



CHAPTER 7

THE EFFECT OF ACTIVATION ON RESERVIST EARNINGS

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Introduction

The Department of Defense (DOD) has relied heavily on the reserve components to fight the global war on terrorism. Numerous reservists have been activated at least once since September 11, 2001, and many of these activations have lasted for more than a year. This more intensive use of the reserves has raised concerns that reservists suffer substantial financial losses as a result of being activated. Analyses of survey data have also suggested that such losses were common.¹

For many, preserving the earnings of volunteer reservists is a simple matter of equity. Reservists who risk significant harm in the service of their country should not also suffer substantial financial losses. In addition, earnings losses among activated reservists could undermine the military's ability to maintain adequate force strength. Actual or expected financial losses might discourage potential recruits from enlisting and current reservists from reenlisting.

To compensate reservists for these findings of earnings losses, legislative proposals at both the state and federal level have sought to increase earnings of activated reservists through higher compensation, tax breaks, and increases in other benefits (such as educational or retirement benefits). Some of these proposals would compensate reservists by replacing earnings lost due to activation. The fiscal year 2006 National Defense Authorization Act, for example, included a provision to replace lost earnings for reservists who experienced long or more frequent activations.²

Concerns about earnings losses for reserve members are based largely on estimates from DOD surveys, as well as anecdotal evidence from the popular press.³ Responses to the May 2004 Status of Forces Survey of Reserve Component Members (SOFRC), for example, suggest that 49 percent of activated reservists experience an earnings loss from activation, 43 percent experience an earnings loss of 10 percent or more,

and 21 percent experience an earnings loss of 20 percent or more.⁴ Analyses of more recent SOFRC data also show earnings losses. Issues that could affect the overall reliability of these survey results are discussed later in this chapter.

To effectively address the concerns surrounding potential earnings losses for reserve members, policy makers need an accurate estimate of the true impact of activation on reservist earnings. Using earnings data from the Social Security Administration and the Defense Manpower Data Center (DMDC), this chapter presents estimates of how activation affects reservist earnings. These estimates are comprehensive and precise, and avoid many of the weaknesses associated with survey data. They include virtually all civilian earnings, all military pays and allowances, and an imputed value of the tax preference accorded to some pays and allowances.

The findings diverge sharply from survey results and reports in the popular press that suggest reservist activation leads to widespread earnings losses. Instead, the data show that, on average, reservist earnings increase as a result of activation, and that those earnings gains grow as the number of days served increases. And while a small portion of activated reservists suffer an earnings loss, nonactivated reservists are more than twice as likely to see their earnings fall.

The remainder of the chapter presents estimates of how activation affects reservist earnings, and how those earnings vary with the number of active duty days served. Since much of the policy debate has focused on those reservists who suffer an earnings loss when activated, the chapter also provides details on the fraction of activated reservists who experience an earnings loss. The final section considers the implications of these findings for DOD compensation policy and future research.

The Effect of Activation on Average Earnings

In order to understand the effect of activation on earnings for reserve members, we estimated the average earnings change for reservists whose number of active duty days increased between 2000 and the year in which they were activated—either 2002 or 2003. In 2000, when a member served 30 or fewer active duty days, mean earnings were \$42,235 (Figure 1). When activated for more than 30 days in 2002 or 2003, earnings for these same reservists averaged \$55,774. Thus, the “gross” effect of activation is an increase in average earnings of \$13,539—or 32 percent—compared to the base year. (Throughout this chapter, all estimates are converted to 2004 dollars, so these effects are not due to inflation.)

The effect of activation on earnings varies with the number of days served (Table 1).⁵ Specifically, the overall gains in reservist earnings grow as the number of days served increases. Reservists activated for 31 to 90 days, for example, experienced an average increase in earnings of \$5,911, while those activated for more than 271 days averaged a \$23,090 earnings increase.

