



Office of Economic & Manpower Analysis

Department of Social Sciences, United States Military Academy

**Military Compensation in the Age of Two-Income Households
Adding Spouses' Earnings to the Compensation Policy Mix**

Prepared for the

9th Quadrennial Review of Military Compensation

Prepared by

LTC E. Casey Wardynski

26 March 2001

The Effect of Military Service on Wives' Earnings

Heretofore, treatments of military compensation have confined their analysis to the employment and compensation conditions confronting uniformed service members. As a departure from this approach, the following analysis expands conceptions of military compensation to account for the effect of military service on the employment and earnings outcomes exhibited by civilian spouses in military households. In so doing, this exploration of spouse labor market outcomes seeks to provide a basis for policy formulation that is reflective of economic conditions facing military households at the opening of the new millennium rather than those extant at the midpoint of the last century.

By gaining an appreciation for the relationship between military service and civilian spouse earnings, the effective scope of compensation policy can expand so as to encompass spouse earnings as a channel through which policy can act to enhance military household welfare. Specifically, to the extent that unique conditions of military life impose a wage and employment penalty on spouses of military personnel, compensatory policies can operate to improve the earnings of spouses of military personnel and thus the lot of military households. Moreover, this approach may engender policy alternatives that increase military household income at a substantially lower national expense than could be achieved through compensatory increases in military pay.

By way of foundation laying, this analysis first addresses the relevance of civilian spouse earnings to discussions of military compensation. Next, it explores the degree to which military service impinges upon the employment and earnings outcomes of spouses of military personnel. Finally, this analysis outlines a range of policy measures tailored to address unique employment and earnings challenges that may confront spouses of military personnel.

Scope of Analysis

While the analysis that follows addresses spouse earnings and employment outcomes from the perspective of wives, it is equally applicable to husbands of female service members. Adoption of this wife centric focus is borne of two considerations. First, males comprise 85 percent of military personnel. Due to higher rates of household formation among male service members, wives comprise 93 percent of civilian spouses¹. This situation thus imposes analytic constraints. Specifically, male spouses of female military personnel represent too small a population in available survey data to implement an empirical analysis of the wage and employment outcomes exhibited by husbands of female military personnel.

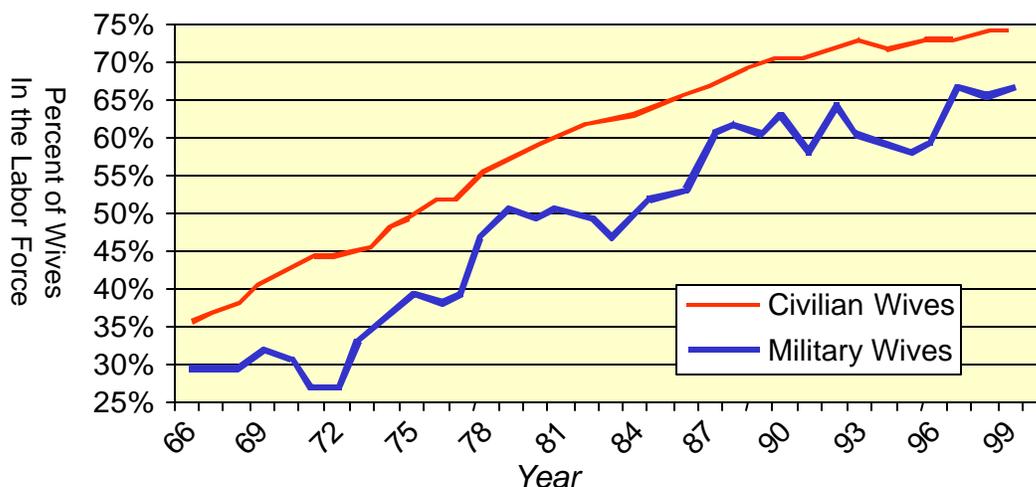
Military Wife Labor Market Participation

Current formulations of military pay have their genesis in recommendations contained within the Gorham Report on military compensation. This report was prepared at the request of Secretary of Defense McNamara in 1962. In its review of military compensation, the Gorham Commission noted that all service members were entitled to

¹ Based upon February 2001 Defense Manpower Data Center marital statistics.

basic pay, the basic allowance for quarters, and the basic allowance for subsistence. Taken as a whole, these pay and allowances and their attendant tax advantage² were combined by the Commission into the construct of "regular military compensation" (RMC) as a metric for comparing civil and military earnings. Since 1962, with minor adjustments, RMC has served as the conceptual framework within which military compensation policy has evolved. Based upon labor market conditions existent in 1962, RMC was a reasonable basis for assessing pay comparability and adjusting military compensation.

Figure 1, Labor Force Participation Among Wives with Civilian or Military Husbands Age 20 through 49
Data Source: March Supplements to Current Population Survey



At the time of the Gorham Commission, single income households were the norm. In the civil sector, male head-of-household earnings were the predominant source of household income. Mirroring this situation, distinctions between soldier earnings and military household earnings could pass without notice. Indeed, whereas high rates of female labor participation and earnings are a fairly recent phenomenon, senior uniformed leaders entered military services in which the preponderance of wives labored within the home or as volunteers. Today, however, dual income households have become the norm. Indeed, as illustrated in Figure 1, military wives now exhibit high rates of labor force participation. Since the time of the Gorham Commission, the rate of labor force participation among wives has more than doubled so that over 75 percent of wives in civilian households now work outside the home.³ Paralleling this striking trend, the rate of labor force participation among wives of military personnel now exceeds 65 percent.

Extending the foregoing descriptive analysis, it is possible to further characterize the labor force attachment of military and civilian wives. While labor force participation only provides an indication as to the rate at which Americans work outside the home, labor

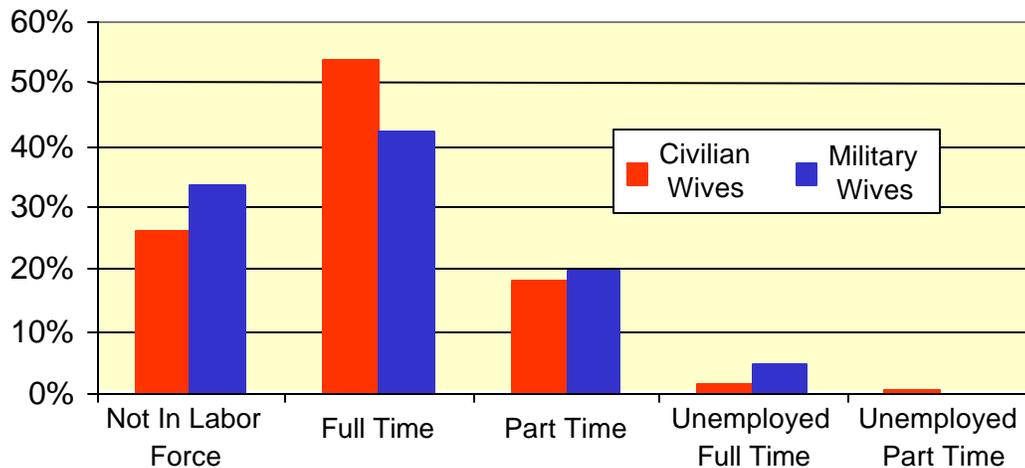
² The basic allowance for subsistence (BAS) and basic allowance for quarters (BAQ) are paid to soldiers as allowances rather than income and are thus tax free.

³ March 1999 Supplement to the Current Population Survey for wives of husbands age 20 to 49.

force status speaks to employment outcomes. Specifically, wives seeking to work outside the home can exhibit a range of outcomes ranging from full time employment to unemployed-seeking full time employment. Through reference to Figure 2, one can gauge the degree to which the labor force status of military wives is comparable to that exhibited by wives of civilians.

Mirroring the situation depicted in Figure 1, the 1999 gap in labor force participation between wives of civilian and military personnel was a bit less than 10 percent. In contrast, the unemployment rate exhibited by wives of military personnel was some 4 times higher than reported for wives of civilians. Between these bounds, full time and part time employment follows somewhat disparate patterns. In 1999, some 42 percent of military wives were employed full time while 20 percent worked part time. In contrast, 53 percent of wives of civilians worked full time while 18 percent worked part time.

