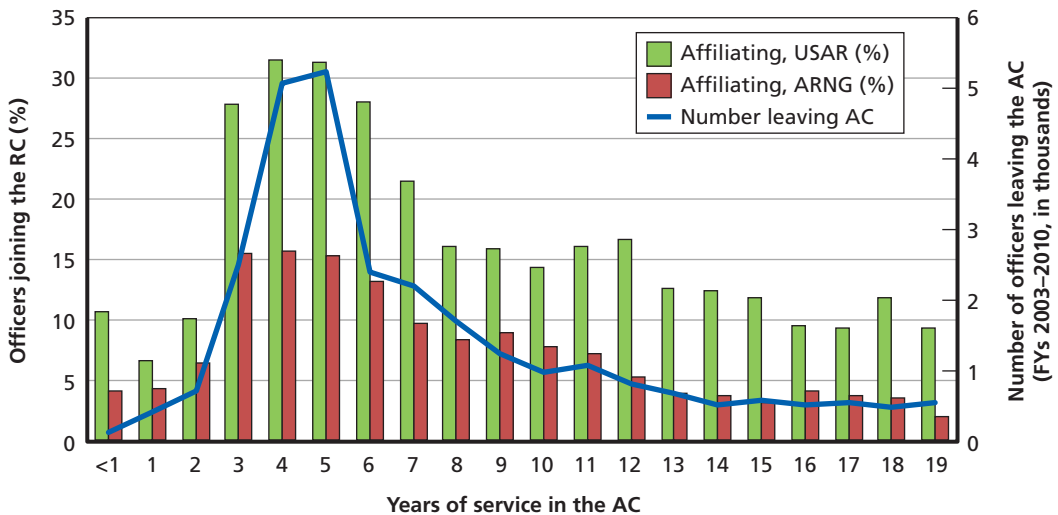
RAND RR1376-4.5

officers who join the ARNG are more likely than those who join the USAR to do so within six months. Especially among those affiliating with USAR, the proportion affiliating within six months seems to have fallen over this time period. This suggests that officer decisions may be influenced by Army-wide policy and/or civilian conditions in a different manner than enlisted decisions, and that component-level differences may explain affiliation rates. Next, we look at affiliation rates by personal characteristics (in particular, years of service, but also pay grade as well as gender, ethnicity, and education).

In Figure 4.6, the green and red bars reflect the affiliation rate of officers by their years of service. Affiliation rates are highest among officers who have completed about one term (three to six years of service).⁴ These officers are more likely to join the USAR than the ARNG. This is quite similar to the pattern among enlisted personnel. The blue line on Figure 4.6 indicates the distribution of officers leaving the RA by years of service. Officers leaving the RA in a given year are most likely to have three to six years of service, with four or five years being the most common. In sum, then, officers who have completed about one term have higher affiliation rates than others, and officers with three to six years of AC service make up the majority of officers who enter the RC after serving in the RA.

⁴ We calculate *completed years of service*, so three years of service indicates a soldier completed at least 36, but fewer than 48, months of service, and so forth.

Figure 4.6
RC Affiliation Rates and Number of Officers Leaving the AC, by Years of Service



SOURCE: RAND Arroyo Center analysis based on Army personnel data.

RAND RR1376-4.6

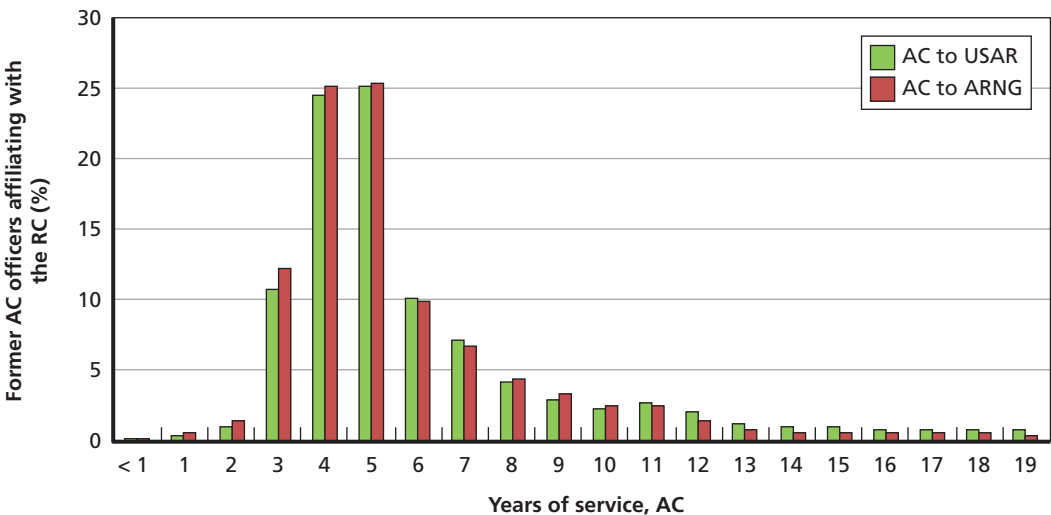
Figure 4.7 shows the distribution of years of service among PS personnel who enter the RC, combining the affiliation rate and the number of officers leaving; both are shown in Figure 4.6. Consistent with the information in Figure 4.6, Figure 4.7 indicates that about half of officers who join the RC acquired four to five years of experience in the AC. Again, the majority who affiliate served for three to six years in the AC. Overall, this pattern is similar to what we observed among enlisted personnel over the same time period.

Next, we carry out a similar analysis on pay-grade structure. Figure 4.8 shows that affiliation rates are highest among officers who achieve the final pay grade of O-2 or O-3 in the RA, and that officers leaving the RA with fewer than 20 years of service are most likely to have achieved the pay grade of O-3.

Figure 4.9 graphs the pay-grade structure of former AC personnel who join the RC (essentially, the combination of the trends shown in Figure 4.8). In the case of officers, the vast majority who joined the RC after serving in the AC held the pay grade of O-3 in the AC. Thus, PS officers who entered the RC most commonly served as O-3s and spent between four to five years in the RA. Therefore, the RA is a source of RC officers with significant levels of experience, but few who affiliate were promoted beyond the rank of captain in the RA.

As was the case for enlisted personnel, officers' years of service and pay grade are closely linked due to promotion policies and time-in-service/grade requirements.

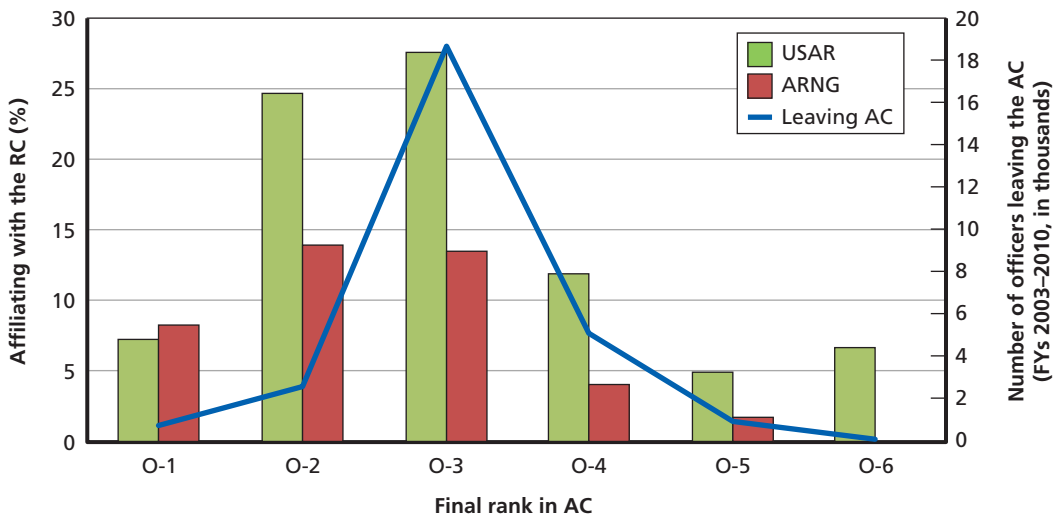
Figure 4.7
Years of Service Among Former AC Soldiers Affiliating with the RC



SOURCE: RAND Arroyo Center analysis based on Army personnel data.