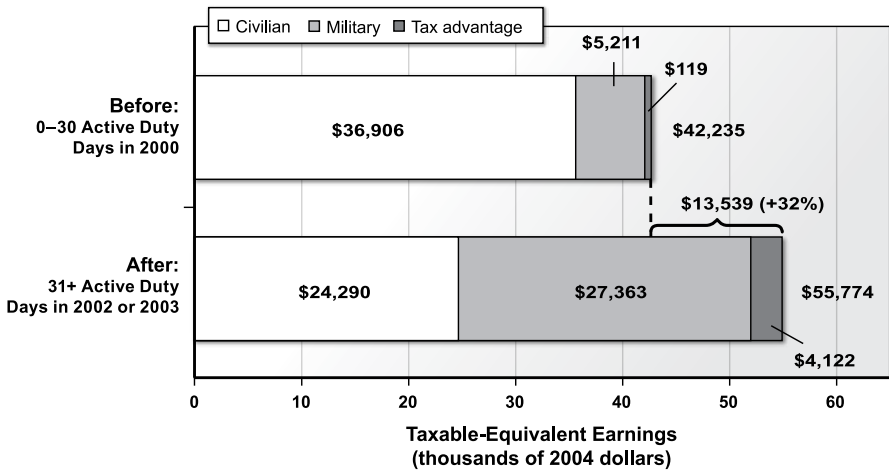


FIGURE 1. AVERAGE CHANGE IN EARNINGS

The increase in reservists' *per-day* earnings, in contrast, does not rise with the number of days served. In fact, with the notable exception of 31 to 90 active duty days, the increase in per-day earnings declines slightly with the number of days served.⁶ This suggests that the larger earnings gains associated with longer activation periods are largely due to the increase in days activated, not to changes in per-day pay.

TABLE 1. GROSS EFFECT AND GROSS EFFECT PER DAY, BY ACTIVE DUTY DAYS SERVED IN 2002 OR 2003

Active Duty Days	Base-Year Earnings	Out-Year Earnings	Gross Effect	Effect per Day
0-30	\$40,255	\$42,530	\$2,275	\$96
31-90	45,728	51,639	5,911	248
91-180	41,046	50,750	9,705	82
181-270	40,823	55,677	14,854	70
271+	40,058	63,148	23,090	74
31+	42,235	55,774	13,539	132

Note: Sample restricted to reservists serving 0-30 active duty days in 2000.

A more detailed examination of the effects of activation on income reveals that while activated reservists experience a decline in civilian earnings and reserve drill pay, those losses are more than offset by active duty military pay (Table 2). In fact, the

increase in basic pay alone outstrips the loss of civilian earnings resulting from activation. In addition to basic pay, activated reservists also receive a basic allowance for housing and subsistence, other special pays and allowances, and the tax advantages associated with military service.

The finding that reservists' military earnings are higher than their civilian earnings is consistent with other analyses of military compensation. The Ninth Quadrennial Review of Military Compensation, for example, found that Regular Military Compensation for active duty soldiers was higher than the median earnings of demographically similar civilians (U.S. Department of Defense 2002). Since then, basic military pay has increased. Furthermore, beyond Regular Military Compensation, activated reservists often receive special pays (e.g., Hostile Fire Pay), allowances (e.g., Family Separation Allowance), and the Combat Zone Tax Exclusion.

TABLE 2. COMPONENTS OF EARNINGS CHANGE

	Gross Earnings		
	2000	2002/2003	Change
Total	\$42,235	\$55,774	\$13,539
Civilian	36,906	24,290	-12,616
Military	5,211	27,363	22,152
Tax Advantage	119	4,122	4,003
Detail Military			
Basic Pay	1,166	17,465	16,299
Drill Pay	3,565	2,662	-903
Basic Allowance for Subsistence	57	573	516
Basic Allowance for Housing	204	5,230	5,026
Family Separation Allowance	0	566	566
Hostile Fire Pay	5	350	346
Bonuses	188	264	76
Other Pays	26	254	228

Note: Sample restricted to reservists serving 0–30 active duty days in 2000 and more than 30 days in 2002 or 2003.

