

CHAPTER 5

IMPROVING THE LABOR MARKET OPPORTUNITIES
AND OUTCOMES OF MILITARY WIVES

Policy Overview. As demonstrated in Chapter 4, spouses of military personnel incur a substantial wage penalty as compared with their contemporaries married to civilians. Moreover, this penalty increases with the civilian spouses' education level. Given the important contribution of spouse earnings to household income, these conditions impose a substantial burden on military households. Indeed, to make dual income military households whole through an increase in soldier pay, it would be necessary to increase regular military compensation by a substantial margin. In the case of soldiers with a college-educated spouse, this margin accounts for 12 percent of RMC.⁹³

Of course, increasing soldier pay so as to offset lost civilian spouse earnings would be a poor substitute for solutions that drive more directly to the basis for spouses' poor labor market outcomes. First, many civilian spouses of military personnel do not enter the labor market through personal choice. In this case, raising the pay of the military spouse would be inefficient and inequitable. Alternatively, such a policy would fail to account for intangible aspects of civilian spouse employment. Specifically, 88 percent of civilian spouses with

⁹³ During 1993 through 1999, the full time wage earnings of college educated wives comprised 43 percent of civilian household income. As demonstrated in Chapter 4, college educated military wives working full time incur a 23 percent earnings penalty. At the same time, civilian male head of household earnings for such wives exceeded military head of household earnings by only 6 percent. Thus, full time earnings for these wives of military personnel comprised 33 percent of military household earnings. The aforementioned 23 percent earnings penalty thus represents 12 percent of the military spouses' earnings.

full time earnings in the 1992 DoD Survey reported that these earnings contributed to their self-esteem. Similarly, 93 percent reported that full time employment contributed to their career aspirations. Finally, with regard to national output, policies should be directed toward providing an outlet for spouse labor commensurate with their stock of human capital. Simply put, soldier output and earnings are relatively invariant across military stations. However, such is not the case with the civilian spouses of military personnel. As we have seen, the relatively low earnings, and thus output, of these spouses can be attributed in large measure to local conditions. Thus, by virtue of military stationing practices these spouses create less national output, pay fewer taxes, and generate less wealth than would otherwise be the case. Therefore, policy should seek to address the conditions that engender this loss in national output and welfare. From these perspectives, a compensatory increase in RMC should not be the starting point in addressing the earnings and employment penalty incurred by spouses of military personnel.

With regard to the transient nature of military service, Chapter 4 analysis does indicate that migration impairs the labor market outcomes of spouses of military personnel. However, the effect of such migration is relatively moderate when compared with locality based effects. Moreover, as we saw in Chapter 3, in the case of the Army, stabilization policies are not the panacea suggested in the literature. Moreover, in light of Chapter 4 analysis, it would be difficult to argue that migration is the principal labor market challenge facing spouses of military personnel stationed at Fort Polk. Based upon the findings provided in Table 4.9, one could draw the same

conclusion with regard to assignments confronting 67 percent of Army households.

Given the relatively robust earnings and employment outcomes exhibited by spouses of sailors, it is apparent that the earnings and employment penalty confronting civilian spouses does not fall uniformly across services. Rather, Chapter 4 findings indicate that the locus of this penalty can be attributed to an identifiable set of Army and Air Force installations. This situation consequently suggests that policy remedies be developed so as to address local conditions that disproportionately impair the employment and earnings outcomes of spouses of soldiers and airmen.

Local Labor Conditions and Military Service Operating Considerations.

Given the considerable variance of spouse labor market outcomes exhibited across installations, one is immediately drawn to the topic of local labor market conditions. As touched upon in Chapter 4, the military has accumulated and retained its current stock of installations based upon a variety of non-economic criteria. The following cursory survey of installations provides a sense of the considerations that gave birth to but a few of the Army's installations.⁹⁴ This survey also highlights local employment opportunities identified by local employment referral services.

Fort Polk, in west central Louisiana, was established as a training center in the 1940s. This post is home to approximately 8,000 soldiers. Spouse job opportunities are so

⁹⁴ Office of the Secretary of Defense (2000). Standard Installation Topic Exchange Service, Defense Manpower Data Center. 2000.

limited that local employment services highlight the availability of commissary bagger positions.