Figure 2, March 1999 Employment Status of Wives During the Previous Year
 Within Traditional Civilian & Military Households
 Wives of Husbands Age 20 through 43
 Data Source: March 1999 Supplement to Current Population Survey

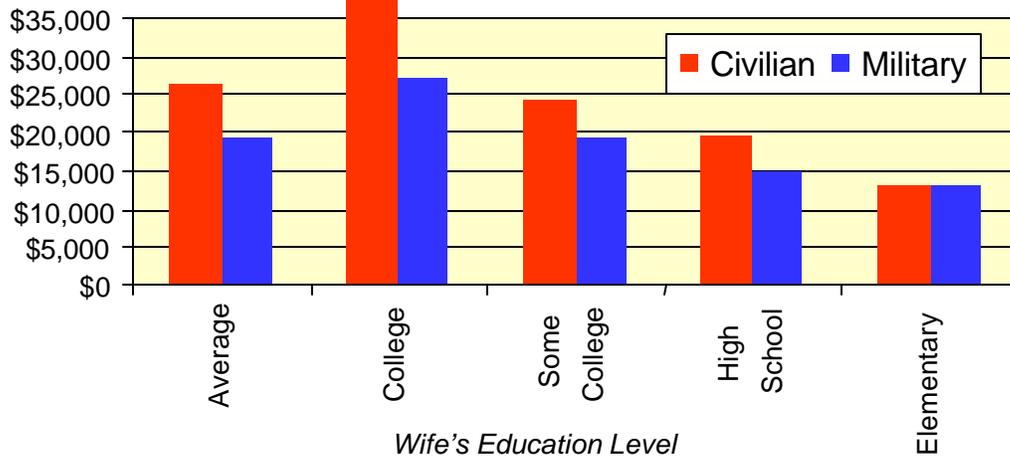


Military Wives’ Return on Human Capital

While the foregoing overview of employment status suggests somewhat disparate levels of labor force attachment between military and civilian wives, the descriptive analysis of wives’ earnings presented in Figure 3 is suggestive of a systemic military wage penalty. Specifically, a \$7,000 margin separates the average wage earnings of wives in civilian and military households. Importantly, this disparity increases with educational attainment from near wage parity among wives with only an elementary education to almost a \$12,000 gap at the college level.

Expressed in terms of a percentage wage gap, this translates to 24 to 30 percent lower wages for military wives who are high school through college graduates. While the earnings levels provided in Figure 3 do not control for factors such as hours worked, they may suggest the operation of wage reducing mechanisms linked to military service.

Figure 3, Average Annual Earnings of Wives Working Full Time, in 1998
 Wives of Husbands Age 20 through 43
 1999 March CPS



Moving Beyond Descriptive Analysis

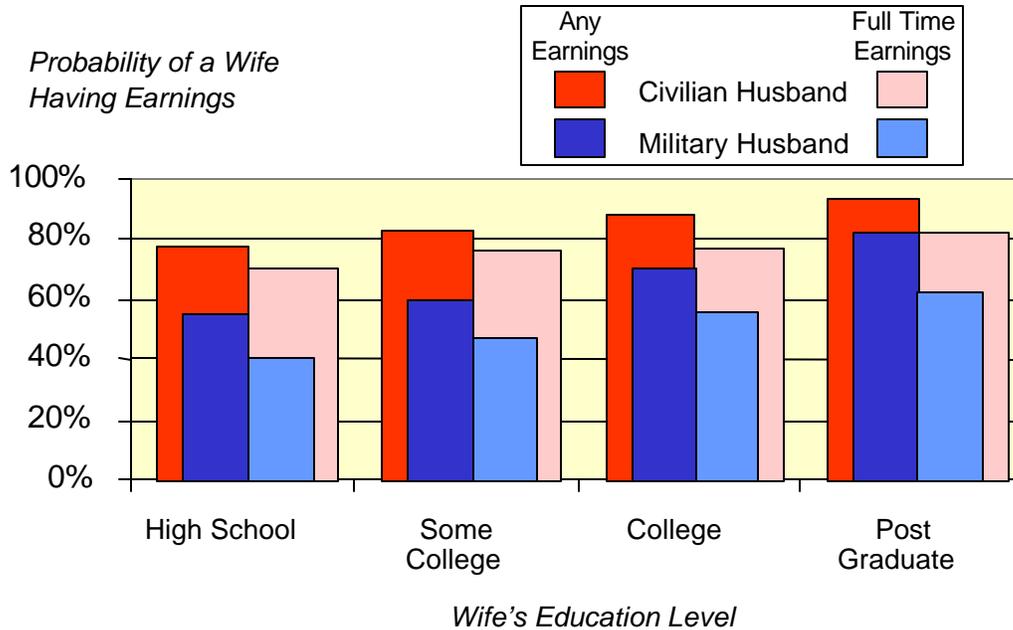
Through the use of econometric techniques, it is possible to move beyond the descriptive analysis provided in Figures 2 and 3. Specifically, many factors can shape employment and earnings levels. Among wives, these include factors that shape labor market attachment and factors that control for human capital and labor expenditure.

With regard to labor market attachment, the presence of young children in a family can increase the cost of work outside the home since such work will entail childcare expenses. If these expenses are sufficiently high, or prevailing wages are sufficiently low, work outside the home can become a losing proposition. Similarly, the presence of older children can limit the distance between home and work and thus circumscribe commuting to high wage areas. This is due to the need for a parent to be available to take such children to and from school and to after school activities. Additionally, husbands' current earnings and potential lifetime earnings, as represented by their education level, play into their wives' labor force attachment. When husbands' earnings are relatively high, wives may be less likely to exhibit high levels of labor force attachment holding other factors constant.

After controlling for the aforementioned factors, one finds that wives of military personnel are much less likely to have earnings from either full time or part time employment. Indeed, by virtue of their betrothal to a service member, military wives exhibit far less likelihood of part time or full time employment than do their contemporaries married to civilians, holding other relevant factors constant. This situation is illustrated in Figure 4 below. For example, in the case of a wife with a post-graduate degree, marriage to a service member, rather than a civilian, lowers the wife's probability of full time employment from 80 percent to 61 percent.

Figure 4, Employment Outcomes, Military and Civilian Wives

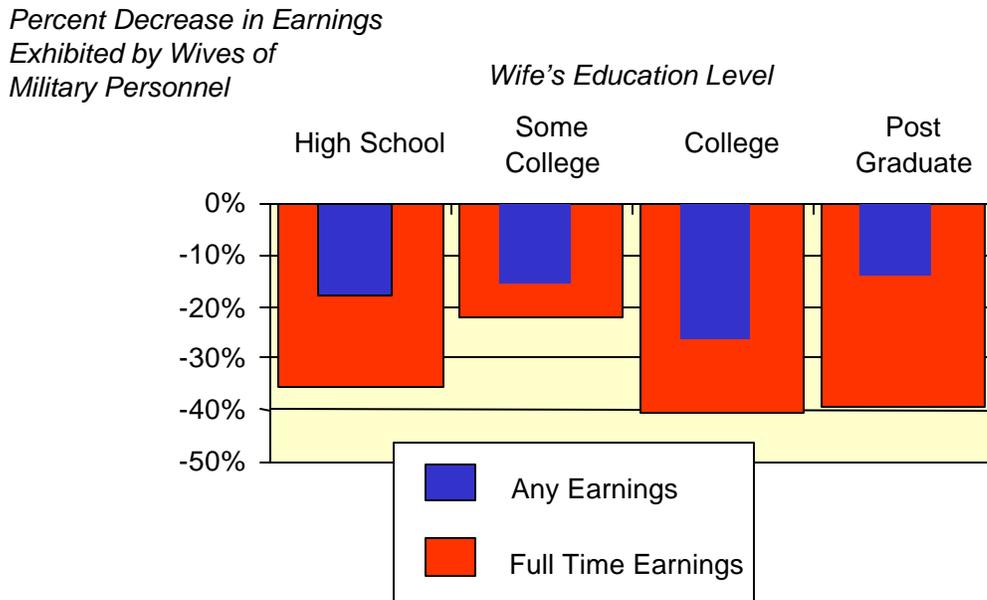
Probit Simulation Results for Wives with Husbands Age 20 to 50
 Data Source: 1993, 1995, 1997 and 1999 March CPS Supplement



Once wives obtain employment, factors such as their accumulation of specific and nonspecific human capital shape their wage outcomes. Typically, specific human capital, accumulated through work experience, yields higher productivity and wages. Similarly, higher levels of nonspecific human capital, as represented by educational attainment, correspond to higher wage levels. From a theoretic perspective, this is due to the extent to which human capital contributes to and signals higher labor productivity. Of course, labor expenditure as represented by the number of weeks worked per year also underpins annual wages. Controlling for these factors, and those shaping wives' labor force participation decisions, one finds a substantial wage penalty among military wives working full time or part time. For example, as indicated above, a wife with a post graduate degree will on average, earn some 40 percent less in full time wages than she would if she were married to a non-military husband. Given the distribution of educational attainment found among wives of military personnel, the situation exhibited in Figure 5 below yields an average wage penalty of some 30 percent among wives of military personnel after controlling for relevant factors. This figure compares quite well to the wage penalty exhibited in Figure 3.