RAND RR1376-4.7

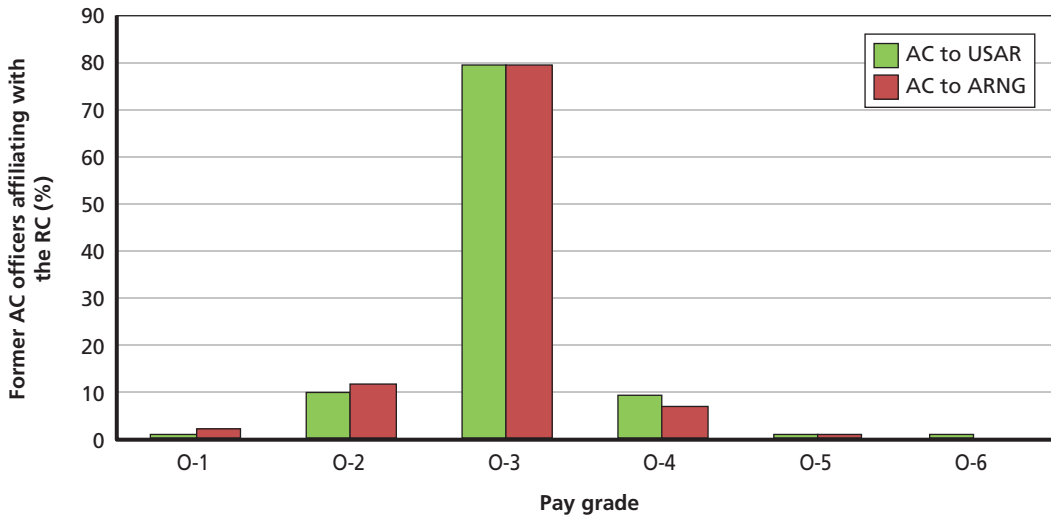
Figure 4.8
RC Affiliation Rates and Number of Officers Leaving the AC, by Pay Grade



SOURCE: RAND Arroyo Center analysis based on Army personnel data.

RAND RR1376-4.8

Figure 4.9
Pay Grade Among Former AC Officers Affiliating with the RC



SOURCE: RAND Arroyo Center analysis based on Army personnel data.

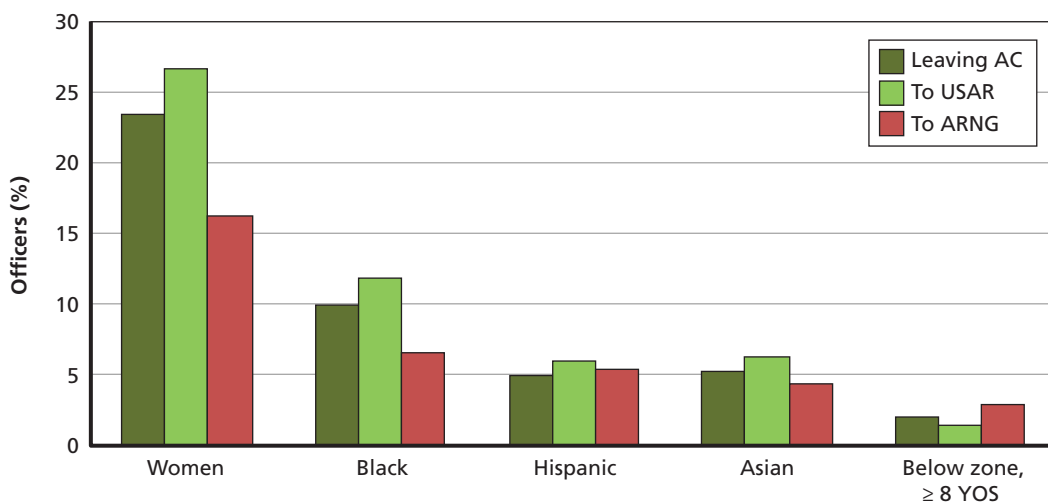
RAND RR1376-4.9

Therefore, in a sense, Figures 4.6–4.9 provide very similar information; all the figures suggest that the typical officer who joins the RC after leaving the AC has served four to five years and has been promoted in a timely manner. However, these figures also show that a small proportion of officers who leave the AC with few years of service and/or at a low pay grade also join the RC. As is the case for enlisted personnel, the performance of those who join the RC after a very short time in the AC might compare unfavorably with the performance of personnel who have more years of service and achieved a higher pay grade.

We also examined the personal characteristics of officers who left the RA and affiliated with the RC. As shown in Figure 4.10, officers who join the RC differ somewhat from the group of all officers leaving the AC. Also, there are differences across the components. Nearly 25 percent of officers leaving the RA are women. Women are somewhat more likely than men to join the USAR, but are substantially less likely than men to join the ARNG. The pattern is somewhat similar among African Americans and is similar (although the differences are much smaller) among Hispanics and Asians. Most of these differences may be related to the fact that CA specialties are heavily concentrated in the ARNG; the general pattern is in many ways similar to what we saw with enlisted personnel.

We have somewhat different information on officers than on enlisted soldiers; in particular, officers are college graduates, so there is no measurable difference in education credentials (in contrast, some enlisted personnel have traditional high school

Figure 4.10
Personal Characteristics of Officers Affiliating with the RC



SOURCE: RAND Arroyo Center analysis based on Army personnel data.

RAND RR1376-4.10

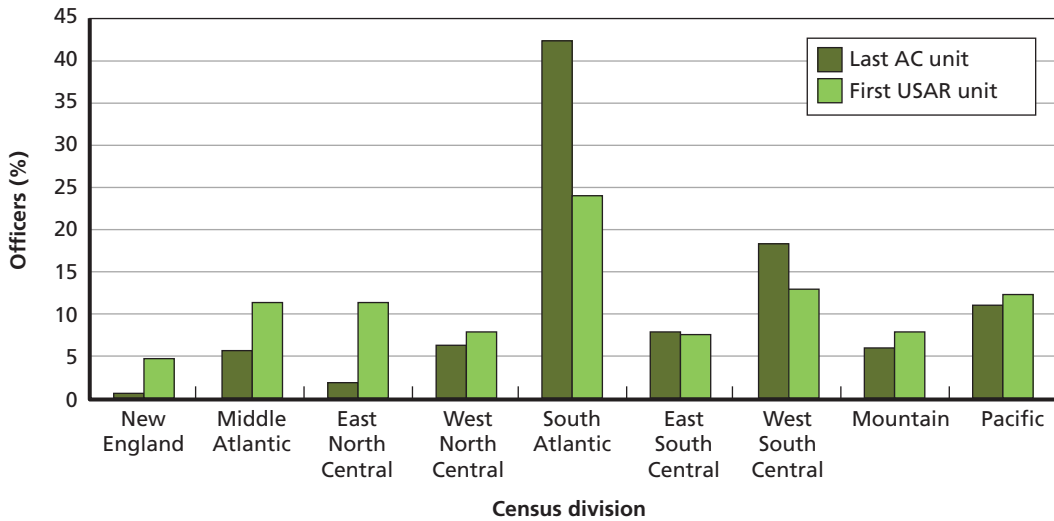
diplomas, while others have alternate credentials and others have some college credit). Also, the TAPDB officer database does not include standardized test scores. The measure that we substitute to reflect capability is below-zone promotion. Below-zone promotions do not happen in the initial years of an officer's career, and they are atypical at any point. For both reasons, fewer than 2 percent of our sample had at least one below-zone promotion. Among officers with below-zone promotions who leave the RA with fewer than 20 years of service, ARNG affiliation is more common than USAR affiliation. The difference in below-zone promotion rates between officers who join the RC and those who do not is not statistically significant; however, among officers who join the RC, those who join the ARNG are more likely to have below-zone promotions, and this difference is significant. This suggests that below-zone promotion is not associated with the decision to join the RC, but may be associated with the decision to join the ARNG versus the USAR. However, the difference is small and also could be driven at least in part by differences in the officers' occupational areas.⁵

Finally, Figure 4.11 indicates the geographic region of last assignment for all officers leaving the RA and of those affiliating with the USAR.⁶ (Geographic region excludes those who were overseas at the end of their careers in the RA.) The distribution

⁵ Areas of Concentration (AOCs) are used to classify officers' jobs. While the TAPDB includes information about each officer's AOC, changes in AOC coding over time for which we do not have a crosswalk mean that some of the information is inconsistent; therefore we do not include AOC in our models.

⁶ In the case of officers, we do not have geographic information on the first assignment of those affiliating with the ARNG; also, we do not have snapshot authorization data on officers in the RC.

Figure 4.11
Geographic Region of Regular Army Officers Affiliating with the RC



SOURCE: RAND Arroyo Center analysis based on Army personnel data.

RAND RR1376-4.11

of officers' last AC unit is similar to that of enlisted personnel (shown in Figure 3.11, previous chapter). However, officers appear to have been even more likely than enlisted personnel to have been posted in the South Atlantic Division immediately before leaving the Army. (Appendix A includes a list of the states in each Census Division.)

We also know the location of the initial unit for those officers who joined the USAR after leaving the RA (also shown in Figure 4.11). This distribution resembles the distribution of enlisted personnel who join the RC after leaving the AC; however, officers are slightly more likely than enlisted personnel to join a USAR unit in the South Atlantic Division. This division includes states with large AC bases, such as Virginia, North Carolina, and Georgia; see Appendix A for a complete list of states by division.