Fort Leonard Wood, in the Missouri Ozarks was established shortly before World War II as a mobilization center. This post is home to approximately 4,000 soldiers and 7600 family members. Local private sector employment is extremely limited and consists of 270 positions in manufacturing, 650 in textile production, 850 in local education, 375 in retailing, 190 in local government, and 95 in services. Federal civil service employment includes 4,200 appropriated fund employees.

- **Fort Sill** was selected as a military encampment in 1869. Soldiers operating from this base defended settlers in Texas and Kansas from Indian raids. Fort Sill is home to the 10,000 soldiers and 36,000 family members of the Artillery Center and III Corps Artillery. Local employment referral services rate employment opportunities as good for food service workers, nurses and substitute teachers to poor for secretaries, administrative assistants, and state and federal employment. Fort Sill also employs over 5,800 federal civil servants in appropriated fund positions.

I leave it to the reader to contrast the employment opportunities presented above with those available on installations such as Naval Station San Diego and Naval Station Norfolk in urban and suburban areas.

Of course, it is important to note that the operating environment found within the Army serves to skew that service to remote locations. Training for land warfare requires vast expanses of land for maneuver areas and ranges. For example Fort Leonard Wood encompasses 98 square miles of the Ozarks while Fort Bliss encompasses approximately 1,700 square miles, a land area larger than the state of Rhode Island. In contrast, considerations such as good ship overhaul and repair facilities dominate Navy stationing practices. Indeed, with naval forces, operational training is accomplished at sea and well-developed port facilities are required to support fleet operations. Thus, it is not surprising to find major naval installations in centers of trade,

commerce, and industry such as Seattle, San Diego, and Newport News, Virginia.

The Federal Employment Earnings Premium. Heretofore, the literature has addressed low earnings among spouses of military personnel as a problem of migration. Given this approach, and the fairly uniform rates of migration exhibited across services⁹⁵, the issue of low spouse earnings has been addressed rather generically as a problem endemic to military service. However, it is now clear that the spouse earnings penalty entailed in military service falls disproportionately on the spouses of soldiers and airmen located on a set of readily identifiable installations. Thus, the problem at hand becomes one of devising policies that increase the employment and earnings opportunities available to these civilian spouses. In this regard, federal civil service employment policies are a logical point of departure. Therefore, I will explore increased Department of the Army employment of spouses as a model for crafting compensatory employment policies within the Department of Defense.

Department of the Army Civil Service Employment. Department of the Army civil service employment consists of appropriated and non-appropriated fund positions. As suggested by its title, appropriated fund positions are paid for with funds appropriated by Congress for

⁹⁵ Defense Manpower Data Center (1993). 1992 DoD Surveys of Officers and Enlisted Personnel and Military Spouses. Arlington, Virginia, Department of Defense.

Service	Mean Number of Moves	Standard Error
Army	2.829	.055
Air Force	2.490	.040
Navy	2.407	.043
Marines	2.140	.050

operation of the Army. In contrast, non-appropriated fund positions draw their resources from entities such as the Armed Forces Exchange System or morale support activities that charge military families for their services. For a variety of considerations, the analysis that follows will focus on appropriated fund positions. These jobs entail substantially higher wages and career opportunities. They are also far more numerous at major troop installations than are non-appropriated positions.⁹⁶

As of 20 September 1999, the Army employed 203,095 civilian personnel in appropriated fund positions. Of these employees, 139,330 were collocated on major installations with substantial populations of active component soldiers. Of this considerable population of civilian employees, only 8,800, or 6 percent, were spouses of soldiers. Therefore, the potential exists to considerably expand Army employment of soldiers' spouses.

By way of assessing the efficacy of such a policy, I build upon my Chapter 4 analysis of 1992 DoD Survey data. Specifically, I now incorporate a federal employment control variable into my spouse earnings function. This variable, *Full Time Federal Employment*, is coded 'one' for spouses who reported in the 1992 DoD Survey that they were full time federal employees. For spouses with full time employment outside the federal sector, this variable is coded 'zero'. In this way, I control for the earnings benefit accruing from employment in the federal civil service.