The data presented to this point have been averages from across all ranks and service components, years of activation, and duration of activation. When the data are disaggregated, and the groups are examined individually, the general pattern of large average earnings gains holds for all subgroups (Loughran et al. 2006). There is, however, some variation among the subgroups in the magnitude of the earnings gains. For example, the average earnings increase for activated reservists varies depending on rank and component, with increases ranging from \$9,293 to \$37,721. Average percentage increases in earnings vary as well, ranging from 18 percent to 88 percent. Average dollar increases rise with rank (i.e., senior versus junior; officers versus enlisted), but percentage increases are largest for more junior reserve members. Independent of rank, earnings gains are largest for members of the Marine Corps Reserve and smallest for those in the Air Force Reserve.

Average earnings gains were larger for those activated in 2003 rather than 2002. This was probably due, in part, to the increase in military pay between 2002 and 2003. In addition, in the later year more activated reservists were serving overseas and thus eligible for more special pays—that is, they were activated in support of Operation Enduring Freedom and Operation Iraqi Freedom rather than in support of domestic homeland security (such as airport security duty).

How Activation Affects the Likelihood of Earnings Losses

As the previous section shows, on average, reservists' earnings increase when they are activated. Nonetheless, some reservists might experience significant earnings losses due to activation, and much of the policy debate has focused on these individuals. This section analyzes how activation affects the likelihood of an earnings loss. It also examines how the percentage of reservists with earnings losses varies based on the number of days served.

Our analysis shows that the percentage of reservists experiencing an earnings loss declines as the number of duty days increases (Table 3). Among reservists activated more than 30 days in 2002 or 2003, 17 percent experienced an earnings loss when activated. In some cases, the earnings loss was substantial. For 7 percent of these reservists, the earnings loss was more than \$10,000, and for 11 percent, the loss was more than 10 percent of base-year earnings. Yet the percentage experiencing a substantial loss of income decreases as the number of days served increases. Among those serving the longest on active duty (271 days or more), losses are uncommon (13 percent) and large losses are rare (only 7 percent had losses of more than 10 percent). These findings are as expected given our earlier findings regarding average earnings gains and number of days served; the more days a reservist serves, the higher are average earnings gains and the less likely he or she is to experience earnings losses.

While some reservists do lose earnings when activated, the incidence of earnings loss is much greater among reservists who are not activated (Table 3). Specifically, 40 percent of nonactivated reservists saw diminished earnings between 2000 and 2002 or 2003, compared to only 17 percent of activated reservists. Thus, nonactivated reservists are more likely to see income decline than activated reservists.

TABLE 3. EARNINGS LOSS AMONG RESERVISTS

Active Duty Days	Percent With Earnings Loss		
	Any	>\$10k	>10%
0–30	40%	12%	26%
31–90	24	9	16
91–180	20	7	12
181–270	16	5	9
271+	13	5	7
31+	17	7	11

Note: Data include reservists serving 0–30 active duty days in 2000 and more than 30 active duty days in 2002 and/or 2003.

This finding—that a large fraction of nonactivated reservists experience an earnings loss between any two years—may seem surprising. We generally expect worker earnings to grow over time; and when earnings are tracked over many years, this is true. But between any two years, earnings can be quite variable, sometimes increasing and sometimes decreasing (MaCurdy 1982). For example, an individual may receive substantial overtime pay one year, but little the next. Or a worker might have a relatively high paying job one year, but then lose that job and be unemployed or find a lower paying job the next year. This variation in year-to-year earnings is particularly prevalent among younger workers, who may be transitioning in and out of school or searching for better employment (Neumark 2002). Such young workers also make up a large portion of the reserve force.