In summary, in many cases, the descriptive statistics presented here are similar to those presented for enlisted personnel in Chapter Three; for example, most officers affiliate within six months of leaving the AC, and officers were especially likely to join the RC (and with the USAR) in FYs 2006–2010. Also, officers who join the RC often have completed about one term of service in the AC. However, in other aspects, officer affiliations differ from enlisted affiliations; for example, the percentage of PS officers who affiliate within six months fell over our sample period, whereas it rose for enlisted PS soldiers, and PS-CLG affiliation with the USAR was more common among PS officers than among PS enlisted personnel.⁷

⁷ Our information on officers is somewhat more limited than our information on enlisted personnel; in particular, we have fewer potential *quality* measures of officers (no test scores or education credentials); also, we do not

Many of the trends and differences discussed in this section are likely related; therefore, we next use regression analysis to separate the factors that influence affiliation.

Separating the Factors That Influence Affiliation

Our descriptive statistics suggest that among officers, both years of service and rank are correlated with the decision to join the RC; gender, ethnicity, and geography may also be correlated with the decision. In contrast with enlisted personnel, officers who join the RC today are less likely than in the past to affiliate within six months of leaving the AC. However, at least half still join within a six-month window. To effectively target recruiting resources, it would be helpful to be able to separate the change in the predicted probability of affiliation associated with personal characteristics (including years of service and pay grade in the RA) versus the change associated with the effects of other demographic characteristics, geography, and other time-varying factors. To do this, we use regression analysis. Specifically, we model the probability that an officer will join the RC as a function of personal characteristics, the FY in which the officer separated, and the economic conditions at the last AC post.^{8,9} Among officers who ever affiliate, we then model the probability of affiliating with the USAR versus the ARNG, as well as the probability of affiliating within six months versus after six months (in other words, direct versus PS-CLG affiliation). Our models determine correlation (positive or negative relationships between variables of interest), but not causality.

In each regression, we include indicators of gender, ethnicity, marital status/presence of dependents, deployment experience, years of service and pay grade in the RA, an indication of below-zone promotion, and the FY the officer left the RA. Finally, we include indicators of the Census division of the final AC posting, and a measure of the state-level unemployment rate at the last AC location during the month the officer left the RA. The geographic measures are included to capture information about the likely civilian prospects in the area. Thus, our regressions include many variables.

In the figures below, we present the predicted probabilities for key results in the cases when factors have a statistically significant relationship with the probability of

have overall authorization data on RC officers.

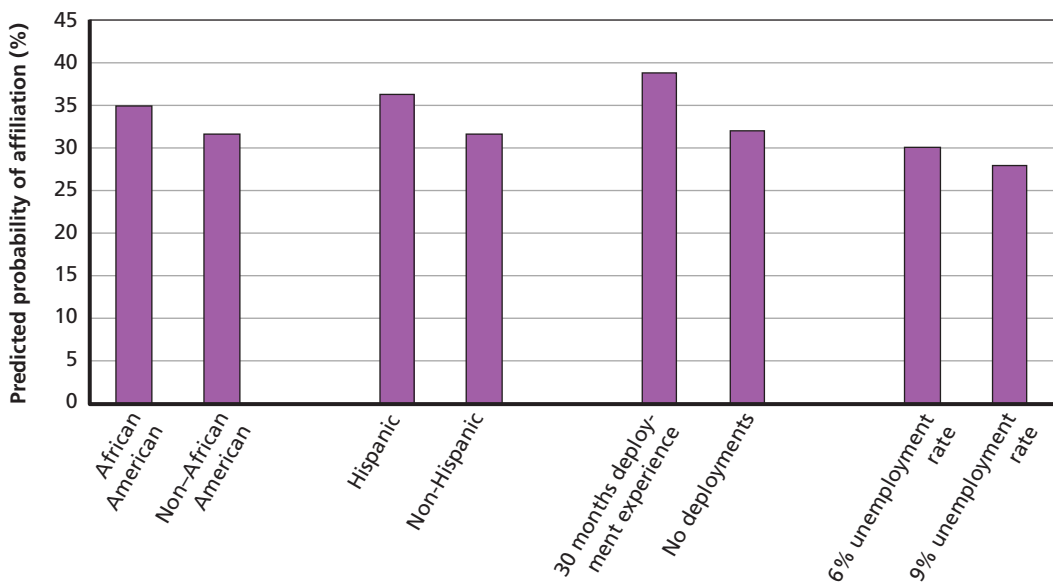
⁸ In our regression analyses, we include only those officers who affiliate outside of the IRR. However, our results for the key personal characteristics change very little, even when we include IRR officers in our analysis as a specification test.

⁹ Our model can be characterized as a *hurdle model*—the decision to ever affiliate constitutes the initial hurdle, while the decisions of which component to join and when to affiliate are made after the initial decision. This model is an exact parallel to our analysis of enlisted personnel (see Chapter Three). We discuss hurdle models in more detail in Appendix A.

affiliation.¹⁰ For example, male and female officers have about the same predicted probability of affiliating with the RC, holding constant other characteristics; therefore, we do not present separate predicted probabilities for men and women in Figure 4.12. In contrast, officers who are members of racial or ethnic minority groups have a higher predicted probability of affiliation than non-Hispanic non-African American officers (see Figure 4.12).

Years of service and pay grade are strongly correlated with affiliation, as is deployment experience (in Figure 4.12, we include indicators of deployment experience; we exclude years of service and pay grade for clarity of presentation, but we note that the results in terms of pay grade and years of service are consistent with the descriptive statistics presented in Figures 4.6–4.9).¹¹ Finally, the figure shows that those who leave the AC in areas with higher levels of civilian unemployment are predicted to join the RC at a lower rate, and the difference is roughly the same size as for enlisted personnel.

Figure 4.12
Predicted Probability of Affiliating with the RC, Officers



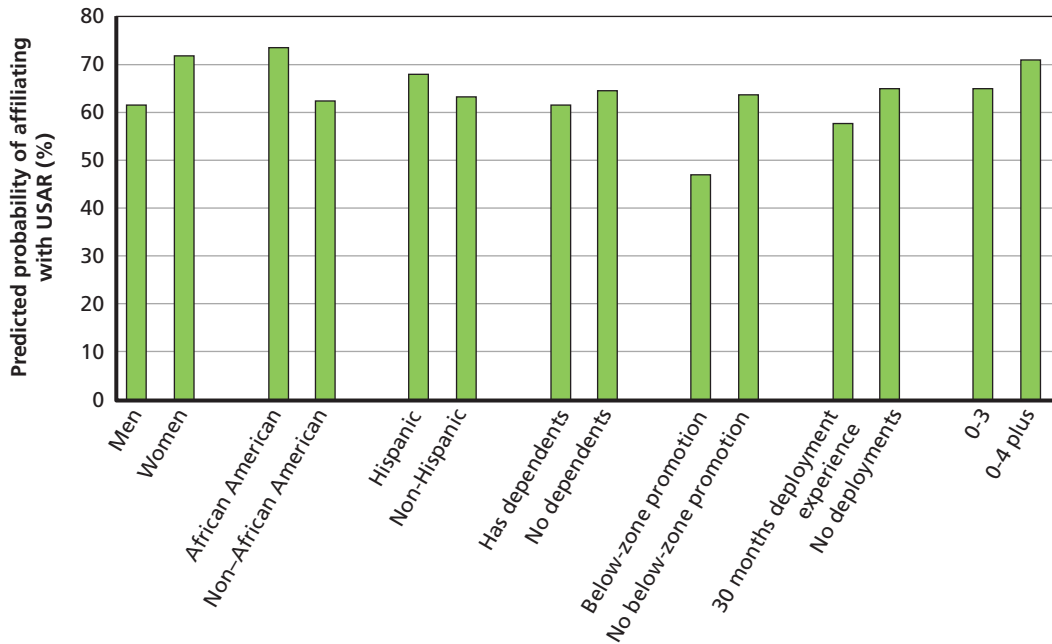
SOURCE: RAND Arroyo Center analysis based on Army personnel data.

RAND RR1376-4.12

¹⁰ We consider relationships to be statistically significant based on a p-value of 5 percent or better, implying the relationship would occur by chance no more than one time in 20. Most of the marginal effects are estimated with much more precision, and are significant at the 1-percent level or better.

¹¹ Although we control for years of service, pay grade, and deployment effects separately, we recognize that our results may not completely separate these factors. In our data, very few experienced individuals have no deploy-

Figure 4.13
Predicted Probability of Affiliating with the USAR (Versus ARNG), Officers



SOURCE: RAND Arroyo Center analysis based on Army personnel data. Predicted probabilities based on logistic regression results; regressions include controls for gender, ethnicity, marital status/presence of dependents, deployment experience, years of service, pay grade, below-zone promotion, Census division of final posting, state-month unemployment rate at time officer left the RA, and an indicator of the FY during which the officer left the RA.

