
DATA AND MEASURES OF DEPLOYMENT

This section describes our data and the definitions of reenlistment and deployment. The reenlistment indicator is based on stay/leave behavior drawn from the services' personnel records, and the measures of deployment are derived from indicators of the receipt of FSA and HFP. The measures appear to be a reliable basis for analyzing the relationship between reenlistment and long or hostile deployment. Such deployments are typical of peacetime military operations, such as peacemaking and peacekeeping. They also include deployments for war, although there was no war in our data period. As discussed below and documented in Appendix B, the number of deployments measured in the data may undercount the true number of deployments, but the undercount is quite small. Although our empirical analysis focuses on deployments, we also developed measures of total months of deployment. The measure probably undercounts months on the order of one to two weeks per deployment, that is, by a modest amount.

DATA

We use the Proxy PERSTEMPO data file, which was created by the Defense Manpower Data Center (DMDC). Our file contains longitudinal data on active-duty personnel by month from January 1993 through September 1999 and for the last month in each quarter going back to FY1988. For enlisted members, the file has obligated service, education, occupational area, AFQT category, demographics, dependency status, and indicators of deployment based on the receipt of two deployment-related pays: FSA and HFP.

REENLISTMENT DEFINED

For many members, the decision to reenlist or leave occurs on or before the end of their term of service. Some members extend their term of service and push their reenlist/leave decision forward. We handle extenders by following them to the point where they make their reenlist/leave decision.

First-Term Reenlistment

New recruits enter service under a contract that stipulates the length of their term of service, which ranges from two to six years and is most commonly four years. The expiration of term of service (ETS) date for the end of the *first* term of service is given on the personnel data file.¹

First-term members may take one of three actions on or before the ETS date for the end of their term. They may reenlist, extend, or leave. Reenlistment and extension both increase the service obligation, but the data do not indicate whether the increase is an extension or a reenlistment. We use the convention that an increase in ETS date of 24 months or more is a reenlistment, while an increase of 1 to 23 months is an extension. Members who extend usually extend only once and often for less than 12 months. Because our focus is on reenlistment, we track personnel who extend until they reenlist or leave. Normally, members who leave do so at their ETS date, but in some cases the service may permit an early-out.

A member's decision to reenlist, extend, or leave can be affected by military pay, civilian pay, unemployment rate, reenlistment bonus, and special options, such as the choice of location or opportunity to retrain. These factors are not available on the PERSTEMPO file and typically change from year to year. We use fiscal year indicators to control for the combined influence of civilian pay, military pay, and total bonus budgets, which change each year. The indicators offer some control for the unemployment rate, which has within- and between-year change. But the indicators do not control for specialty-

¹To be more specific, the file indicates the number of months left until the ETS date for the first term.

specific variation in bonuses, training availability, or choice of location.

With the above in mind, we constructed an analytical database by identifying when a member faced a reenlistment decision. For first-term members, this was the fiscal year containing the ETS date of their first term, the fiscal year of a reenlistment decision if it was made early, or, if they have extended, the ETS date based on the extension. The data covered ETS dates in FY1996–FY1999. We started at FY1996 because we defined our deployment variables over a three-year window preceding the reenlistment decision and needed monthly data, which went back only to January 1993, to do so. We ended with FY1999 because it was the last year of our data.

For each first-term member with an ETS date in a given fiscal year, we followed the member's record to observe changes in the ETS date. If the date did not change and the member left on or before the ETS date, he or she was recorded as a leaver as of the date of leaving. If the date increased by 24 or more months on or before the ETS date, the member was recorded as a reenlistee as of the date the increase occurred. The additional obligation of service was added to the end of the existing obligation, even if the reenlistment decision was made early. If the ETS date increased by 1 to 23 months, we classified the member as having extended and followed him or her to the decision to reenlist or leave. The months of extension were added to the end of the existing obligation. If the new ETS date fell in a future fiscal year, the member was carried over to that year and processed as above.

Extensions may be made for a number of reasons. For example, a member may extend to obtain training required before being allowed to reenlist in a different specialty. A member may extend for reasons of personal convenience, such as staying in a location until a son or daughter finishes the school year or until the member's spouse finishes a project at work. A member may extend to have enough time remaining in service for eligibility to deploy for a particular posting or mission. Because an extension might be made in conjunction with a deployment, a member might have some influence over his or her deployment experience. We did not have data on how often this occurred, but we believe it is infrequent.

Second-Term Reenlistment

Having identified the first-term reenlistment decision date, we could identify a new ETS date *given first-term reenlistment*. As in the first term, we used the date to place a member in a fiscal year, then followed the member to detect departure, reenlistment, or extension, and if the latter, when reenlistment or departure eventually occurred.

DEPLOYMENT MEASURES

Deployment Measures Defined

We constructed two measures from the PERSTEMPO file: deployments and months of deployment. Both measures involve counts over a three-year window ending three months before the month of the reenlist or leave decision. The three-month “buffer” was intended to control for possible reverse causality. If a member was near the end of the term, learned that the unit would be deployed, and wanted to go on the deployment, then that specific deployment could influence the member’s decision to reenlist. But that deployment, falling in the three-month window, was not included in our count.