Figure 5, Earnings Penalty Exhibited by Wives of Military Personnel

By Wife's Education Level Holding Other Factors Constant
 Data Source: 1993, 1995, 1997 and 1999 March CPS Supplement
 Assuming 1.2% Measurement Error in Weeks Worked



Educational Attainment of Military Wives

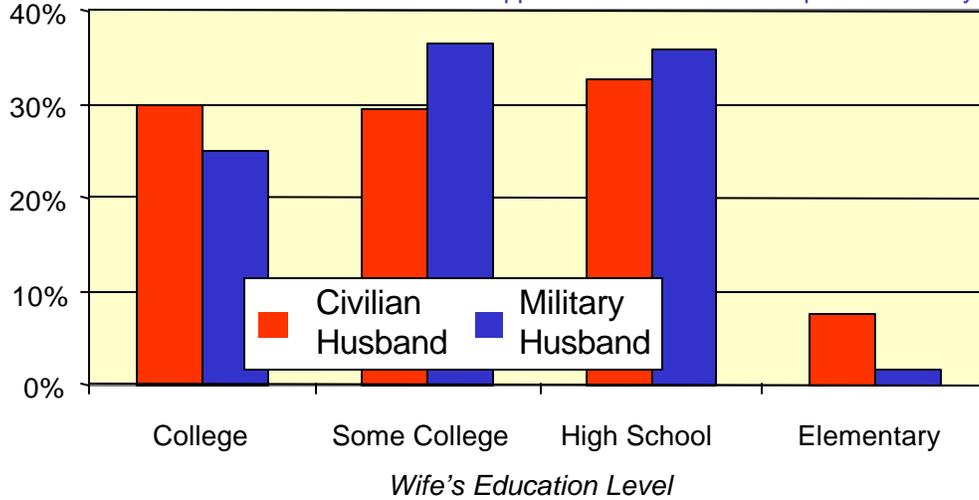
Of course, if wives of military personnel made the transition from eighth grade culmination ceremonies to matrimony without benefit of further education, the wage penalty situation addressed above would provide little scope for concern or policy intervention. This is due to the wage parity exhibited for wives with only an elementary level education (Figure 3). Such circumstances are, however, not the case. Rather, reference to Figure 6 below indicates that almost all wives of military personnel fall within education levels that exhibit lower earnings than reported by their civilian contemporaries. Indeed, for education levels below a bachelor's degree, wives of military personnel have higher educational attainment than do wives of civilians.

Of course, a confluence of human nature and military personnel policy virtually ensures that wives of military personnel will be a relatively well-educated group. Specifically, with regard to educational attainment, "likes" tend to marry "likes". Indeed, the correlation between husbands' and wives' years of education approaches 66 percent. With regard to military policy, the services have established relatively high baseline accession and career progression standards in the areas of educational attainment and native ability. By extension, therefore, courting behavior and military policy combine to yield a relatively erudite population of spouses of military personnel. Whereas accession and career progression standards are likely to increase in tandem with the intellectual demands imposed by information based warfare, there is little scope to expect that the future will witness a trend of decreasing educational attainment among the population of military wives. Rather, the opposite is far more likely. That is, the distribution of

educational attainment exhibited by military wives will be characterized by a winnowing lower bound.

Figure 6, Education Levels of Wives of Husbands Age 20 through 43

Data Source: March 1999 Supplement to the Current Population Survey

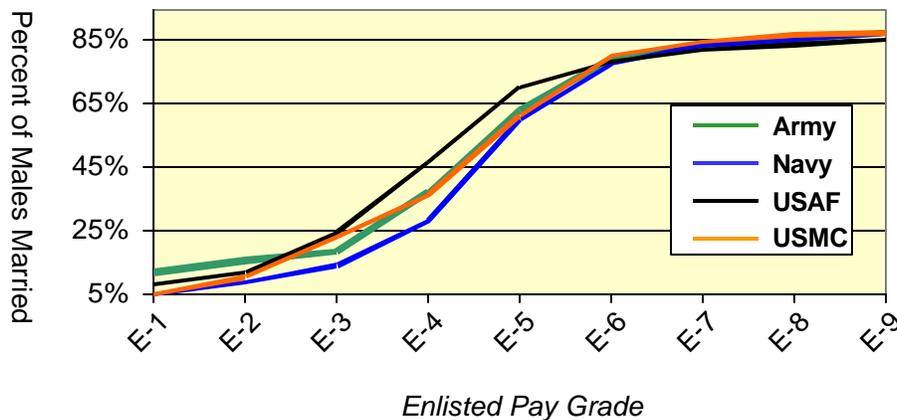


Military Household Formation

From a compensation policy perspective, the potential to raise military household income by reducing any wage penalty evidenced among wives of military personnel is derivative of two important factors. These are the magnitude of any such penalty and the prevalence of marriage among military personnel. Whereas the foregoing section set the stage with regard to the first of these conditions, this section briefly addresses household formation within the military. By way of reference to Figures 7 and 8 one can readily gain an appreciation of the extent to which marriage is a dominant trait of the career force.

Figure 7, Marital Status of Male Enlisted Personnel As of December 2000 By Branch of Service

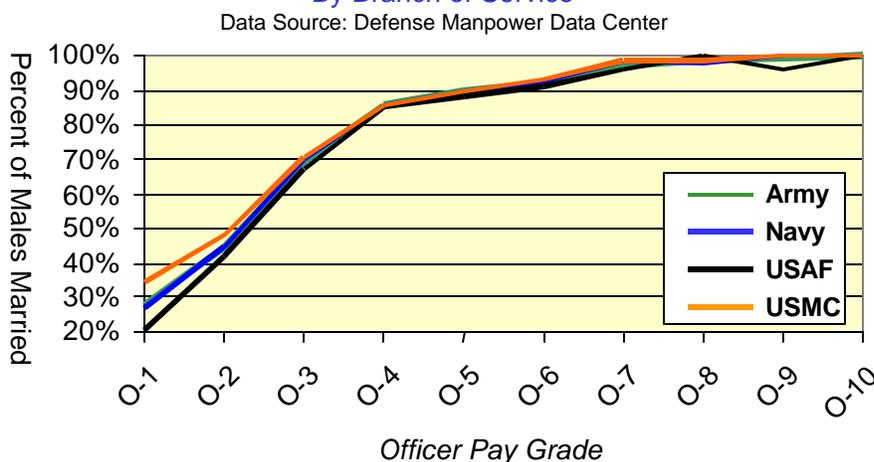
Data Source: Defense Manpower Data Center



Looking across services and pay grades, two important patterns emerge with regard to marital rates among male service members. First, the percent of married males increases dramatically as males complete their accession term of service. This pattern holds across enlisted and officer ranks. At its basis, this trend is temporal in nature in that marriage is an early life-course event. Hence, since grade advancement is a function of service length, marital rates and military grade are temporally linked. Consequently, the prevalence of any wage penalty among spouses will be an increasing function of service member longevity. Therefore, any such wage penalty will bear most heavily upon the career force.

Second, marital rates exhibit low variability across services. That is, high rates of household formation are a Department of Defense wide phenomenon and are not service specific. This situation suggests an appropriate scope for policy interest.

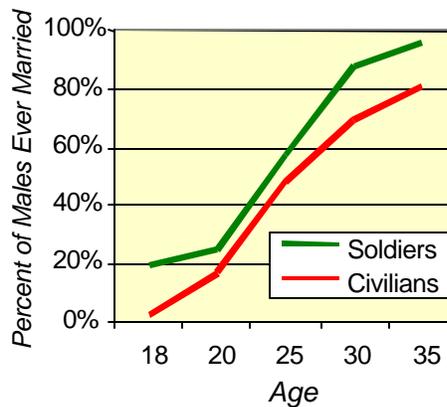
Figure 8, Marital Status of Male Officers
As of December 2000
By Branch of Service



Beyond inter-service and inter-temporal comparisons of marital rates, it is also instructive to compare marital rates exhibited by servicemen to those typical of civilian males. For example, as indicated in Figure 9, male soldiers exhibit higher marital rates than do their civilian contemporaries. Indeed, at any given age, they are far more married than are their civilian contemporaries.