RAND RR1376-4.13

Next, we model the probability of affiliating with the USAR versus the ARNG, among all officers who join the RC. (Recall that officers are more likely to join the USAR than with the ARNG overall.) At this point, we discuss relative differences in the rates of affiliating with the USAR versus the ARNG. For example, being female is correlated with USAR affiliation; while men are predicted to join the RC at higher levels, men are also predicted to join the ARNG at higher rates than are women (see Figure 4.13). Being a member of a racial/ethnic minority is correlated with USAR affiliation, and having substantial deployment experience is correlated with ARNG affiliation. Some of these correlations are likely due at least in part to differences in occupations. Senior officers are predicted to join the USAR at higher rates than O-3s (while not included in the figure, our regression results indicate that the reverse is true for junior officers [O-1 or O-2]). The civilian unemployment rate at the time the officer

ments, while individuals who leave the RA within the first few years of service generally have very limited deployment experience.

exited the AC is not correlated with USAR versus ARNG affiliation and therefore is not shown in the figure. Unfortunately, we lack information on the spaces (authorizations) and faces (assignments) *snapshots* that we had for enlisted personnel; therefore, this model does not include an indicator of the proportion of RC positions in the state that are open.

Finally, as we did with enlisted personnel, we modeled the time to affiliation (for those officers who join the USAR and for those who affiliated with the ARNG). Again, we have no information on personnel versus positions among officers in the USAR; therefore, our officer models do not include indications of available USAR positions.¹² We exclude figures describing these results for brevity, but we note that gender was not associated with time to affiliate for either component; indeed, most factors in our model were not correlated with time to affiliation. One exception is that Hispanic officers who affiliated with the USAR were predicted to join within six months at higher rates than other officers.

Persistence in the RC as a Measure of Performance

Our data include only very limited information on performance. Indeed, for officers, we lack even test scores and differences in education credentials. Here, as we did for enlisted personnel in Chapter Three, we present a brief analysis of persistence in the RC. We recognize that persistence is an incomplete measure of quality, but turnover in the RC is a recognized problem and persistence is necessary for stability, experience, and promotion (see Lippiatt and Polich, 2010; Orvis, Lim, and Pint, 2008; and Buddin and Grissmer, 1994).

We do not have information on the relative costs of recruiting PS officers versus enlisted personnel, or PS officers versus non-PS officers, into the RC. However, as is true for recruiting and training enlisted soldiers, the Army's investment in young officers is significant. In determining the return on investment of recruiting resources, persistence is likely to be one key metric; this calculation would require comparing all costs and benefits of PS officers versus non-PS officers in the RC. While we lack measures of other aspects of quality, we can measure persistence.

We compare the persistence of PS officers who join through different routes in Table 4.2. Across our sample, the average PS officer who affiliates with the RC serves about 41 months.¹³ As seen in the table, differences in persistence are correlated with source of affiliation and with component.

¹² As was the case for enlisted personnel, we also lack accurate location information on PS officers who join ARNG; therefore, we include no indication of positions available in this model.

¹³ This figure (41 months) is an underestimate because some of the officers in our data set were still serving in the RC at the end of 2013, the final date included in our data set. Therefore, we report a variety of statistics, limiting

Table 4.2
Persistence of Officers Who Enter the RC Through Various Pathways

Characteristics	USAR, Direct	USAR, via IRR	USAR, via PS-CLG	ARNG, Direct	ARNG, via IRR	ARNG, via PS-CLG
Average number of months in service, RC	49.5	37.4	23.1	46.6	59.5	40.0
Average number in svc, RC by FY 2009	54.6	38.6	25.6	50.4	60.0	53.1
Remain for at least 12 months	95%	77%	57%	96%	97%	89%
Remain for at least 24 months	83%	57%	35%	75%	87%	70%
Average troop-years	13,534	2,861	4,129	9,231	600	1,340
Number of offices affiliating	3,281	918	2,145	2,375	121	402

SOURCE: RAND Arroyo Center analysis based on Army personnel data. "Direct" pathway is defined as affiliation within six months of leaving the RA; IRR pathway is defined as affiliating with the IRR after leaving the RA, and affiliating with the RC within eight years of entering the RA. PS-CLG affiliation is defined as affiliation that occurs more than six months after leaving the RA and more than eight years after entering the RA.

Table 4.2 demonstrates that officers who join the USAR through the IRR serve fewer months than those who affiliate directly (this is not the case for ARNG; officers affiliating with the ARNG through the IRR serve more months than officers affiliating through other pathways). Officers who affiliate immediately serve more months in the RC than those who affiliate as PS-CLG. This is true for the USAR and is true for the ARNG when we include the most recent data; when we limit our sample to those who affiliated with the RC by FY 2009, this difference is not evident among ARNG officers.¹⁴ Among USAR officers, the difference in service length between those who affiliate immediately and those who affiliate through PS-CLG is stark—those who affiliate immediately serve more than twice as long in the USAR than those who affiliate as PS-CLG, and this remains true when we restrict the data by looking only at those who affiliate in FY 2009 or earlier (in contrast, with this restriction, the difference reverses for the ARNG). Much of the differences among those affiliating with the USAR versus those affiliating with the ARNG is driven by the fact that fewer than 60 percent of officers who join the USAR via PS-CLG serve even 12 months and only about one-third serve at least 24 months. This short length of service contrasts with the lengths of ser-

our sample to include only those who have had time to affiliate, etc., in this section. Our results are not generally sensitive to these factors.

¹⁴ It is possible that affiliation patterns have changed among ARNG officers in recent years, or that *censoring* is driving this result among ARNG officers. The latter is likely if some PS officers serve for very long periods of time in the ARNG.

vice of officers who affiliate through other pathways or who join the ARNG. And, for this reason as well, when we calculate the number of troop-years from officers in each pathway, we find that though one-third of USAR officers affiliate via PS-CLG, these officers' service makes up about 20 percent of the service of PS officers in our data set. Thus, the payoff to USAR from recruiting PS-CLG officers is more limited than that for other PS recruits.

We do not have information on the levels of cost or effort involved in recruiting officers through these different pathways or on the details of PS officers' service. It may be the case that recruiting PS-CLG officers involves few recruiting resources, or that these officers serve in key positions during their time in the USAR. However, our findings suggest that the payoff to recruiting these officers is likely to be smaller than the payoff to recruiting officers as they leave the AC. Recall in Chapter Three that we also found differences in months served among enlisted soldiers who affiliated through different pathways; however, the differences in the enlisted population were smaller than those shown here, and, for the enlisted population, those affiliating with the USAR after spending time in the IRR actually served fewer months on average than those affiliating via other pathways.

Affiliation Among Officers

Here, we briefly summarize the empirical results presented in this chapter. The descriptive statistics presented in the first section provide information on which officers join the RC as well as the pathways that officers use (direct affiliation, affiliation from the IRR, PS-CLG affiliation after spending time in the civilian world). The figures also provide information on the personal characteristics of officers who affiliate, the patterns of affiliation across the years, and some geographic information. The regression results indicate that affiliation is most common among some racial/ethnic minorities, among those with significant deployment experience, and among personnel who left the Army in areas/times of relatively low unemployment. Among those who affiliate, somewhat different variables explain USAR versus ARNG affiliation. Along with some racial/ethnic minorities, women are more likely to join USAR (versus ARNG) than are men; those with no deployment experience and those who achieve a relatively senior pay grade are also more likely to join USAR relative to the ARNG. Among those who join USAR, few of our variables predict the time to affiliation, but an exception is that Hispanic officers who affiliated with the USAR were likely to do so more quickly than other officers. Taken together, these results suggest that officers are sensitive to economic conditions (in particular, the unemployment rate) when making their overall decision to affiliate but not when choosing between components. However, some personal characteristics influence multiple decisions; for example, Hispanics are more likely to join USAR, and if they do join USAR, they tend to do so more quickly.

Finally, pathways to affiliation are associated with the amount of time that officers serve in the RC; those who join USAR after spending time in the civilian world serve far fewer months than officers who take other paths from the RA to the RC.

Qualitative Analyses

In this chapter, we present our qualitative results from focus groups of service members who were preparing to leave the RA, as well as the results of our discussions with recruiters. We begin with the service member focus groups; we divide this discussion into several subject areas: (perceived) pros and cons of RC service, perceptions of RC life, plans to rejoin the AC, perceptions of deployment, and geographic considerations. We discuss results for junior enlisted personnel, senior enlisted personnel, and officers together, but we note areas in which these groups' responses differed systematically.