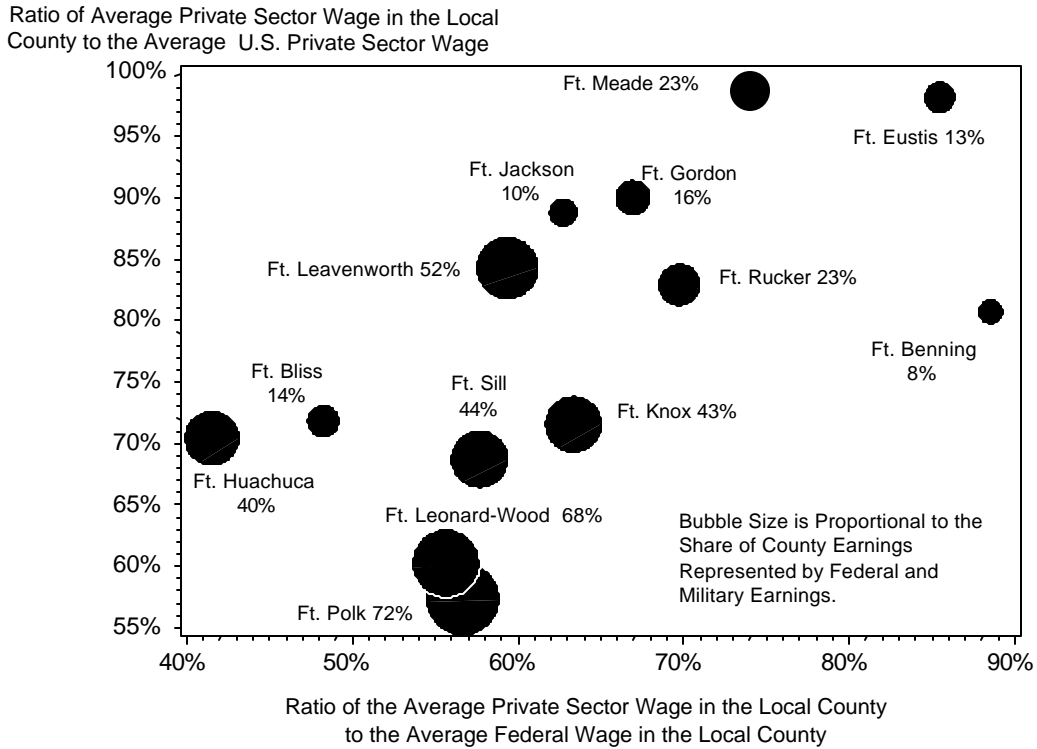
As indicated in Table 5.1 at the end of this chapter, spouses with full time federal civil service employment garner a substantial wage premium over other wives with full time earnings. Moreover, by controlling for installation specific effects, and military service affiliation (Army, Navy, Air Force, and Marines), the benefit of such federal employment to spouses of soldiers and airmen is striking. Specifically, soldiers' spouses who are employed full time in the federal civil service earn 18 percent more than other Army spouses with full time wage earnings. Whereas my regression controls for other relevant variables, this suggests that, on average, wages garnered by soldiers' spouses in federal employment are substantially higher than those earned by non-federal workers. Hence, by this measure, affording soldiers' spouses greater entrée to federal employment would close much of the wage penalty exhibited among these spouses.

Figures 5.1 and 5.2 below illustrate the benefits of federal employment from a local perspective. By way of orientation, the horizontal axis indicates the ratio of the average private sector wage in the local county at selected installations to the average federal wage in that county. The vertical axis indicates the ratio of local average private sector wages to the average private sector wage for the United States as a whole. Bubbles on Figure 5.1 indicate posts under the control of the Army Training and Doctrine Command (the production system), while those on Figure 5.2 indicate posts under the

⁹⁶ For example, at the Army's most highly populated post, Fort Bragg, there are 8,700 appropriated and 932 non-appropriated fund positions.

command of Army Forces Command (the combat system). 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 (Figure 5.1), the average private sector wage is 40 percent of the average federal wage and the average private sector wage is 70 percent of the national average. Additionally, federal civilian and military wages account for 40 percent of all wages in the local county.