Thus, activation actually reduces the probability that a reservist will experience an earnings loss. Consider, for example, junior enlisted members of the Army National Guard who served more than 30 days on active duty in either 2002 or 2003. Among junior guard members who served 30 days or fewer in 2000 and 30 or more days in 2003, 15 percent experienced an earnings loss (Table 4). But junior enlisted members not activated for more than 30 days in 2002 or 2003 were more than twice as likely to make less; 40 percent reported some kind of earnings loss. Assuming

that, absent activation, the activated reservists would have the same earnings loss rate as their nonactivated counterparts, it is reasonable to conclude that activation reduces the likelihood of experiencing an earnings loss by 25 percentage points (15 percent versus 40 percent).

TABLE 4. COMPUTING NET LOSSES FOR JUNIOR ENLISTED MEMBERS OF THE ARMY NATIONAL GUARD

		Active Duty Days				
		2000	2003	Any Loss	>10k	>10%
Treatment		0–30	31+	15%	4%	10%
Control		0–30	0–30	40	13	32
Net		0–30	31+	-25	-9	-22

Note: Sample restricted to junior enlisted members of the Army National Guard.

The impact of activation on junior Army National Guardsmen is consistent with the force-wide impact on all reservists (Table 5). Among nonactivated reservists (serving 30 or fewer active duty days in both 2000 and 2002 or 2003), 40 percent experienced an earnings loss, 14 percent experienced an earnings loss of more than \$10,000, and 28 percent experienced an earnings loss of more than 10 percent. In contrast, only 17 percent of reservists activated for more than 30 days in 2002 or 2003 experienced an earnings loss, 6 percent experienced a loss of more than \$10,000, and 11 percent experienced a loss of more than 10 percent. Thus, the net effect of activation is a large *drop* in the likelihood that a reservist will experience an earnings loss, compared to the probability of experiencing an earnings loss if the reservist remained in the civilian labor market.

TABLE 5. COMPUTING NET LOSSES FOR ALL RESERVISTS

		Active Duty Days				
		2000	2003	Any Loss	>10k	>10%
Treatment		0–30	31+	17%	6%	11%
Control		0–30	0–30	40	14	28
Net		0–30	31+	-23	-8	-17

Note: The net loss is the weighted average of net losses that are computed for rank and component groups.

The likelihood of a reservist experiencing an earnings loss declines as the number of active duty days served increases (Table 6). Again, this finding is consistent with the earlier finding that earnings gains among activated reservists increase the longer they are activated.

TABLE 6. NET LOSS, BY OUT YEAR AND ACTIVE DUTY DAYS

Active Duty Days	Percent With Earnings Loss		
	Any	>\$10k	>10%
31–90	-16%	-5%	-11%
91–180	-20	-7	-15
181–270	-26	-10	-20
271+	-31	-12	-24
31+	-23	-8	-17

Note: Data include reservists serving 0–30 active duty days in 2000 and more than 30 active duty days in 2002 or 2003. The net loss is the weighted average of net losses computed within rank and component group.

This general pattern—a lower probability of earnings loss among activated reservists than nonactivated reservists—holds across almost all subgroups, although there is some variation (Loughran et al. 2006). Across the component-rank subgroups, for example, the probability of any loss among those activated for more than 30 days varies from 8 percent to 21 percent; while the probability of a large loss (more than 10 percent) ranges from 5 percent to 14 percent. While Loughran, Klerman, and Martin (2006) do not identify any reserve groups that are at particular risk of suffering earnings losses, other analyses suggest that a very small number of at-risk occupation groups may exist (Martorell, Klerman, and Loughran 2008). If certain subgroups are in fact more likely to see earnings decline, targeted compensation adjustments may be warranted.

Policy and Research Implications

The findings presented here are inconsistent with both the earnings loss estimates from DOD survey data and the anecdotal evidence in the popular press of substantial and seemingly widespread earnings losses among activated reservists. Instead of losing earnings when activated, most activated reservists' earnings rise. On average, activated reservists experience substantial earnings gains, their gains grow the longer they serve, and their probability of experiencing an earnings loss declines. What are the implications of these findings for reserve compensation policies and the direction of future analyses?