Figure 9, Marital Status of Civilian Males and Male Soldiers
Age 18 to 35 Ever Married as of March 1999

Data Source: Current Population Survey, Army Enlisted Master File & Dependent Eligibility Entitlements System



The foregoing situation should be contrasted with conditions and policies existent at the time of the Gorham Commission. Prior to the inception of the All Volunteer Force, soldiers required their

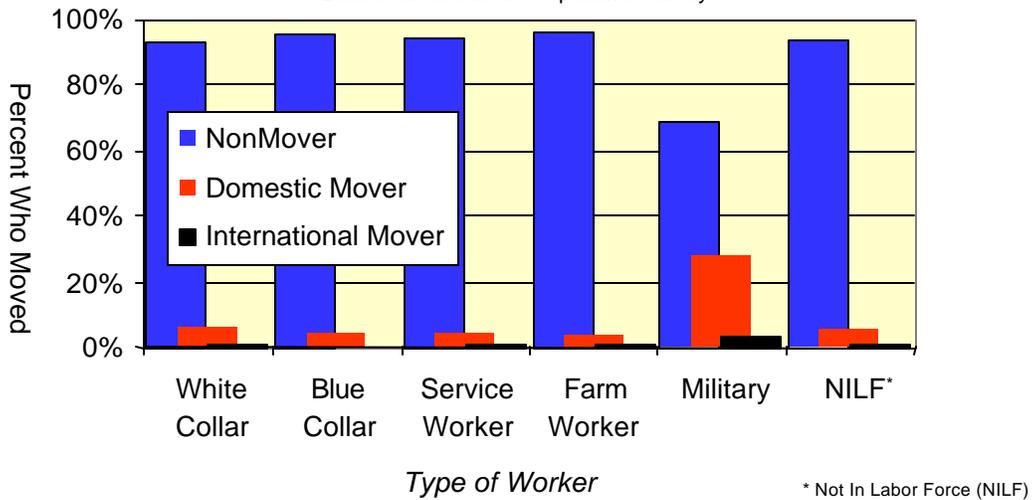
commander's permission to marry. Similarly, relatively low military pay did not afford junior personnel the wherewithal to set up housekeeping. At the same time, the military services engaged in practices that were likely to have depressed the labor participation of military wives. For example, until the early 1980s, commanders continued to make reference to wives' community support and volunteer activities in their husbands' efficiency reports. Today, however, military services make a substantial investment in married personnel. This investment takes the form of family housing, increased allowances for off-post housing, medical care for wives, and increased weight and dislocation allowances for transfers between stations. Given this situation, military personnel now face considerably lower financial barriers to household formation.

The Impact of Migration

As reflected in Figure 10 below, military service entails frequent migration. For example, 32 percent of traditional military families moved across county or international boundaries between March 1998 and March 1999. This transient behavior ensues from the military utility of shifting personnel between units to satisfy near-term readiness demands, professional development requirements, and to accommodate changing national priorities and heterogeneous rates of personnel turnover. Based on these considerations, the Army, for example, moved one third of its soldiers during the past year. Many of these reassignments were structured to shift personnel from training, recruiting, and acquisition posts to combat forces with the objective of raising the readiness of under-strength divisions. In contrast, as illustrated in Figure 8 below, civilian households were relatively intransient.

Figure 10, Percent of Traditional Households with Husbands Ages 20 to 49 That Moved Across County Lines Between March 1998 & 1999

Data Source: Current Population Survey



Cognizant of the mobile nature of military life, academic researchers have heretofore addressed the topic of military wives' earnings from the context of migration. That is, they have largely attributed the wage penalty suggested in Figure 3 to dislocation induced job loss and career interruption. While there is certainly a basis for this approach, it represents something of a policy dead-letter within the Department of Defense. This is due to the fact that policy remedies flowing from this frame of analysis consistently begin with

recommendations to reduce migration. In this vain, any substantive improvement in spouse labor market outcomes would depend upon substantive decreases in military migration.

Given the global dispersion of our forces, and the degree to which migration provides senior leaders with the flexibility to respond to shifting security requirements, an approach that seeks to balance spouse earnings with the readiness implications of migration restrictions entails intractable tradeoffs.

As mentioned, migration based analysis, as applied to the military, is an extension of earlier academic work. This work ensued from the increasingly migratory nature of corporate employment during the 1960s and 70s. In a corporate setting, wage loss and career interruption were seen to afflict wives as they moved according to the dictates of their husbands' career. Within that context, migration was viewed as a household utility increasing exercise in which a couple elected to move so long as any relocation induced wage increase garnered by the husband exceeded the wife's earnings loss. However, from the perspective of military households, migration typically has zero net effect on the service members' income. Moreover, it can be an income-reducing proposition for the civilian spouse of a service member. This is due to the fact that within the military, migration is not a matter of household income maximization. Rather, migration is a condition of military service.

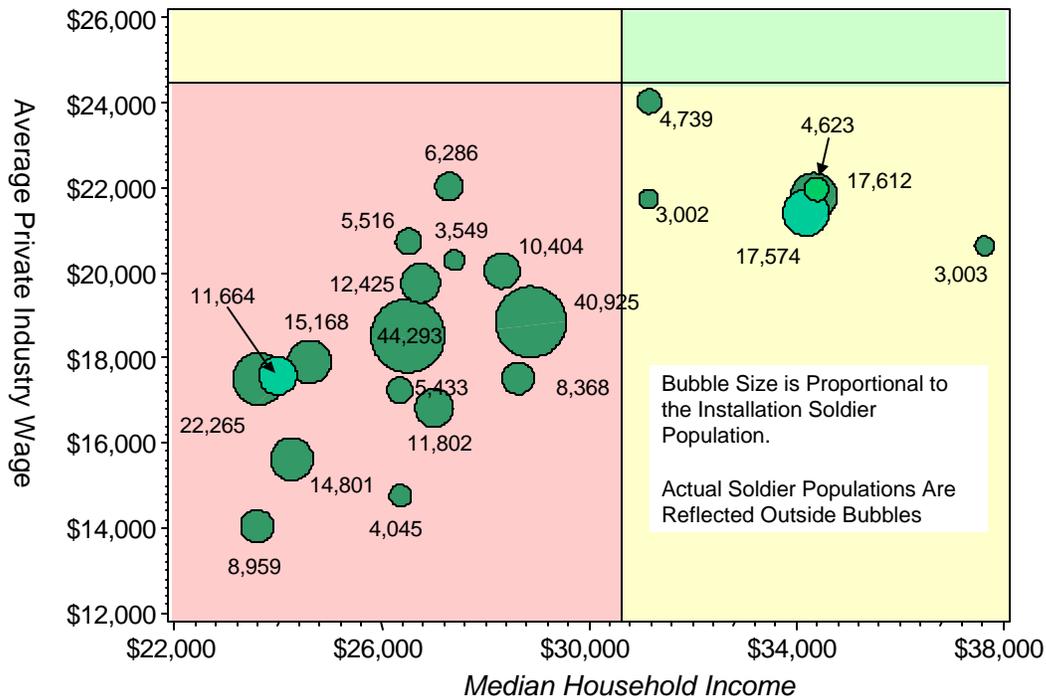
Based upon the disparate considerations underlying migration in civilian and military households, and the difficulty of significantly reducing military migration, this analysis does not dwell upon the journey. Rather, it places wives' earnings within the context of the destination. Specifically, by focusing upon the nexus between military migration and wives' employment and earnings outcomes, earlier analysis failed to account for the labor market conditions found in the vicinity of military installations. As we will see, migration in the military does not entail relocation between areas of economic bounty nor from depressed areas to surplus areas. Rather it typically entails moves between areas characterized by poor employment opportunities and low wages. From this perspective, permanent residence in such areas would not address the primary basis for poor employment and wage outcomes exhibited among spouses of military personnel. By way of lending substance to this approach, we now turn to the economic landscape confronting spouses of Army personnel.

Army Stationing Practices – A Case Study

A review of the geographic distribution of Army Posts within the United States finds that most garrisons are located in rural areas that are characterized by relatively low wages and household earnings. Indeed, through reference to Figure 11 below, we find that average private sector wages in Army locales are well below the national average.

Figure 11, 1992 Average Wage (U.S.= \$24,481) & Median Household Income (U.S.= \$30,636) within the County Outside Post Main Gate

Data Source: 1992 Personnel Authorization Manning Document and USA Counties 1998



In Figure 11 Army green bubbles represent installations. The size of these bubbles is proportional to the share of soldiers stationed on these posts. The spatial orientation of these dots reflects economic conditions prevailing in the vicinity of Army posts. Bubbles located near the top of the graph connote posts located in areas with private sector wages that approach the national average. Bubbles near the bottom of the graph indicate posts that are located in areas with wages well below the national average. Similarly, bubbles found within the yellow shaded region to the right of the national median household income reference line connote posts located in areas characterized by household income above the U.S. median. From this perspective one can see that Army Posts are primarily located in areas characterized by relatively poor wage and income conditions (the pink shaded region).⁴

Steve was doing well and they (his superiors) had his career all planned out and it did not include big cities where I could have a decent career (except for Washington DC). The moving around is not such a big deal, because large companies (like Arthur Andersen) could/would accommodate that, however, most Army posts are nowhere near a major city. That is a problem - unless you like living apart! – former military wife

Reflecting upon the mission of the Army, the homogeneity of deficit conditions found in the vicinity of Army posts is not surprising. Army operations entail frequent large-scale

⁴ Developed from USA Counties 1998, U.S. Census Bureau.

training exercises involving long-range weapons and fast moving mobile formations. Consequently, Army land use requirements are virtually antithetical to those that would yield a juxtaposition of Army posts and thriving labor markets.