Figure 5.1, Ratio of the Average Local Private Sector Wage to the U.S. Average Wage and the Ratio of the Average Local Private Sector Wage to the Average Local Federal Wage in the Vicinity of Major Army TRADOC Posts
USA Counties 1992

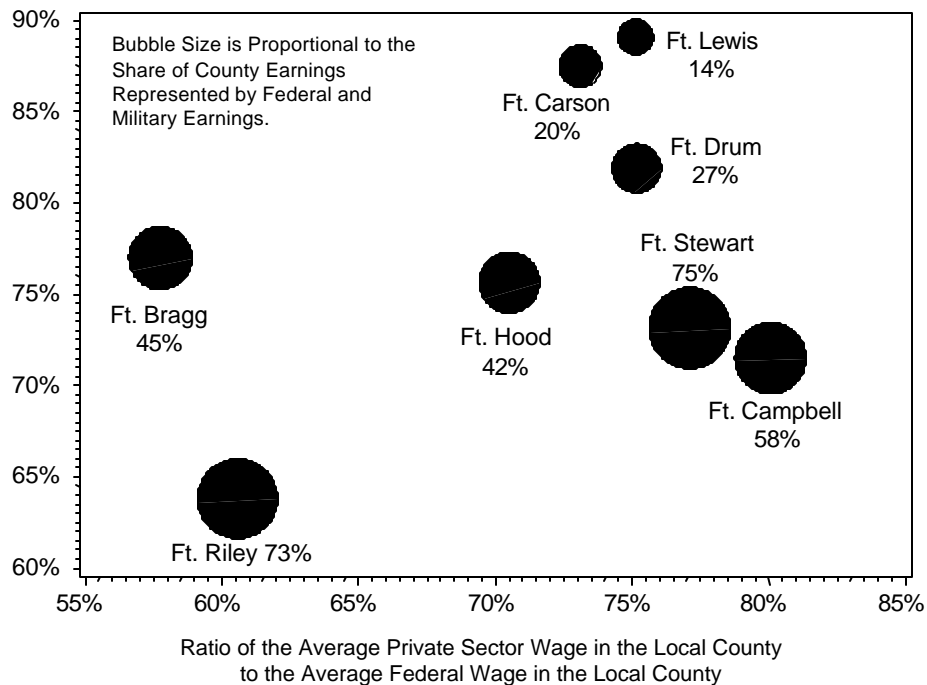


Thus, on average, by moving from private sector employment, to federal employment, spouses of soldiers at Fort Huachuca could anticipate a substantial increase in earnings. Moreover, reflection on Figures 5.1 and 5.2 suggests that spouses in areas characterized by relatively low average private sector wages (vertical axis) would benefit most from

federal employment. The basis for this situation lies within the vagaries 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 the most lucrative compensation. Also, federal employment provides members of Congress a means to bring relatively high wage jobs into their home districts.

Figure 5.2, Ratio of the Average Local Private Sector Wage to the U.S. Average Wage and the Ratio of the Average Local Private Sector Wage to the Average Local Federal Wage in the Vicinity of Major Army FORSCOM Posts
USA Counties 1992

Ratio of Average Private Sector Wage in the Local County to the Average U.S. Private Sector Wage



This situation, of course, suggests that policies that have the effect of reducing federal employment opportunities among local residents will entail sensitive political considerations. Finally, by way of closing the analytic loop, many of those posts exhibiting the largest

earnings penalty in Table 5.1 comport with the pattern illustrated in Figures 5.1 and 5.2 in terms of relative earnings privation.

Before moving to the topic of policy feasibility, it is important to address the potential that the poor earnings outcomes exhibited among spouses of military personnel accrue from unmeasured factors endogenous to these spouses. The first of these factors ensues from the potential that spouses of military personnel are somehow different and self select into the military lifestyle and its attendant labor market conditions due to their unique nature. The second hypothesis is a variant of the first and proceeds upon the assumption that most military personnel marry at their current installation and thus, their civilian spouses' work ethic and earnings expectations reflect local labor market norms.