Directions for Future Research

The analyses presented here suggest some important areas for future research.

First, the composition of the activated reserve force may change over time, as will the type and magnitude of reserve compensation. Thus, it will be useful to conduct periodic updates in the future. The results will aid policy makers in identifying the most promising mechanisms to compensate an evolving force.

Second, policy makers have expressed particular concern about the impact of activation on the self-employed and employees of small firms. More disaggregated analyses that calculate the effect of activation on these (and other) subgroups would assist policy makers in helping reservists who may be particularly hard hit by activation. As we have noted, disaggregated analyses find very few subgroups that see declines in average earnings; and the self-employed actually experience larger gains than those working for larger companies.

Third, the results presented here differ markedly from earnings loss estimates in reservist surveys. There are a number of possible reasons for this discrepancy:

- The earnings data presented here include the estimated value of the tax advantage for military earnings, which accounts for close to one-third of the mean gain in earnings experienced by activated reservists. Surveys, in contrast, report pretax earnings information, which ignores the substantial tax advantage associated with military earnings and significantly underestimates the value of those earnings to reservists. By underestimating their military earnings, respondents may ultimately overestimate the size of any earnings loss due to activation.
- Self-reported survey results are subject to error and, perhaps, bias. Earnings are often imprecisely defined. For example, surveys typically do not specify a period of time over which respondents should compute earnings changes. Respondents also may be confused about what to include in reported earnings. The estimates presented here, in contrast, are based on administrative data that measure earnings precisely and comprehensively, without significant bias.
- Low response rates in recent surveys—37 percent of eligible reservists responded to the May 2004 SOFRC (DMDC 2005)—raise the possibility that actual respondents may, in fact, overrepresent those who experience earnings losses. The estimates presented here, in contrast, use administrative data so that nonresponse is trivial and apparently not systematic.
- Survey respondents provide information about their most recent activation, which for some reservists occurred several years ago. The estimates presented here suggest that earnings losses are less common for more recent activations than for those farther back in time.

Thus, large discrepancies between survey results and administrative data can occur. More systematic research is needed to better understand these discrepancies, perhaps by matching an individual's administrative earnings data to his or her survey response. Such follow-on analysis also would be useful for better understanding survey results and for developing future survey instruments.⁷ Martorell, Klerman, and Loughran (2008) report on such analyses.

Fourth, the current study examines how activations impact the earnings of reservists themselves, not the earnings of their entire households. It seems plausible that activation could also alter the employment options and earnings of reservists' spouses and children. For example, activations might disrupt child care arrangements, making it difficult for spouses to continue working at the same level they worked before. Such possible losses are not captured in the current study. Future research could examine how activations impact spousal and total household earnings.

Fifth, as reservists return from prolonged time on active duty, the policy debate will expand to include the effect of activation on reservists' earnings after they go back to civilian life. Federal law guarantees the right of many reservists to return to a comparable position with their civilian employer following a period of active duty service. But this guarantee does not necessarily protect income. Some reservists may have missed out on promotion opportunities or seen their professional networks diminish. The businesses of some self-employed reservists may need to be rebuilt. Further, some reservists will return home with physical and mental injuries that will have a lasting effect on their ability to maintain and develop civilian careers. Follow-on analyses of the data presented here will estimate the effect of activation on reservists' earnings after returning to civilian life.

Finally, reservists returning from active duty will eventually need to decide whether to remain in the reserves. Research and analysis of how earnings losses or gains affect retention will provide additional evidence on the importance of financial considerations on reenlistment decisions. Future research should consider what kind of compensation reforms will be most cost effective in attracting and retaining reservists when the likelihood of activation is substantially higher than it was in the past. (See Klerman 2008 for additional discussion of these issues.)