History has played a role as well. The need to train mechanized forces for overseas employment in World War II led the Army to expand its use of garrisons in the rural south, the west, and southwest. These areas afforded large maneuver areas for year-round training. As a result, locales such as Fort (Camp) Stewart, Fort Riley, Fort Bliss, and Fort Hood attained growing importance as platforms for training and deploying major combat formations. During the post Cold-War draw-down, the Army further concentrated its forces on the set of remote installations best able to accommodate the spatial requirements of mechanized warfare.

While the foregoing conditions need not rule out lucrative labor force participation among Army wives, they are not suggestive of characteristics one would seek in selecting migration destinations. Nor are these the sort of conditions envisioned in traditional economic theory as first hypothesized by J. R. Hicks as early as 1932 "...differences in net economic advantages, chiefly differences in wages are the main causes of migration".⁵ Rather, the rural basing bias evidenced in Figure 11 may entail untoward implications for Army household income. Therefore, the analysis that follows explores spouse earnings by gauging the extent to which a paucity of local economic activity impairs the employment and earnings prospects of spouses of military personnel.

Local Labor Markets and Military Wives' Labor Market Outcomes

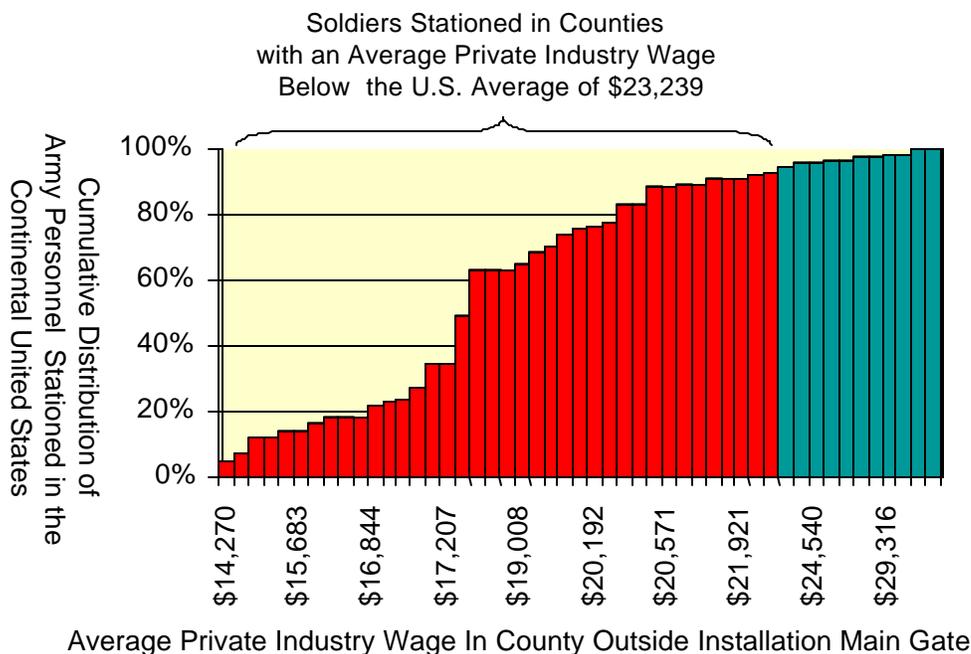
Recall that earlier analysis sought to explain differential wage outcomes between wives of military personnel and wives of civilians in terms of military migration. Since that approach addresses the impact of local labor market conditions, it proceeds from an implicit assumption that military households are randomly assigned to locales across the spectrum of national labor markets. However, reference to Figure 11 suggests that such an assumption may be wholly unwarranted. Indeed, casual empiricism suggests that military wives confront employment opportunities that are distinguishably less robust than those faced by the general population of wives.

⁵ Greenwood, M. (1975). "Research on Internal Migration in the United States: A Survey." Journal of Economic Literature **13**(June): 397-433.

One can readily gain an appreciation of the unique employment environment confronting military wives through reference to Figure 12 below. This graphic represents the cumulative distribution of active duty Army personnel by installation in 1991. Each bar represents an Army installation. The incremental increase in the heights of bars represents the contribution of each installation to the cumulative population of soldiers on installations in the continental U.S. (CONUS). The horizontal axis provides the average private sector wage prevailing in the county adjacent to each installation. By arraying installations according to this private industry wage, one can see that the vast majority of soldiers are stationed in areas characterized by relatively low wages. While I selected 1991 data so as to conform to analysis that follows, the message conveyed by Figure 12 is relatively time invariant. That is, given the relative proportions of soldiers, and therefore soldiers' wives, residing in areas with below average wages, one can immediately abandon any assumption of random assignment of Army wives to labor markets. Moreover, the implied distribution of wages confronting Army wives entails important implications.

Figure 12, Cumulative Distribution of Active Duty Army Personnel by Duty Station According to the Average Private Industry Wage in 1991 Within the County Outside their Duty Station Main Gate

Data Source: 1992 Personnel Authorization Manning Document and USA Counties 1998



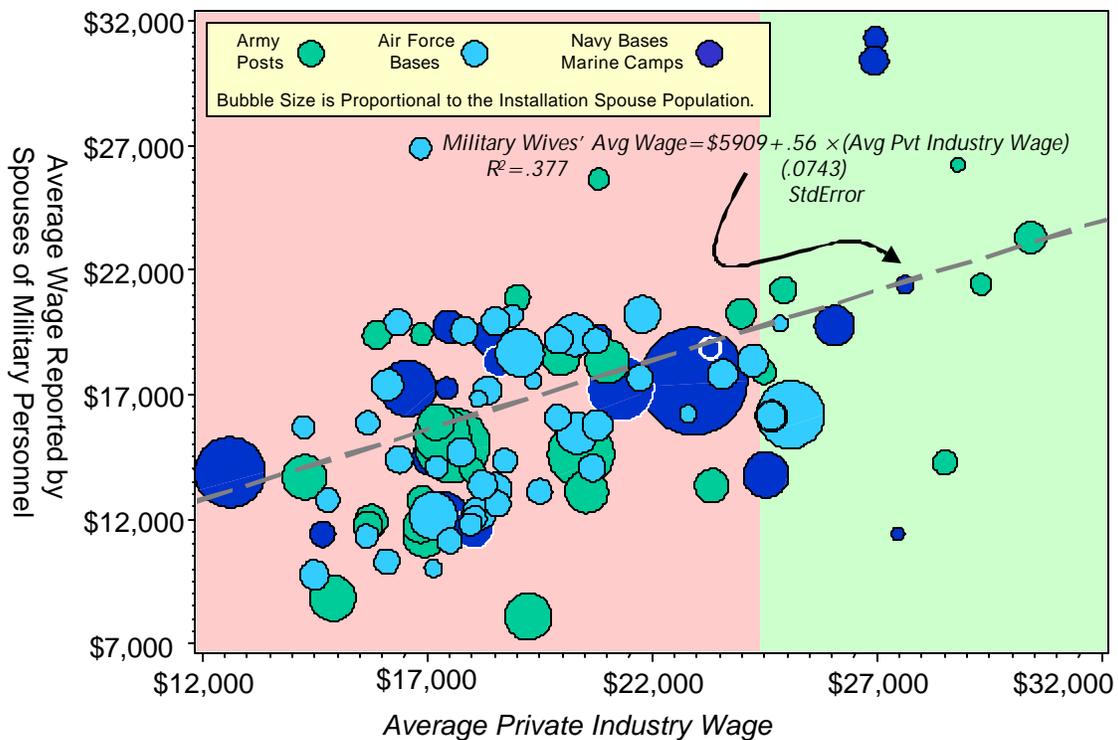
"My ability to have a career while my husband was in the military was a huge factor in him leaving. Many bases are located in areas that make it extremely difficult to have a good career, and moving every three years makes it tough too. Now that he is out of the military and we both have good careers, we are much happier" – former military wife

First, in classical analysis of labor markets, one would expect that any locality based earnings penalty would be self-correcting through induced migration from low wage areas

to high wage areas. Indeed, with zero or low migration costs this would be the case for civilian households. However, military households are not free to engage in such welfare enhancing migration. Rather, soldiers are assigned to Army posts according to military requirements. By extension, soldiers' spouses are also tied to these installations through the institution of marriage. Hence, the wage environment confronting these wives is not only a function of their stock of human capital and abilities, but also of successive evolutions of military stationing requirements as shaped by the vagaries of history.⁶

From an analytic perspective, one can gauge the influence of local labor market conditions on military wives' earnings through the use of statistical techniques that control for human capital and labor supply factors as well as local labor market demand conditions.