To implement a count over a three-year window, we needed members who had at least three and a half years of service at the time of their reenlistment decision. Members with two- and three-year terms were therefore excluded from our analysis sample unless they had extended the length of their term. Two-year terms were offered in the Army’s 2+2+4 option, which required two years of active duty, two years of selected reserve duty, and four years of Individual Ready Reserve to complete the eight-year service obligation. The Army, Navy, and Marine Corps offered three-year terms. Four-year terms are relatively more common, and bonuses induce some members to select longer terms over three-year terms. Because bonuses influence the choice of term length, a longer term does not necessarily reflect a higher taste for military service.

We built similar measures of deployment for promotion. We specified a three-year window prior to a member’s E-5 promotion date or

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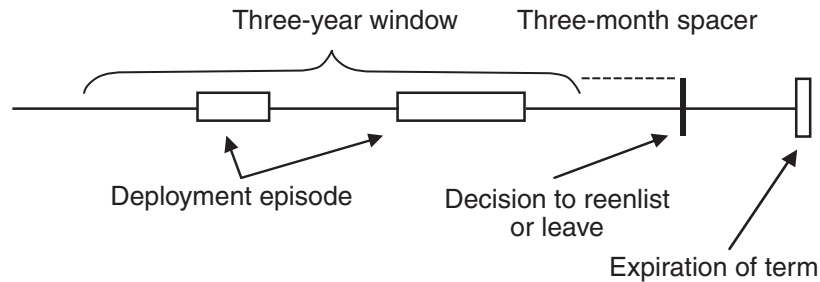


Figure 3.1—Counting Deployments

censoring date, which was the end of the first term if the member did not reach E-5 and separated, or was the end of our data window (September 1999). Figure 3.1 illustrates the window for counting episodes and months of deployment.

We derived deployment measures from the receipt of FSA or HFP, or both. FSA is payable to members with dependents who are away on duty for a period of at least 30 consecutive days. (Dependents include spouses and children.) A small percentage of members with dependents do not have a spouse. HFP is payable to members on duty in areas or circumstances deemed hostile. (Appendix A describes the pays more fully.) HFP is payable regardless of whether a member has dependents.

For members with dependents, a deployment consists of a string of months in which FSA or HFP, or both, are received. The three-year window includes complete deployments as well as those that ended or began in the window.

FSA is not payable to members without dependents and so cannot be used to infer their nonhostile deployments. When a member has no dependents, we impute nonhostile deployment from a DMDC-constructed indicator of unit deployment. A deployment consists of a string of months in which a unit-deployment indicator is imputed, HFP is received, or both. The unit deployment indicator represents the condition where a unit consists of at least 10 members, at least 30

percent of the members have dependents, and at least 60 percent of the members with dependents receive FSA or HFP, or both.

The total of months deployed *in the three-year period* is the sum of months for each deployment in the period. Some deployments start before or end after the three-year period, so total months deployed in the three-year period is less than the count of months of all completed deployments that have at least one month in the three-year window. However, we computed the mean and variance of months per deployment by using the subset of deployments completed within the three-year window.

Many members marry while in service, so it is common for dependency status to change. About 15 percent of enlisted members are married at entry, 40 percent by the end of the first term, and 75 percent by the end of the second term. The deployment counts of many personnel are hybrids of deployment as measured in the months without dependents and in the months with dependents.

Critique of Deployment Measures

The deployment measures are based on pays, FSA and HFP, and are therefore likely to be a comprehensive and reliable record of deployments relative to self-reports, periodic surveys, or even personnel records. The circumstances that trigger payment of FSA or HFP account for an important subset of deployments. These include peacemaking, peacekeeping, lengthy humanitarian or disaster relief missions, deployments involving high risk, and tours that involve lengthy separation from dependents. The presence of HFP enables deployments to be designated as hostile or nonhostile, where hostile means that HFP was received in *any* month of an episode.

However, the deployment measures may under- or overcount deployments and months of deployment. We believe the count of deployments is accurate,² but there appears to be an undercount of

²The use of FSA to count nonhostile episodes is accurate for episodes of at least 30 days. Shorter nonhostile episodes are not eligible for FSA and therefore are not captured by our count. The “days away” measure of deployment recently developed by the DMDC captures short nonhostile deployments. The “days away” measure does not identify the purpose of the days away (e.g., whether for training, for a mission, for

months. We calculate that the undercount is small (see Appendix B). FSA and HFP measures of deployment miss such short, nonhostile temporary duty as some major-command exercises, joint exercises, schooling, training, and travel that is related to routine operations, maintenance, acquisition, logistic, medical, and personnel activities. The deployment measures contain no information on the purpose, location, conditions, and risks of the deployment.

SUMMARY

We use two deployment-related pays, FSA and HFP, to create variables for deployments, months of deployment, and whether a deployment involved hostile duty. The measures refer to a three-year period ending three months before the member's reenlist or leave decision. The deployments include all missions with hostile duty, regardless of their length, and all missions or assignments with at least 30 days of separation. These include peacemaking, peacekeeping, humanitarian, disaster relief, nation-building, and wartime deployments that fit these criteria, as well as unaccompanied tours. The measures are not perfect; the deployment counts appear to be accurate, but the months-of-deployment counts appear to have a small downward bias (see Appendix B). The measures do not include nonhostile activities of less than 30 days. Such activities involve time away from home—often for training, exercises, or routine assignment-related activities.

temporary relocation), and it does not identify whether the deployment involved hostile duty. The next generation of deployment data may, in effect, merge the information in the “days away” data and the PERSTEMPO data.