Policy Implications

The findings presented here on reservist earnings losses also have implications for the direction of compensation policy. As mentioned earlier, numerous proposals have been put forth to reimburse reservists for lost earnings. The 2006 National Defense Authorization Act requires DOD to replace lost earnings of reservists who are activated for more than 18 months or who are activated for shorter periods, but with more frequency. Other proposals pending before Congress would replace lost earnings of reservists who hold civilian jobs in the federal government and provide tax breaks to

private-sector employers who replace lost earnings of reserve employees. Supporters of these proposals contend that such income replacement initiatives are necessary not only for equity reasons, but also to maintain a robust reserve force in the future. If the reserve forces are to continue to meet their enlistment and reenlistment goals, they must offer reservists adequate compensation.⁸

These arguments for increasing reserve compensation assume that reservists typically suffer earnings losses while activated. But the analysis presented here suggests that activation usually leads to substantial earnings gains, not losses. Specifically, the data indicate that only about 17 percent of reservists suffer an earnings loss when activated, and that the percentage earning less actually declines as the number of active duty days increases. Further, earnings losses are more than twice as likely among nonactivated reservists. These findings suggest that earnings losses attributable to activation are much less of a problem than was previously thought. Moreover, since a relatively small percentage of reservists actually experience a decline in earnings, it follows that relatively few reservists will be eligible to receive compensation for lost earnings under current law or under most earnings loss proposals.

In terms of the adequacy of current compensation levels to meet enlistment goals, the findings presented here do not necessarily imply that existing reserve compensation is sufficient to maintain desired reserve force levels. Even though the data suggest that most activated reservists experience substantial earnings gains, those gains may not be sufficient to compensate reservists for the hardships of activation. These include monetary hardships—such as the costs associated with being away from one’s family, loss of spousal earnings, and decline in earnings following deactivation—as well as nonmonetary hardships, including the risk of injury and the emotional costs of family separation.

It is likely that future reserve enlistment and reenlistment decisions will be related to the perception of potential earnings gains or losses.⁹ It may be appropriate for some reservists to leave the service, if they have a high chance of earning significantly less by staying. Perhaps reservists who stand to suffer large losses, such as individuals who are self-employed or who command large civilian salaries, are generally not a good match for today’s more heavily utilized reserve force. However, if some of these individuals are in occupations that are highly valued by the reserves, targeted compensation to retain desired capabilities and readiness may be appropriate.

If future research determines that compensation for activated reservists should be increased (whether due to earnings losses or because existing compensation does not offset the monetary and nonmonetary costs of activation), several policy options should be considered. One approach would be to increase enlistment and reenlistment bonuses. Another would be to increase reservists’ military compensation while they are activated. This strategy would have the advantage of targeting additional compensation to those reservists who are actually activated, at the time of their activation.

An important feature of these targeted pay options is that they would base additional compensation on a reservist's value to the military. This contrasts sharply with earnings replacement plans, which are based on reservists' value to civilian employers (as reflected in their civilian earnings). Thus a policy of targeted pay increases for activated reservists is likely to be more cost effective. First, it will attract those people with the lowest cost to DOD. Second, some people with strong interest in the reserves, but with large losses, might choose to join or remain in the reserves even with a level of compensation well below complete income replacement.

Conclusion

Reports in the popular press and surveys of reservists have suggested that many reservists earn less money when they are activated. These reports have generated many proposals aimed at increasing reservist compensation. The analysis presented here, however, suggests that earnings losses among activated reservists are not widespread, and, in fact, most reservists have higher earnings while activated. Further, while a small portion of reservists see earnings fall due to activation, the percentage is substantially smaller than for nonactivated reservists who make less from one year to another.

These findings have implications for reservist compensation policy, as well as for the direction of future research in this area. Today's reserve forces are being used differently and more frequently than they have been in the past. Reserve structures and policies are being updated to better support the new reserves and to more effectively address the challenges facing reservists in the 21st century. To be successful, such management reforms and policy changes must be based on accurate information and analyses that clearly identify and measure the scope and nature of the issues confronting the reserve force and its members. The information presented here will help policy makers and force managers design reforms that focus on the most pressing compensation priorities and address the most critical reservist needs. It also establishes a strong foundation upon which future research can build.