Figure 13, Average Spouse Wage by Installation & Average Private Industry Wage (\$24,481) Within the County Outside the Installation Main Gate in 1991



To motivate the analysis that follows, consider the following simple model. First, assume random assignment of military couples to Department of Defense installations. Given this assumption, differences in the earnings of wives of military personnel across installations

⁶ Whereas many U.S. cities grew apace with trade and commerce, the Army's set of installations was accumulated to support military operations. Thus, posts such as Fort Huachuca and Fort Leavenworth were established during the Indian Wars. F.E. Warren Air Force Base was selected as a missile station out of Cold War strategic considerations.

must be due to local factors. To implement an analysis of this model, reference is made to local private sector wages in 1991 as my factor of interest.⁷

As presented in Figure 13 above, within the context of a simple linear regression model, average private industry wages, as a proxy for local labor market conditions, explain much of the variation in wives' average wages across installations. Here, wives' average wages by installation are presented on the vertical axis. Average local private sector wages prevailing in counties adjacent to these installations are presented along the vertical axis. Each bubble represents a military installation with service affiliation denoted by the color of the bubble. Within service bubble sets (installations) bubbles are proportioned to indicate the relative size of installations in terms of their assigned married population.

As evidenced in Figure 13, most military installations are located in areas characterized by relatively poor wage conditions. This situation is evidenced by the location of most bubbles within the pink shaded area. That area connotes average private sector wages reported for U.S. counties that fell below the U.S. average private sector rate of \$23,239. Moreover, one can see that installation bubbles follow a pattern suggestive of a nexus between local wage conditions and military wives' earnings. The rising gray regression line indicates this pattern.

The current military is absolutely not compatible with two career couples. What in the heck is a software executive going to do at the NTC, Fort Drum, JRTC, Fort Leonard Wood or Korea? – former military wife

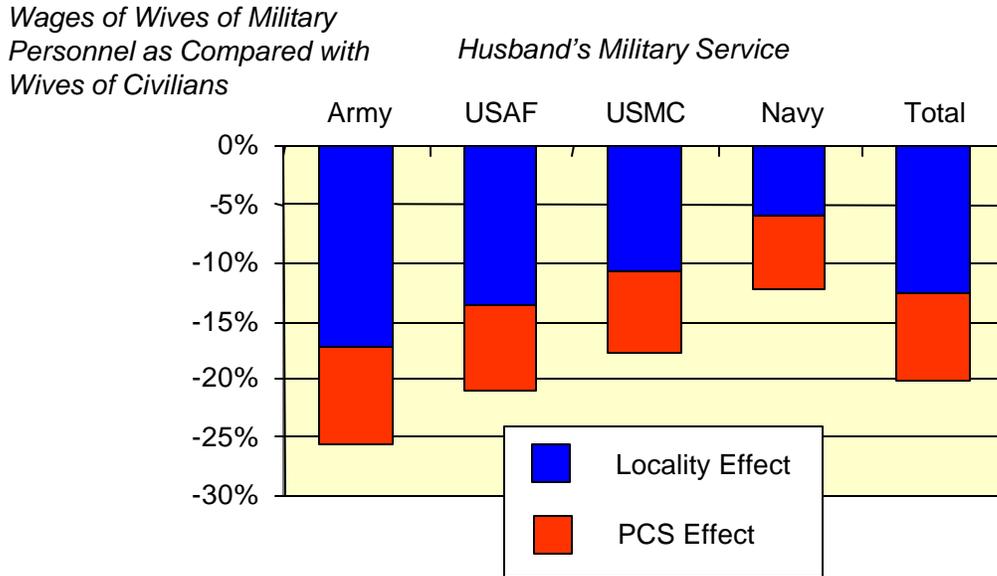
Further exploration of the foregoing situation using multivariate regression analysis substantiates the role local conditions play in shaping wives' labor market outcomes. Specifically, after controlling for relevant factors, to include local price levels and frequency of PCS moves, one finds that some 63 percent of the wage penalty exhibited among wives of military personnel can be attributed to locality effects. Across services, the greatest burden of these locality effects falls in order of scale upon wives of soldiers and airmen and Marines. Among wives of sailors the wage penalty is evenly distributed between locality effects and lost earnings due to migration. The distribution of locality and migration effects is provided in Figure 14 below.⁸

⁷ The 1992 DoD Surveys of Officers and Enlisted Personnel and Military Spouses is the most current available source of data regarding the employment and earnings situation of wives of military personnel.

⁸ These figures differ from the 30 percent wage penalty discussed earlier due to differing data sources and time periods. The 30 percent wage penalty addressed previously was based upon 1995 through 1999 Current Population Survey Data that did not include overseas personnel. The figures provided above are based upon 1992 DoD Survey data that did include overseas personnel but did not include a civilian comparison group. Therefore, they entailed indirect comparisons of military and civilian wives' wages using military wives' wages in San Diego as a proxy for average civilian wives' wages. San Diego was selected as the proxy due to the fact that wages among wives in San Diego were very close to the national average and military wives in San Diego garnered wages comparable to civilian wives surveyed in the Current Population Survey.

Figure 14, Earnings Penalty Exhibited by Wives of Military Personnel Within Military Services

Data Source: 1992 Surveys of Officers, Enlisted Personnel and Military Spouses



Based upon the foregoing situation, one could expect that a 50 percent reduction in PCS moves would only yield a five to six percent reduction in the aggregate wage penalty exhibited among wives of military personnel.

Before leaving the topic of locality effects on military wives' earnings, a brief discussion of cost of living considerations is in order. First, one might reason that the lower earnings garnered by military wives are offset by a lower cost of living in low wage locales. Such notions do not, however, reflect the realities of the military compensation situation. For example, housing, food, transportation, personal insurance and health care comprise 80 percent of typical household expenditures. Of these, housing price levels are likely to exhibit the highest degree of variability across labor markets.

For military families, housing allowances are tied to local markets so that families in high cost areas receive far higher allowances than do families in low cost areas. Indeed, housing allowances are structured to account for housing price variability. Additionally, in many instances, housing is provided in kind rather than in cash. This further reduces the potential that savings on housing expenses can act as an offset to any locality induced wage penalty.

With regard to food expenses, Department of Defense policy can actually run against the notion of lower living costs offsetting wives' lower wage earnings. Specifically, by policy, military families can purchase groceries in DoD commissaries at cost plus 5 percent. However, the Defense Commissary Agency establishes the price of items that are not

nationally branded using twenty five pricing zones. Across these zones, transportation and distribution costs can result in military families paying different prices in different regions. Consequently, due to the contribution of higher transportation and distribution costs, military families in rural, low wage, areas can actually face higher food costs than military families in urban areas characterized by relatively high wages.

Finally, from a statistical perspective, there is no basis to assert that low price levels explain, and therefore offset, the wage penalty exhibited by military wives due to locality effects. Indeed, within the framework of multivariate regression analysis, one finds that military wives' continue to exhibit a substantial wage penalty after controlling for local price levels.

Improving Labor Market Outcomes - Policy Alternatives

As demonstrated, wives of military personnel incur a substantial wage penalty as compared to their contemporaries married to civilians. Moreover, this penalty increases with educational attainment. Given the high correlation between spouse education levels, this situation does not bode well for military services confronting the intellectual requirements imposed by 21st century information based operations. Whereas wives' earnings constitute some 40 percent of dual income civilian household earnings, the importance of wives' financial contribution to household welfare is apparent. In the case of military households, a substantial increase in RMC would be required to offset the wage penalty borne by military wives. For military wives with a Bachelor's degree, such an offset would amount to 12 percent of their husbands' RMC.

Of course, increasing military pay so as to offset lost spousal earnings would be a poor substitute for solutions that address the basis for these lost earnings. First, many military wives elect to work within the home rather than entering the labor force. Consequently, these wives do not suffer a wage penalty. In the case of these wives, provision of a compensatory military pay increase would be inefficient and inequitable. Alternatively, such a policy would fail to account for intangible aspects of employment sought by military wives who enter the labor force. Specifically, when surveyed, 88 percent of civilian spouses of military personnel reported that earnings from work contributed to their self-esteem.⁹ Similarly, 93 percent reported that full time employment contributed to their career aspirations.

From the perspective of national output and welfare, policies should be directed toward reducing barriers that engender the wage and employment penalty exhibited among spouses of military personnel. Absent such policies, these spouses will continue to create less national output, pay fewer taxes, and generate less wealth than they would if they were married to a civilian. From this perspective, a compensatory increase in RMC should not be the starting point in addressing the earnings and employment penalty incurred by wives of military personnel.

⁹ 1992 DoD Survey of Military Spouses.

With regard to the transient nature of military service, it is clear that migration impairs the labor market outcomes of spouses of military personnel. However, as previously discussed, the effect of such migration is relatively moderate when compared with locality-based effects. Moreover, it would be difficult to argue that migration is the principal labor market challenge facing spouses of military personnel stationed within areas characterized by poor employment opportunities and low wages.