In the latter portion of this chapter, we discuss our findings from interviews with recruiters. We discuss, in turn, recruiters' perceptions of pros and cons to recruiting PS-CLG recruits, reasons for interest or lack of interest in RC service among potential recruits, and procedural/regulatory concerns. See Appendix B for more details about our selection of sites for the focus groups and interviews and information about our protocols.

Focus Groups with Service Members

In terms of joining the RC, a majority of senior enlisted personnel were interested, while officers and junior enlisted had mixed opinions. Those who indicated interest mainly tempered that interest on their ability to find desirable RC positions in the area they wanted to end up post-AC. Nearly without exception, service members who provided details on their plans to relocate after leaving the AC indicated that they made the relocation decision based on other factors (such as returning or moving to be near family, moving for a specific job, maintaining access to health care, moving to an area in which they wish to live, or remaining in their current area near their last AC base). There was little or no evidence that service members made geographic decisions based on the availability of RC jobs or units. In fact, most respondents agreed that they would consider joining the RC only if units ended up being in the general area to which they had relocated. This is consistent with our quantitative analyses as well.

Soldiers of all ranks remarked that benefits played a large role in their interest in joining the RC. In particular, focus-group members noted that they were inter-

ested in tuition assistance, other educational benefits (GI Bill, other unspecified educational benefits, etc.), health care benefits, and, when available, bonus pay. As one might expect, officers and less-junior enlisted personnel (E-5+) were also incentivized by retirement benefits; this was not the case for the more junior enlisted personnel. Several, but not all, respondents also remarked that the RC offers job security and serves as a source of supplemental income. These features can be important for soldiers who work in part-time jobs or in fields with low job security. However, as discussed below, others saw RC drilling requirements as inflexible and a threat to civilian employment. Responses were mixed on access to desired MOSs in the RC. Only junior enlisted soldiers thought they would have adequate career choice. Many respondents noted that units in their desired geographic area did not have their desired MOS; several officers believed that their desired functional area was not currently available in the RC, or in the component they preferred (for example, most CA MOSs and functional areas generally are available in ARNG units but not in USAR units). Most respondents also reported that RC pay is not competitive compared with the private sector.

Beyond the tangible benefits of joining the RC, respondents were also interested in how RC service affected their day-to-day lives, especially in relation to their civilian jobs. Junior enlisted and officers did not think the RC was compatible with a private-sector job, and some even thought it was incompatible with family life. While we did not specifically collect information on the civilian jobs sought by respondents, it makes sense that RC service could interfere with part-time jobs with variable schedules (typically held by former junior enlisted) *and* with more senior positions, which may require varying workloads and/or travel (typically held by former officers, and perhaps by former senior enlisted personnel). Some soldiers also reported a perception that the RC is unprofessional compared with the AC; a few respondents thought that the RC might not have a valuable mission. However, these sentiments may be related to the dislike some soldiers had for peacetime culture and to experiences with particular reserve units while deployed overseas. They may be less relevant overall as deployments wind down. Regardless, there was a sense that serving in the RC allowed soldiers to fulfill their sense of duty to the Army and to their country.

Much of this is consistent with the basic theory used to explain the decision to join the RC (such as the *moonlight model* discussed in Chapter Two). In particular, soldiers' responses could be interpreted to mean that they thought the value of putting additional time into their civilian jobs, or into their family lives, was higher than what they would gain from joining the RC. But our results are subtly different than those predicted by theory. In the focus groups, soldiers perceived that joining the RC would disadvantage them compared with their civilian peers; in the quantitative results, joining the RC was less likely to occur when the civilian unemployment rate was higher. This suggests that as the civilian economy improves and the labor market tightens, RC recruiting is likely to improve as well because soldiers are likely to worry less about gaining and retaining a civilian job.

Some soldiers who are leaving the AC today intend to rejoin the AC in the future, or at least consider such re-entry an option. The reasons respondents gave for potentially rejoining were varied, but they included a new conflict emerging, a change of heart about civilian life, and the desire to change jobs or become an officer after attending college. Lastly, a number of the officers and junior enlisted personnel with whom we met reported that they had not found reserve recruiters helpful, while senior enlisted personnel did not comment. Such discussions about recruiters mainly centered on the perception that recruiters did not provide adequate help for finding and obtaining RC jobs.

Many service members leaving the AC today reported that they enjoyed deployment. However, the interest in potential future deployment through the RC or rejoining the AC was most prevalent among more junior, enlisted soldiers. Of course, many of these opinions come from an era of high operational tempo; respondents were only able to talk about their past experiences with deployment, and some remarked that deployments had already decreased in the AC. Other respondents noted that the ability to defer deployment for two years made joining the RC more attractive.

Attitudes toward the adequacy of travel reimbursement were mixed. The availability of lodging is unit specific, and reimbursement for transportation costs is allowed only in certain circumstances (see U.S. Department of Defense, 2014b).¹ Nonetheless, the average travel time considered reasonable by respondents was one hour and 40 minutes each way. Many indicated they would be willing to drive three hours to reach their units.

Interviews with Reserve Recruiters

Recruiters noted that PS-CLG applicants differed in many ways from applicants with no PS in the Army. First, recruiters reported that some potential PS recruits were reportedly hard to *sell* on the RC because they had a poor experience with the AC, did not like military life, or wanted a particular job (which might not be available locally or for which they may not be qualified). Among those actually interested in joining the RC, PS-CLG applicants have more expectations about the content, length, and requirements of the application process than non-PS applicants. However, this does not prevent PS-CLG applicants from hiding qualification issues they may have from recruiters (e.g., legal issues, health issues), even though these issues are eventually found in the applicants' records. Recruiters reported that PS-CLG applicants even occasionally shop around to various recruiting stations when they have been denied

¹ According to the Joint Travel Regulations, expenses of up to \$300 per trip are only reimbursed if travel is greater than 150 miles one way and the reservist has a critical skill, is in a critically understaffed unit/pay grade, or is assigned to a unit affected by the Base Realignment and Closure Commission (BRAC) or other force restructuring.

recruitment due to qualification issues. Recruiters reported that many applicants have received a disability rating, and they often do not want to join the RC once they realize that reenlistment will result in a drop in or discontinuation of their disability pay and benefits. Finally, applicant quality can be negative—some separated involuntarily or need to join the RC to gain civilian job skills or a steady job. Recruiters also report that some applicants are unhappy about leaving military life and want to use RC service as a means of getting back in the AC. This final issue was also noted in our focus groups with service members leaving the AC.

When asked what draws applicants to the RC, recruiters report that soldiers are attracted to bonus pay, educational benefits, health care benefits, and retirement. (As noted above, soldiers also report themselves that these are important draws to RC service.) However, recruiters also noted that bonuses have become more limited and that only information on USAR (not ARNG) bonuses was readily available to draw in applicants.² Recruiters agreed that applicants mostly view the RC as a source of supplemental income. Views were mixed on the competitiveness of RC pay and the MOS availability offered to applicants. Recruiters mentioned that applicants complained about having to reattend Basic Combat Training if they were in another branch's AC (with the exception of the U.S. Marine Corps), and that Advanced Individual Training was often unavailable. Recruiters say that the RC is compatible with family life, but opinions about its compatibility with a private-sector job were mixed. Recruiters did, however, think that the RC provided its members with valuable skills for the private sector. Consistent with soldiers' remarks, recruiters noted that many applicants did not view the RC as professional. However, they also reported that reservists enjoyed a sense of service to soldiers and to their country.

Procedural and Regulatory Concerns

First, recruiters reported that they focus on enlistment with the AC over the RC, because the AC is a full-time job. In addition, there was sentiment that there are not enough reserve component career counselors (RCCCs) to keep up with the demand from PS soldiers trying to transition to the RC. On the topic of advertising, several recruiters complained that they only had access to funds to advertise during events, but not for static advertising. They would prefer a budget to continuously advertise to PS using billboards, brochures, etc.

Popular recruiting strategies vary widely—they include passively waiting for walk-ins, but also targeting veteran organizations, colleges, and families of PS. However, the PS contact information in DMDC records is perceived to often be inaccurate;

² Recruiters reported that accessing information about ARNG bonuses was complicated by the fact that the bonuses varied by MOS and also by location, necessitating a separate search for each zip code in which the soldier leaving the AC might end up residing.

we were told that the Recruiter Assistance Program and the Human Resources Command MyRecord website for the IRR have been helpful in generating leads.

Some recruiters even went door-to-door to contact PS personnel if they were in the area. There was a common complaint that the hiring process is slow and cumbersome: positions do not show up in the RC databases, locating records (including DD-214s [discharge forms]) is difficult, the hiring paperwork is cumbersome, and getting around potential applicant qualification issues can be challenging, among other concerns.