Appendix. Data Methodology

The estimates of how activation affects earnings in this chapter are derived from a database that includes time on active duty, military earnings, and civilian earnings. In the most general terms, the database was constructed by merging information regarding time on active duty and military allowances from the Defense Manpower Data Center (DMDC), and information on civilian earnings and military pay from the Social Security Administration (SSA). This information was used to calculate the value of the tax preference accorded to some military compensation. The combined DMDC and SSA administrative earnings data were then used to calculate

the earnings change for reservists who served a relatively small number of active duty days (0–30 days) in 2000 and then served a larger number of active duty days (31 or more) in 2002 or 2003.

In this analysis, activated reservists are those reservists who served a relatively small number of active duty days (0–30 days) in 2000 and then a larger number of active duty days (31 or more) in 2002 or 2003. The final database contains earnings for any selected reservist who received reserve pay in 2000 and had any earnings records in the SSA's Master Earnings File (MEF).¹⁰ Earnings are measured on a calendar-year basis and are converted to 2004 dollars using the Consumer Price Index (CPI-U). Earnings are defined as real annual after-tax equivalent cash compensation, and are comprised of the following four components:

- *Civilian Earnings.* Civilian earnings are based on annual earnings from the Social Security Administration's MEF, and include all nonmilitary earnings subject to Medicare taxes. The SSA uses earnings data recorded in the MEF to compute Social Security benefits and to compute Social Security and Medicare taxes.¹¹ Almost all U.S. employment earnings are subject to Medicare taxes.¹² SSA earnings records have been used in many empirical studies, including several studies related to the military, such as Angrist (1990 and 1998) and Angrist and Krueger (1994).
- *Military Pay.* Military pay includes all military pays (e.g., basic pay and hostile fire pay) and bonuses. These pays are reported directly to SSA to determine Social Security benefits and Medicare taxes and are included in the earnings data obtained from the MEF.
- *Military Allowances.* Military allowances include all military allowances (e.g., Basic Allowance for Subsistence, Basic Allowance for Housing, and Family Separation Allowance). Allowance data are from DMDC's Reserve Pay File (for all nonactivated reservists and activated Army and Air Force reservists) and its Active Duty Pay File (for activated Navy and Marine Corps reservists).
- *Tax Advantage.* Military allowances and all military pays received while serving in a combat zone are not subject to federal income taxes. To allow for a consistent comparison of earnings when activated and not activated, the earnings estimates presented here use tax tables to estimate taxable-equivalent earnings. These tax calculations assume that the reservist files as single with no dependents and accounts for all federal income taxes and Social Security taxes.¹³ The calculations do not account for state taxes.

Active duty days are computed by dividing reservists' active duty pay by the daily basic pay amount of the current pay table for the observed rank and years of service. Reservists are grouped by active duty days as follows: 0–30, 31–90, 91–180, 181–270,

and 271 or more. For most reservists, active duty days include active duty training (usually two weeks during the summer). For this calculation, inactive duty training (usually two days per month) is not included in active duty days.

It is important to note some of the limitations of the data. Because this analysis focuses on earnings, it does not account for how activation might affect other deferred and nonmonetary forms of compensation, including the many in-kind benefits available to military personnel. For example, activated reservists and their families are entitled to free health care. This is a potentially major cost savings for reservists, since some have no health insurance when not activated. And even those reservists with health insurance often can lower their out-of-pocket health care expenses (for premiums, copayments, and deductibles) by shifting to the military's more generous health care plan. The value of health benefits is likely to be higher for younger and more junior reservists who are less likely to have employer-provided health insurance and more likely to pay health costs themselves. The value of this health benefit is potentially offset by the need to change health care providers (e.g., if the reservist was previously in a health maintenance organization).¹⁴