The Federal Employment Earnings Premium

With regard to reducing the wage penalty experienced by spouses of military personnel, civil service employment policies are a logical point of departure. Each of the services currently employ large numbers of civilian personnel. Since military wives garner relatively low earnings and depressed employment prospects due to their affiliation with the military, employment of these spouses by the military may offer substantial benefits to military households while furthering defense and national objectives. As a case study, the analysis that follows explores the efficacy and feasibility of increasing employment of military spouses within the Department of the Army.

Department of the Army civilian employment consists of appropriated and non-appropriated fund positions. Whereas appropriated fund positions entail higher wages, greater career opportunities, and are more numerous at major troop installations, the analysis that follows focuses on these positions.¹⁰

As of the beginning of FY2000, the Army employed 203,095 civilian personnel in appropriated fund positions. Of these employees, 139,330 were collocated on major installations with large numbers of active component soldiers. Of this considerable population of civilian employees, only 8,800, or 6 percent, were spouses of soldiers. Given this situation, there is considerable scope to expand Army employment of soldiers' spouses. In terms of policy efficacy, there is also scope to believe that this would significantly raise the wage earnings of spouses gaining employment as Army civilians. Indeed, regression analysis of spouse earnings indicates that spouses who are currently employed full time in the federal civil service earn 18 percent more than Army spouses with other sources of full-time earnings. This suggests that the Army could close much of the wage penalty exhibited among soldiers' spouses by affording them greater entrée to federal employment.

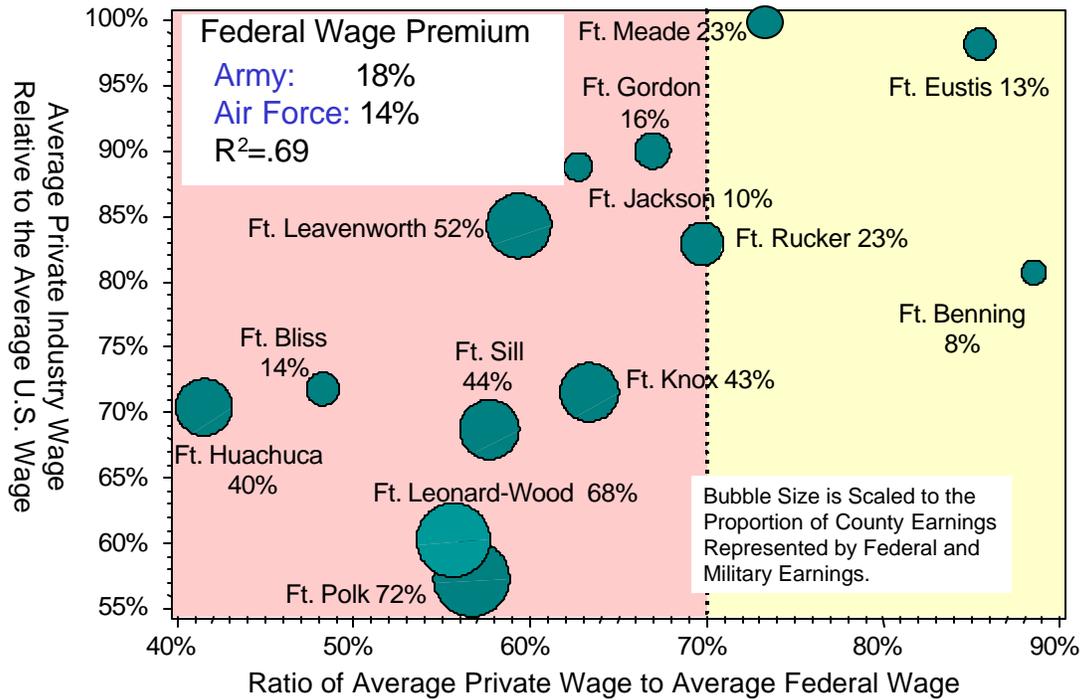
Figures 15 below illustrates the benefits of federal employment from a local perspective. By way of orientation, the horizontal axis indicates the ratio of local private sector wages to local federal sector wages. The vertical axis indicates the ratio of local private sector wages to the average private sector wage for the United States as a whole. Here, local wages refer to average federal or private sector wages within the counties in which Army installations are located. The size of installation bubbles indicates the proportion of earnings in the local county that are derived from federal civilian and military wages. Thus, in the case of Fort Huachuca the average private sector wage is 58 percent lower than the

¹⁰ For example, at the Army's most highly populated post, Fort Bragg, there are 8,700 appropriated and 932 non-appropriated fund positions.

average federal wage and 30 percent lower than the U.S. average private sector wage. Additionally, federal civilian and military wages account for 40 percent of all wages in the county in which Fort Huachuca is located.

Figure 15, Ratio of Local Wages to Federal Wages and the Average U.S. Wage

Source: USA Counties 1992 & 1992 DoD Survey



As indicated above, by moving from private sector employment, to federal employment, spouses of soldiers at Fort Huachuca could anticipate a substantial increase in earnings. The basis for this situation lies within the national scope of federal wage determination. Aside from locality adjustments, federal wages are set forth in pay scales that apply uniformly across federal service regardless of location. Thus, in areas of relatively poor wage conditions, federal civil service is likely to offer relatively lucrative compensation.

Unlike private sector employment, federal employment is governed by regulations that present substantial barriers to entry. These procedures are set forth in Title 5 of the Code of Federal Regulations (5 CFR). Partial relief from 5 CFR requirements is afforded by Executive Order 12721. This order requires the military services to provide priority employment to civilian spouses who are authorized to accompany their military spouse during overseas assignments. The efficacy of this exception to 5 CFR appointment practices can be seen through reference to appropriated fund employment rates exhibited by Army spouses overseas and within the United States. In Europe, spouses of soldiers occupy 23 percent of the approximately 13,000 appropriated fund positions. In contrast, spouses of soldiers comprise only 4 percent of appropriated fund positions on major Army installations in the United States.

Unfortunately, the operation of E.O. 12721 is far from complete in terms of enhancing spouse entrée to federal employment upon their return to the United States. Though overseas employment under E.O. 12721 does afford spouses returning to the U.S. non-competitive appointment status, such status still leaves spouses well down the list for reappointment due to the operation of preferences for groups such as veterans, displaced workers, and noncompetitive transfers.

and selection may be made of noncompetitive Army candidates, VRA appointments, appointments of 30% or more disabled veterans, noncompetitive transfers, placements to correct equal employment opportunity deficiencies, placement of the handicapped, and placements of persons returning from overseas tours of duty, without regard to spouse preference.¹¹

Consequently, only 1,980 spouses of active duty soldiers now employed by the Army were selected while using this preference program.

In light of the foregoing, it is clear that the Department of Defense will require new authority with considerable hiring discretion if the services seek to improve the earnings prospects of military spouses through appropriated fund employment.

Aside from the obvious benefits to Army households, appropriated fund employment of soldiers' spouses could also accrue substantial benefits to the Army and the Treasury. The benefits arise through savings in health benefits afforded to federal employees and through the collection of income taxes on the incremental earnings of spouses employed in federal civil service. With regard to the first point, the military offers subsidized health benefits to non-temporary employees under the Federal Employees Health Benefit Plan (FEHBP). Currently, the government cost share of this benefit is \$2,529 per enrolled employee.¹² Among Army employees who are not married to an active duty soldier, the take rate for this benefit is 89 percent. In contrast, only 19 percent of soldiers' spouses working as Army civil servants avail themselves of this benefit.¹³ At these rates of usage, the expected FEHBP cost for the spouse of a soldier would be \$557, while the expected cost for the spouse of a civilian would be \$2610. Assuming stable FEHBP take rates, employment of soldiers' spouses would net the Army approximately \$2,000 in expected benefits savings per spouse employed. Since under 5 CFR employment is only offered to fully qualified applicants, there should be no incremental training cost associated with such a strategy. Moreover, there is substantive reason to expect that spouses of military personnel embody skills that are well matched to job requirements. Recall that soldiers' spouses occupy 23

¹¹ Office of Personnel Management (1999). Title 5 Code of Federal Regulations, Administrative Personnel. Washington, D.C., U.S. Government Printing Office.

¹² Office of Personnel Management (1999). OPM Financial Management Letter F-99-03, dated February 5, 1999, Health Benefit Cost Factor. Washington, D.C.

¹³ The basis for this low take-rate can be found in the fact that federal employees bear about 30 percent of the cost of the FEHBP while all spouses of soldiers enjoy health coverage under various military health care programs by virtue of their marriage to a soldier. Also, in the vicinity of many installations, military health services are more convenient than care available from civilian providers under FEHBP.

percent of Army civilian positions in Europe.¹⁴ As installations in Europe engage in many of the same activities entailed in operating posts in the United States, there is reason to believe that rates of Army spouse employment in the U.S. could mirror those found in Europe.