Finally, we were told that more recruiters rotate more quickly today than was true previously (which includes periods when civilian recruiting staff provided more continuity), and that this hurts stations' ability to maintain relationships with RC units. In turn, they have a poorer grasp of which positions are open at which unit and are less likely to get PS the RC contracts they want, especially regarding deployment, location, MOS, etc. Finally, recruiters expressed a sentiment that PS personnel are best recruited shortly after they leave the AC. This is consistent with our finding most affiliations occur within six months and that many PS-CLG recruits spend fewer months serving in the RC; recall that the difference is especially striking for officers. However, to contact PS personnel so soon, recruiters need to tap into the IRR, which has its own recruiting process for drilling reserve units.

Conclusions and Recommendations

Most RC recruits do not have prior experience in the RA. However, a substantial minority of those entering the RC served first in the RA. Historically, these PS personnel have provided significant levels of experienced, trained personnel to the RC. Today, the Army is drawing down and the deployment cycle of the past decade is easing; therefore, substantial experience is leaving the RA. In such an atmosphere, continuum-of-service and PS-CLG initiatives take on additional importance in helping the Army to retain experienced soldiers.

Most PS recruits affiliate within six months of leaving the RA, but some personnel affiliate after a substantial break in service, and some affiliate after spending time in the IRR. Therefore, we combine quantitative and qualitative methods to track the pathways of personnel who leave the RA; we categorize PS affiliates to the RC based on the amount of time between leaving the RA and affiliating with the RC, as well as any likely remaining service obligation. Thus, we consider personnel who join the RC within six months of leaving the RA to be *direct* affiliates. In contrast, those who affiliate after spending some time attached to the IRR and within eight years of entering the Army are considered IRR affiliated, while those who join the RC after at least six months in the civilian world and at least eight years after entering the RA are considered PS-CLG affiliates.

We explore how pathway to affiliation, personal characteristics, economic conditions upon leaving the RA, and geography are associated with the decision to join the RC, as well as the decision between the USAR and the ARNG and the timing of affiliation, for those who choose to join the RC. We begin with descriptive statistics, but also use multivariate regression models to separate the correlations of various factors. Finally, we include results from focus groups with enlisted personnel and officers who were in the process of leaving the RA at several different locations, as well as from conversations with recruiters who recruit RC personnel.

In 2003–2010, about 20 percent of PS enlisted personnel and about 35 percent of officers who left the RA prior to retirement affiliated with the RC. Within both groups, the majority of those who affiliated with the RC did so within six months of leaving the RA (*direct* affiliation). Among enlisted personnel, affiliation after time in the civil-

ian world (PS-CLG affiliation) is relatively rare; however, PS-CLG affiliation plays an important role for officers who join the USAR.

Among personnel leaving the AC, the percentage that join the RC at some point in time remained relatively constant over the period covered by our data. However, there were changes in the speed of affiliation: Enlisted personnel were even more likely to affiliate within six months beginning around the middle of our data, while the opposite was true for officers. For both groups, the total number who affiliated with the RC in 2006–2010 was higher than in other years, and particularly so for the USAR. This may be related to the unusually large numbers of service members who left the RA in 2004 and 2005.

Our descriptive statistics indicate that affiliation rates vary based on enlisted soldier and officer characteristics. There are differences in affiliation, including component of affiliation, by gender, race/ethnicity, marital status, and education, as well as by deployment experience and years of service/pay grade. Among officers and enlisted personnel, affiliation rates are highest among those who have spent three to six years in the RA. While affiliation rates also are fairly high among those with 12–18 years of service, few officers or enlisted personnel leave the RA at this point. Therefore, the largest groups of PS personnel enter the RC after having served about one term in the RA. Enlisted personnel most often served as E-4s or (less often) E-5s before leaving the RA; officers most often served as O-3s. Thus, the RA serves as a source of trained RC personnel with several years' experience in the AC. Many of the personnel today affiliating with the RC also accumulated significant deployment experience in the AC. Our qualitative results suggest that the possibility of future deployments is viewed as a negative by some personnel leaving the RA, but as a positive aspect of service by others. We note that our data cover a unique period in the Army's history, especially in terms of deployments and operational tempo. While we believe that many of our results are likely to translate to periods with somewhat different conditions, it seems wise to re-examine the view of deployments among personnel exiting the AC in the future.

Our regression results modeling the decision to (ever) join the RC are generally quite consistent with our descriptive statistics; in particular, deployment experience is positively associated with affiliation for enlisted personnel and officers, as is leaving the RA in an area and time with relatively low civilian unemployment. This result is consistent with our qualitative analyses; service members consistently reported worries that affiliating with the RC would disadvantage them with civilian employers, and it seems reasonable that such worries might be more acute during periods of high unemployment.

The data on enlisted personnel (which include more potential quality measures than officer data) suggest that there is no *negative selection* into the RC; indeed, PS personnel who join the RC are more likely than others exiting the RA to hold a traditional high school diploma (rather than an alternate credential, such as a GED).

Availability of positions/jobs in the RC is also correlated with affiliation. Among enlisted personnel, we find that higher levels of openings among RC positions are associated with a higher probability of affiliation; analogously, higher ratios of USAR to ARNG positions are associated with a higher likelihood of affiliating with the USAR rather than the ARNG (we lack the data to test this hypothesis among officers).

Our quantitative and qualitative analyses indicate that geographic factors are associated with affiliation decisions. While our regression results do not establish causality, one interpretation of our quantitative and qualitative results is that service members often learn about and make a decision about RC affiliation as they are leaving the RA, even if they affiliate at a later time. For example, RC jobs available near the last RA base are correlated with the decision to join the RC, regardless of where service members decide to live. This suggests that service members may learn about the local RC opportunities prior to separating from the AC; they may assume that RC opportunities are similar across locations.

Based on both quantitative and qualitative evidence, it appears that service members leaving the Army generally do *not* consider the location of RC units while making the decision of where to live, and that most who do affiliate often remain in the general area (U.S. Census division) of their last AC posting. PS personnel affiliating with the RC, many of whom are still quite young, may also choose to return to their hometown (home of record prior to enlistment). Service members in our focus groups often reported that, upon leaving the Army, they planned to return to their hometown; our conversations with recruiters yielded information that is consistent with this finding as well. As noted in Chapter Three, many service members lived in the southeastern region of the United States prior to enlistment; thus, after leaving the Army, they may wish to return to their hometowns and stay in the same general region where they last served at the same time. But RA installations are distributed differently than RC units. While there are many RC units in the Census divisions that make up the southeastern United States, most units are in other divisions. These results suggest that PS personnel (and their AC experience) are likely to be concentrated at some RC units, those located near large RA units. RC units in other areas, particularly if they are remote, may struggle to fill jobs with PS personnel; our data also suggest these units may struggle to fill jobs with any personnel. This could have negative consequences on many fronts, such as seniority and readiness.

There are surely exceptions to personnel making up their minds about RC affiliation as they are leaving the RA. But, the effect of the unemployment rate and RC openings at the last RA base (regardless of timing of affiliation) as well as our conversations with soldiers and officers leaving the Army generally accord with this. **Based on all of this information, focusing RC recruitment efforts on soldiers who are leaving the AC is likely to provide the most effective use of recruiting resources. And within the personnel leaving the RA, focusing on those who have served three**

to six years and have obtained the expected pay grade is likely to yield the best return, both in terms of quantity and quality of personnel.

While a full-scale examination of RC unit fill rates and jobs available over time is well beyond the scope of this effort, our results do suggest that experienced PS personnel will be less common at more remote locations and smaller units, and our snapshot data suggest that the RC openings are, to some extent, concentrated in units that are in such relatively remote locations or are not near large AC bases. ARNG units are located in all states and thus would have limits on out-of-state locations, thus there is more potential flexibility with the size and location of USAR units. **It may make sense to reexamine the placement of some RC units, particularly USAR units, if our results in terms of job openings are consistent across years.**

Earlier research has often combined pathways to affiliation. Here, we examine the extent to which service members who choose different pathways to the RC may also differ in other ways; we also model the decision to join USAR versus ARNG separately. Both women and members of some ethnic/racial minorities, whether enlisted or officer, who do join the RC are especially likely to join the USAR; our descriptive statistics and regression results are consistent on this point. Among officers, those with limited deployment experience as well as those who attained a more-senior pay grade are predicted to join the USAR relative to the ARNG. We also find that, among enlisted personnel, being female is associated with PS-CLG affiliation; however, the predicted difference is small, and the majority of men *and* the majority of women affiliate either directly (within six months) or after spending time in the IRR. Thus, PS-CLG seems not to form a unique source of affiliates.