In addition, this analysis does not account for any effect activation has on future reserve retirement pay. Reservists receive credit toward their retirement for each day of active duty service; thus, all else being equal, periods of activation will raise the probability of qualifying for retirement benefits as well as the value of those benefits. That said, few reservists serve enough time to qualify for reserve retirement pay, so this omission is unlikely to add significant bias to the analysis. The effect of activation on the value of retirement pay is likely to have greater significance for more senior and experienced reservists.¹⁵

On the cost side, the estimates presented in this chapter do not capture any increased household expenditures resulting from activation (e.g., higher child care costs, a handyman to do household repairs, or storage costs for a car and other belongings). Nor do they account for how activation may affect spousal earnings.¹⁶ Finally, our analysis does not consider the nonmonetary costs of activations (e.g., the cost of serving in a hostile environment or being away from one's family).¹⁷

Notes

1. Throughout this chapter, the term "activated" is used to describe active duty service of more than 30 days, whether for training or on active duty as part of a mobilization or other call to active duty.
2. Those covered under the legislative language include reservists who are activated for a period of more than 18 months, completed 24 months on active duty during the previous 60 months, or are involuntarily mobilized for 180 days or more within six months of returning from a previous period of involuntary mobilization of 180 days or more.

3. For example, see “When Duty Calls, They Suffer,” *USA Today*, April 17, 2003; “Reservists Under Economic Fire,” *USA Today*, April 22, 2003; “Reservists Pay Steep Price for Service,” *USA Today*, June 9, 2003.
4. These figures are estimates developed by the authors. The analysis restricts the SOFRC sample to reservists who are not currently serving in the active guard and reserve and who reported being activated in the past 24 months. This reduces the sample from 20,724 to 11,063 observations. Of these remaining observations, 8,217 contained enough information to compare monthly earnings before and during the respondent’s most recent activation. See DMDC (2005) for more on the May 2004 SOFRC.
5. Note that anyone deployed for more than 30 days in both 2002 and in 2003 contributes two observations to this table.
6. The large values for those activated for 31 to 90 duty days are attributable to the small sample size; thus gross effects are divided by the small numbers (e.g., 1, 2) in that category.
7. Because a 2005 congressional mandate to survey earnings losses employed a survey instrument similar to previous DOD surveys, the results reported in this analysis will likely differ markedly from the 2005 survey results as well.
8. On the other hand, going forward, it can also be argued that individuals who now enlist in the reserves know there is some probability that they might be called to active duty. From an equity perspective, it is unclear whether reservists should be compensated for losses that they knew could occur.
9. See Gotz (2004) for a similar argument. See Klerman (2008) for a formal model that implies this result.
10. Not included in the database are those reservists who served in the regular active duty force in the base year, had a rank above O6, or were in the Coast Guard Reserve.
11. Social Security benefits include Old-Age, Survivors, and Disability Insurance and Supplemental Security Income.
12. See http://www.ssa.gov/OP_Home/cfr20/404/404-000.htm for a list of employment categories that are exempt from Medicare taxes. Unlike Social Security earnings, Medicare earnings are not capped at the Social Security taxable limit.
13. The assumption that reservists file as single with no dependents is clearly not valid. However, the biases created by this assumption likely offset each other to some extent, thereby minimizing the average net impact on our tax estimates. Specifically, assuming reservists are unmarried means that spousal earnings do not affect the reservists’ marginal tax bracket. All else being equal, this assumption lowers the tax estimate. On the other hand, the assumption that reservists have no dependents reduces the number of exemptions the reservist can declare, which increases the tax estimate.
14. See the discussion in U.S. General Accounting Office (2003).

15. Vested reservists receive retirement pay at age 60. Positive and high discount rates (Warner and Pleeter 2001) will greatly diminish the perceived value of retirement pay for younger reservists.
16. For evidence on the effect of deployments on spousal earnings during the first Gulf war, see Angrist and Johnson (2000).
17. For evidence from the first Gulf war, see Kirby and Naftel (1998).

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