Army employment of soldiers' spouses would also benefit the United States Treasury through increased tax receipts. If one assumes a 15 percent tax rate and 18 percent increase in spouse earnings, income tax payments from spouses gaining employment in an appropriated fund positions would rise by approximately 3 percent, or \$360 on a base of \$12,000. Thus, the net change in the federal cost associated with hiring the average soldiers' spouse would be a \$2,413 saving.

Of course, from the perspective of other federal employment aspirants, policies directed toward increasing federal employment of soldiers' spouses assume the character of a zero-sum game. That is, the number of positions available in Army civil service is relatively fixed. Therefore, each spouse of a service member who gains federal employment reduces federal employment opportunities available to job aspirants in civilian households. Thus, spouse employment policies may lead to civilian unemployment or underemployment in the vicinity of some posts during a period of labor market adjustment. Since civilian households are free to relocate to more lucrative job markets, any burden associated with this adjustment should be transitory. In contrast, spouses of military personnel cannot relocate to better job markets while maintaining an intact military household. Thus, their forgone employment and earnings are not transitory and will persist as long as they are stationed in areas characterized by poor labor markets. Consequently, affording spouses of soldiers enhanced labor market opportunities through federal employment can be welfare enhancing from a national perspective.

It is possible to craft federal employment practices so as to minimize the burden of an enhanced spouse hiring authority on the existing civilian workforce. That is, rather than separating existing workers, the services could employ a policy of replacement through attrition. Thus, spouses of military personnel could be added to the federal payroll as existing workers retire or leave federal employment. Within the Army this would generate federal employment opportunities for 20,000 to 26,000 spouses over the next five years. From a stakeholders' perspective, these spouses could be members of the federal employees union and would thus not materially affect union membership rolls.

Enhancing Spouse Earnings Through Contracting Policy

In addition to employing large numbers of civilians as civil servants, the military services contract with a wide variety of firms for services ranging from communications support to dry cleaning. For example, during 1999, the Army let more than \$60 million in service contracts at Fort Polk. The preponderance of these contracts were awarded under competitive bidding procedures. Borrowing a page from 1970's era employment programs

¹⁴ Department of the Army (1999). Civilian Personnel Master File, Headquarters Army Civilian Personnel System., 1999.

such as the New Jobs Tax Credit¹⁵ and Targeted Jobs Tax Credit¹⁶, there is scope to expand contractor employment of military spouses in such competitive bidding situations.

As a matter of policy, the services could afford contractors an employment subsidy for each wife or husband of a service member they employ after winning a competitive bid contract. Such a policy should have the effect of increasing the private sector employment of military spouses at little or no cost to the government. To the extent that military spouses are as productive as local civilian labor, there should be little to no incremental cost to contractors associated with employing these spouses rather than local civilian labor. Thus, a spouse employment subsidy would pass directly to a firm's bottom line as profit. In a competitive bidding setting, contractors would have scope to lower their bids by the amount of the subsidy that passed to profits. Therefore, the entire subsidy could return to the government in the form of lower contractor bids. At the same time, of necessity, contractors would take maximum advantage of such a subsidy so as to gain the competitive bidding advantages entailed therein.

Applying Technological Innovations to Expand Labor Markets

To overcome the untoward effects of local labor markets on the earnings of spouses of military personnel, the services could draw upon innovations in e-commerce. Specifically, following the business model of firms such as Commerce One and Ariba Inc., the services could launch pilot projects to leverage the Internet as a vehicle to expand the scope of labor demand afforded to military spouses using Web-based reverse auctions. Given the shortage of skilled labor now evidenced in the economy, excess labor demand could be matched to excess spouse labor supply through reverse auctions in the Web-based marketplace. Target industries could include publishing, telemarketing, and computer software development where transportation and communications constitute minuscule components of production costs.

Stationing Practices

As opposed to expanding federal and private sector labor demand in local labor markets or broadening spouses' access to regional or national markets, the services should explore the basis for retaining installations in remote areas. Heretofore, the services have stationed many of their personnel in remote areas that provided expansive training areas. However, trends suggest that within the foreseeable future, weapons lethality, range, and speed of movement will exceed the terrain capacity of all but a handful of installations. Additionally, the prohibitive cost of maneuver and weapons training has led to a marked substitution of virtual training environments for traditional training methods. This trend is likely to persist, and perhaps accelerate, as new weapon systems enter the inventory.

Given this situation, there is scope to envision a dual-station operating environment. In this environment, general-purpose forces would be garrisoned in the vicinity of urban and

¹⁵ Perloff, J. and M. Wachter (1979). "The New Jobs Tax Credit -An Evaluation of the 1977-78 Wage Subsidy Program." *American Economic Review* **69**(May): 173-179.

¹⁶ Bishop, J. H. and M. Montgomery (1993). "Does the Targeted Tax Credit Create Jobs at Subsidized Firms?" *Industrial Relations* **32**(Fall): 289-306.

suburban areas that afford robust labor demand for soldiers' spouses, robust housing markets, and a wide array of recreational and cultural activities. By imbedding their garrisons in well-developed markets and communities, the services could divest themselves of nonmilitary functions entailed in stationing forces in remote locations. These functions range from operating movie theaters and bowling alleys to building and maintaining housing stocks. In such urban and suburban garrisons, military personnel could employ simulations to master individual and team skills. At appropriate intervals, deployments to expansive areas in the West would sustain collective skills.

Policies Regarding Home Businesses

The military services currently regulate home businesses operated on military installations. While this regulation can preclude unsafe or unscrupulous practices, it can also impose significant barriers to entrepreneurial activity by spouses. For example, paragraph 2-4 of AR210-7 addresses licensing requirements for spouses seeking to operate businesses on Army installations. Whereas AR210-7 requires spouses to obtain a license from local municipal or state authorities, its provisions essentially require a spouse to secure a new license each time military requirements engender a PCS move. This situation can be quite burdensome for spouses in occupations such as interior design, cosmetology, barber, beautician, manicurist, massage therapy, bodywork and somatic therapy, athletic training, landscape architecture and speech therapy. Whereas these occupations are highly portable, they would seem to be ideally suited to the migratory nature of military service. Additionally, they fall within fields that are not well served by on post agencies under the license of which spouses could gain employment.

The financial difficulties of being a 1 income family while in the Army are tremendous. While he did not have a lot of debt, I had tremendous student loans that we had to pay and I could not work. Also my occupation requires that I have continuing education and stay state certified. We had to pay for my continuing education while I was not working so that I could stay employable. For us to stay in the Military we would have gone deeply into debt and I would probably have had to forsake my occupation. – former military wife

Since licensing requirements vary widely from state to state and city to city, the requirement to secure a local license can entail significant costs in terms of testing, additional training to satisfy local requirements, and lost wages pending licensure. Whereas occupations such as insurance sales would continue to be covered under separate regulatory provisions, licensure of home businesses for occupations such as those identified above could be accomplished by simply requiring evidence of prior licensing by any licensing authority. As many locales appear to require that the practitioner operate their business within the confines of the licensing jurisdiction in order to renew their license, the services could avoid a requirement for spouses to keep state or local licenses current in order to operate a business on a military installation. Alternatively, whereas the number of occupations requiring licensure continues to grow, the services could seek special status for spouses of military personnel so that their credentials enjoy national standing.

Conclusions

Wives of military personnel incur a substantial wage penalty and enjoy markedly reduced employment prospects when compared with their contemporaries married to civilians. Whereas this analysis controlled for household and spouse human capital attributes, these untoward outcomes can be attributed to factors endogenous to military service. An exploration of these endogenous military conditions does indicate the operation of a moderate earnings penalty due to migration. However, analysis of earnings and employment across military services finds that much of the wage penalty born by wives of military personnel can be attributed to local labor market conditions. The practical basis for this finding was suggested by Figure 13. That is, wives' wages are linked to local labor market conditions. Analysis of these conditions across installations demonstrates that the four military services occupy distinguishably different pieces of economic real estate. Specifically, the Army and in many instances the Air Force, operate in areas characterized by relatively poor labor market conditions. To a lesser extent this situation also affects wives of Marines and sailors. To redress this situation, the services can employ a mix of policy alternatives ranging from direct employment of service members' spouses to adjustment of operating practices and policies.¹⁷

¹⁷ A more complete treatment of the effects of military service on the earnings and employment outcomes of spouses of military personnel can be found in Wardynski, E.C. (2000). *Military Compensation in the Age of Two-Income Households, Adding Spouses' Earnings to the Compensation Policy Mix*. Santa Monica, Rand Corporation <http://www.rand.org/publications/RGSD/RGSD154/>