PS-CLG personnel present specific challenges to recruiters (in many cases, these challenges are related to identifying potential PS-CLG recruits). In the cases of enlisted personnel and ARNG officers, PS-CLG recruits make up about 15 to 20 percent of all PS recruits. In contrast, among USAR officers, PS-CLG recruits make up a much larger proportion of PS recruits. But among both enlisted personnel and officers, PS-CLG personnel who affiliated with USAR served fewer months in the RC than personnel who affiliated directly. The differences are quite stark for officers. This pattern is not evident in the ARNG, and it is not clear why PS-CLG personnel serve fewer months in the USAR. However, our results suggest that returns to recruiting USAR personnel via PS-CLG are likely to be lower than the returns to recruiting PS personnel through other pathways (depending on the recruiting resources involved). Determining the returns on investment on various recruiting pathways is well beyond the scope of this research. While having multiple pathways is likely to attract more personnel than limiting options for affiliation, it is unclear whether attracting PS-CLG recruits is preferable to focusing more resources on attracting personnel who are preparing to leave the RA. **Examining the return on investment to recruiting personnel via PS-CLG may help the Army to determine the best use of recruiting resources.**

Again, our results suggest that most personnel make up their minds about RC affiliation at the point of leaving the AC, even if they affiliate later. This, coupled with the finding that USAR PS-CLG personnel tend to serve fewer months in the RC than those joining quickly, suggests that **USAR recruiting might be well served to focus efforts particularly on those leaving the AC and to pursue policies that would create more job openings in the areas in which recent veterans wish to live.** Lastly, it is worth noting that the relationship between the civilian unemployment rate and RC recruiting suggests that recruiting conditions could improve in the near future.

Data Description

In this appendix, we briefly describe the data set used in the quantitative analyses of transitions from the AC to the RC (the quantitative analyses are presented in Chapters Three and Four). First, we note that our data sets on enlisted personnel and officers are constructed in a parallel manner. After describing the formation on our quantitative data sets, we also include some information about Census regions and divisions, as well as some background on hurdle models (the type of models we utilize in our quantitative analyses).

Quantitative Data

To form our data set on enlisted personnel, as well as our officer data set, we first selected from the TAPDB¹ files all personnel who left the RA between FY 2003 and FY 2010. This group includes nearly 520,000 enlisted personnel and nearly 43,000 officers. Next, we exclude those who had more than 19 years of service at the time they left the RA.² We matched the remaining personnel against DMDC Work Experience files through the first quarter of FY 2013 to determine which personnel entered the ARNG or the USAR. Therefore, we have at least nine quarters to observe potential RC affiliation of those who leave the RA.

We determined USAR or ARNG affiliation based on date of affiliation. A few personnel affiliated with both the USAR and ARNG (never simultaneously); we assigned them to the RC component they affiliated with first. We excluded a very small number of observations that lacked a Pay Entry Base Date or pay-grade information (fewer than 0.01 percent of the total sample).

¹ The enlisted file is referred to as the *TAPDB-AE* (Active Enlisted), while the officer file is *TAPDB-AO* (Active Officer).

² In fact, a very small percentage of personnel with 20 or more years of service did affiliate with the RC. However, detailed analysis of this group indicated that these affiliations were concentrated in FY 2006 and FY 2007 and generally showed personnel status of “Inactive—Non-strength Reserve/Guard” for a few months, then resolved to a common loss code.

We coded final RA location based on the last unit's zip code in the TAPDB files. We used this location to determine the appropriate civilian unemployment rate.³ We initially attempted to determine RC location based on zip codes as well. However, we determined that the quality of the (home and unit) zip codes among those who moved from the RA to the RC was very questionable. In particular, in the vast majority of files, zip-code information indicated that the personnel served in exactly the same geographic location (same zip code) before leaving the RA and after joining the RC. While the unit codes indicated that the majority of personnel who transition to the RC remain in the same Census division, they did not indicate that most people remain in the same zip code. We suspect that there are lags in updating the zip-code information on both personnel files and Defense Enrollment Eligibility Reporting System files. Therefore, we instead used information provided by our sponsor to determine the geographic location of those who affiliated with the USAR (similar information was not available on ARNG locations).

For personnel who joined the RA in FY 2000 or later, we have information on the home of record at the time of enlistment (from the RA analyst file). We use this information in our geographic analysis as well.

Finally, we used a data set at a single point in time to determine the distribution of RC-enlisted personnel and authorizations; those data indicate *spaces* (authorizations) and *faces* (actual assignments of personnel) as of June 2013.

³ We used monthly unemployment rate data at the state level from the Bureau of Labor Statistics, based on the Current Population Survey, the source of national unemployment statistics. We initially experimented with alternate unemployment measures, but we found that the month-state measure provided more explanatory power in our models.

Classification of States into Census Divisions and Regions

Table A.1
States in Each Census Division and Region

Census Division	Census Region	States
New England	Northeast	CT, ME, MA, NH, RI, VT
Middle Atlantic	Northeast	NJ, NY, PA
East North Central	Midwest	IN, IL, MI, OH, WI
West North Central	Midwest	IA, KS, MN, MO, NE, ND, SD
South Atlantic	South	DE, DC, FL, GA, MD, NC, SC, VA, WV
East South Central	South	AL, KY, MI, TN
West South Central	South	AR, LA, OK, TX
Mountain	West	AZ, CO, ID, NM, MT, NV, UT, WY
Pacific	West	AK, CA, HI, OR, WA

Hurdle Models

Hurdle models are appropriate when examining a set of separate but related decisions or processes. In this case, we use these models to examine a process characterized by three separate decisions: first, the choice to ever join the RC; second, the choice to join the USAR versus the ARNG; third, the choice to affiliate immediately upon leaving the AC versus after a period of time (more than six months in our models). Hurdle models can allow different factors to affect the different decisions and also can allow common factors to have separate impacts on different decision. For example, in our models, we include an indicator of the number of RC jobs available in the decision to ever join the RC, but we include the ratio of USAR to ARNG positions in the decision to join the USAR (versus the ARNG). Additionally, all of our models include measures of the civilian unemployment rate at the point the enlisted soldier or officer left the AC, but we find that this variable has different effects at different points in the process. See, for example, Silva and Covas (2000) for a discussion of differing processes; see Newman, Henchion, and Matthews (2003) for an application of a double hurdle model to households' expenditures on prepared meals.

Qualitative Research and Instruments

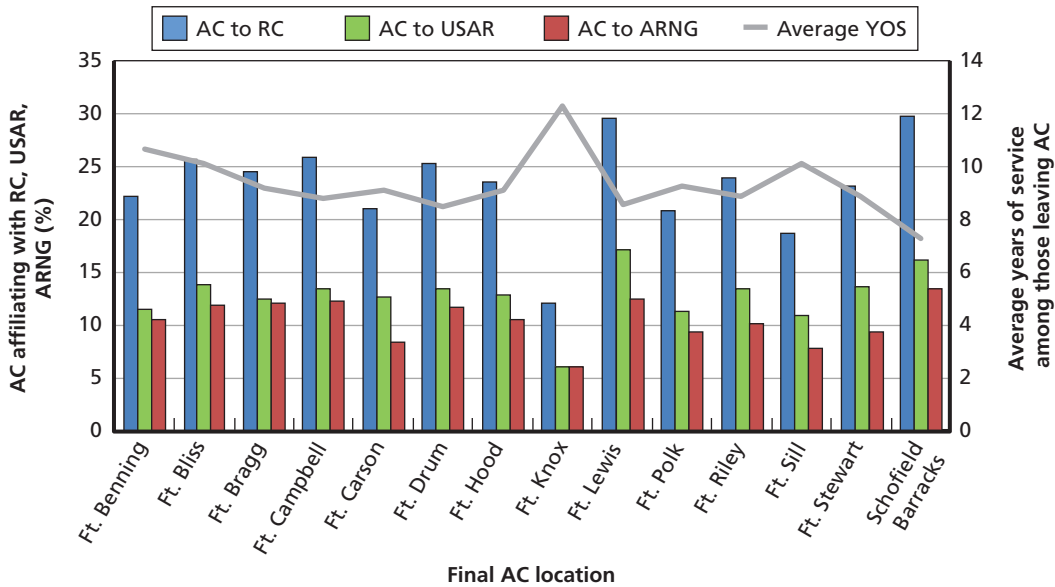
In this appendix, we provide additional information about our focus groups with enlisted soldiers and officers who were in the process of leaving the RA and our interviews with recruiters who interact with PS personnel.

Our qualitative analyses were based on focus groups with limited numbers of enlisted personnel and officers. However, we set up the groups and chose the locations to capture as much variation in service members' experiences as possible. First, we scheduled separate focus groups with junior enlisted personnel (defined here as those in pay grades E-1 through E-4), senior enlisted personnel (defined as those in pay grades E-5 or higher), and officers; this was to both capture differences in experiences and to help ensure that personnel were comfortable discussing their experiences. In particular, we were concerned that junior enlisted personnel might be less than forthcoming if senior enlisted personnel or officers were included in the same focus groups.

We also selected the locations for the focus groups to produce variation in terms of the MOS, service experiences, and surrounding civilian labor market conditions. Our analyses of the quantitative data indicate that both the average years of service and the affiliation rates vary by final AC base (see Figure B.1). For example, a greater number of personnel leaving the Army from Fort Knox are retiring, while personnel leaving the Army from other bases are likely to be at earlier points in their careers (as shown by the gray line in Figure B.1). Overall and component-specific affiliation rates also vary by base, as shown by the bars in Figure B.1.

To capture as much variation as possible, we held focus groups at Fort Hood, Fort Sill, and Joint Base Lewis-McChord (shown as Fort Lewis for brevity in Figure B.1). At each base, we held three separate focus groups; each group included at least seven different soldiers or officers. Each focus group was made up of personnel who were in the process of leaving the Army; by design, some had decided to join the RC, others had decided not to affiliate, and others were still in the process of making a decision about affiliation. Personnel at the sites assisted with coordination and requested that the soldiers or officers report to the focus-group location. At the beginning of the focus groups, we explained the purpose of the study and communicated to the potential participants that their participation was voluntary. The vast majority of personnel at each site elected to take part in the focus groups.

Figure B.1
Affiliation Rates, and Average Years of Service, by Final AC Location



SOURCE: RAND Arroyo Center analysis based on Army personnel data.

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Our protocol included questions designed to elicit information about the factors that each service member considered when deciding whether or not to join the RC. We asked open-ended questions about which factors were perceived as positive or negative in the decision, and also probed about specific factors that we suspected would play a part in the decision (pay, benefits, other intangibles related to service, the possibility of deployment, the possibility of retraining in a different occupational specialty, the travel distance between home and the RC unit). We also asked service members how they determined where to live after leaving the Army. We summarize the results of our focus groups in Chapter Five.

To learn more about the challenges of recruiting PS personnel into the RC, we also spoke with RC recruiters at several different locations. Again, we chose the locations to capture as much variation as possible. In particular, we spoke with recruiters in urban and rural areas, as well as recruiters near large AC bases and far from such bases. In a couple of cases, these recruiters were located on AC bases; in most cases, the recruiters were not located on bases. We focused our discussion on PS-CLG recruits, those who had been out of the Army for more than six months and were not currently in the IRR. Army personnel assisted us by identifying potential recruiters; we contacted the recruiters (either in person or by telephone) and explained the purpose of the study. We also let each recruiter know that their participation was voluntary; some of the recruiters we contacted declined to be interviewed due to time constraints.

Our protocol for these interviews included questions designed to elicit information about the specific advantages and challenges of recruiting PS (versus non-PS) individuals into the RC. As was the case with the service member protocol, our recruiter protocol included a number of open-ended questions as well as probes designed to explore the specific steps of recruiting PS individuals, the recruiters' perceptions of what makes RC service attractive to PS personnel and what makes RC service unattractive, tools that recruiters find helpful or needed, policy changes that recruiters suggested, and any other insights recruiters could offer about the challenges and advantages of recruiting PS personnel into the RC. We present the results of these analyses in Chapter Five.

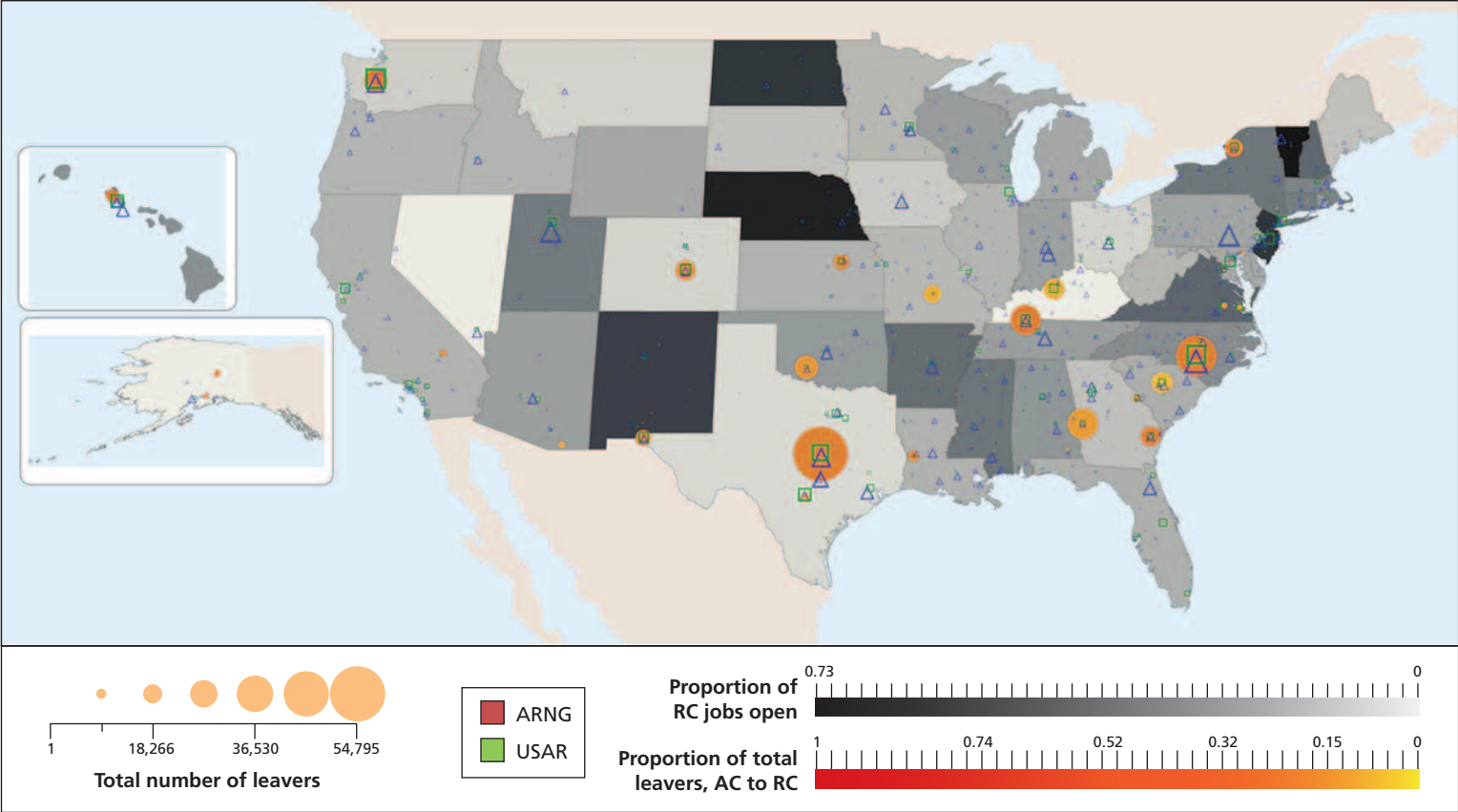
Additional Map

This appendix includes an additional map that expresses the geographic relationships between USAR and ARNG locations and personnel movement as they leave the AC and join the RC.

Figure C.1 represents those leaving the RA (the size of the dots, located at final AC base, indicates the number leaving the RA from each base), the overall “job openings rate” among RC units in each state (the shading of each state), and the locations of RC units. RC units are aggregated to the three-digit zip-code level. Blue triangles represent ARNG units, while green squares represent USAR units. Both are sized in accordance with the size of the units they represent.

Note first that this figure essentially replicates the information in Figure 3.14, but with the addition of the RC unit locations. This figure suggests that the states with more jobs available are generally not near large AC bases, but also that the units in those states tend to be fairly small. This is consistent with the discussion in Chapter Three.

Figure C.1
Soldiers Leaving the AC, RC Job Openings, and RC Unit Locations



SOURCE: RAND Arroyo Center analysis based on Army personnel data.

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Many service members join (affiliate with) the Reserve Component (RC) after leaving the Regular Army (RA). Attracting prior service personnel to the RC allows the Army to retain valuable experience. This report combines quantitative and qualitative methods to understand service member decisions upon exiting the RA: to join the RC or not; to join the U.S. Army Reserve (USAR) versus the Army National Guard; and the timing of their affiliation. Personal characteristics, experiences in the RA, availability of positions in the RC, and economic conditions all are correlated with these decisions. Our results suggest that service members generally choose a geographic location without explicitly considering availability of jobs in the RC. Also, service members who leave the RA when civilian unemployment is high are less likely than others to join the RC. Service members seem to form an impression of overall RC job availability based on the RC jobs available near their last Active Component installation; service members who leave the Army in areas with fewer RC jobs are less likely to join the RC. Finally, those who join the USAR after a break in service spend fewer months serving in the RC than other prior-service recruits. Overall, our findings suggest that focusing recruiting resources on soldiers who are preparing to leave the RA is likely to be cost effective; also, to the extent possible, working to ensure more positions are available in geographic areas that appeal to personnel is likely to pay dividends.



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