By way of addressing the first factor, my augmented earnings function (Table 5.1) incorporates a control variable, *Married While in Mil Service*, to indicate whether a couple married before military service or after the military spouse was already on active duty. Since the parameter estimate for this control variable is quite small, and the standard error is quite large, one can rule out practical or statistical significance. This suggests that spouses who marry civilians who subsequently enter a military service exhibit earnings that are indistinguishable from those who marry personnel already serving on active duty. This would tend to rule out the potential that spouses of military personnel earn less due to some unseen attribute that draws them to uniformed mates.

To address the second concern, my augmented earnings function includes a control variable, *Married at the Current Post*. As indicated in Figure 5.1, this parameter estimate is also insignificant from a policy and statistical perspective. Thus, spouses who married their military mate before arriving at their installation of assignment in 1991 exhibited earnings that were indistinguishable from those who married their military mate at the duty installation from whence they reported their earnings in 1992. Thus, by these measures, we can reject the foregoing hypotheses.

Increasing Federal Employment of Soldiers' Spouses. Unlike private sector employment, federal employment is governed by regulations and procedures that present substantial barriers to entry. These procedures are set forth in Title 5 of the Code of Federal Regulations (5 CFR). Federal civil service consists of the competitive service that includes 80 percent of federal employees and the excepted service that includes the remainder of federal employees. Whereas the excepted service includes employees with highly specialized skills or who occupy policy-making positions, most spouses would only be eligible for appointment to competitive service positions. Moreover, the vast majority of the 139,000 appropriated positions collocated with large troop populations fall within the competitive service.

In order to secure federal employment, applicants must be referred to appointing authorities on a referral list. In order to appear on a referral list, an applicant must receive at least 70 points on a 100-point scale that equates applicant qualifications with job requirements. Additionally, certain candidates obtain employment

preferences such that they must be hired from a referral list. These candidates include noncompetitive applicants, Veterans Readjustment Appointments, appointments of 30% or more disabled veterans, noncompetitive transfers, placements to correct equal employment opportunity deficiencies, handicapped placements, and placements of persons returning from overseas tours of duty.

Given this situation, spouses face considerable difficulty in garnering sufficient points to appear at the top of a referral list. Consequently, since appointing officials are required to fill vacancies from the top candidates on a referral list, spouses face considerable difficulty in securing appointments. Moreover, lists are compiled for specific employment openings. Consequently, one cannot rise to the top of a referral list through longevity in an applicant queue. Rather, to circumvent this situation, a spouse must have a noncompetitive appointment status. Such status is available to a spouse who has been employed for 52 weeks⁹⁷ as a federal civil servant within the previous three years. Of course, this suggests a bit of a catch-22 in that one must have had federal employment to overcome the barriers to entry into federal civil service.

Partial relief for the foregoing situation is afforded by Executive Order 12721. Specifically, E.O. 12721 requires the Army (and other services) to provide priority employment to civilian spouses who are authorized to accompany their military spouse during overseas

⁹⁷ This can be waived to 26 weeks for spouses of military personnel who secured federal employment overseas and who are returned to the United States on military orders before completing 52 weeks service (5 CFR 315.608c)

assignments. This exception to 5 CFR yields substantially higher spouse employment overseas than in the United States. For example, spouses of soldiers occupy 23 percent of the approximately 13,000 appropriated fund positions in Europe. In contrast, spouses of soldiers comprise only 4 percent of appropriated fund positions on major Army installations in the United States.

Unfortunately, as suggested by the low rate of federal spouse employment in the U.S., the operation of E.O. 12721 in terms of enhancing spouse entrée to federal employment upon return to the United States is far from complete. 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 other employment preferences. This is due to the fact that noncompetitive referral lists are issued simultaneously with the competitive referral lists,

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.⁹⁸

Where local labor markets are quite thin, these caveats tend to be less important in terms of barring spouse accession to appropriated fund employment. For example, at Fort Irwin in the Mojave Desert, spouses comprise 16 percent of appropriated fund employees. In contrast they are only 1 percent of such employees at Redstone Arsenal

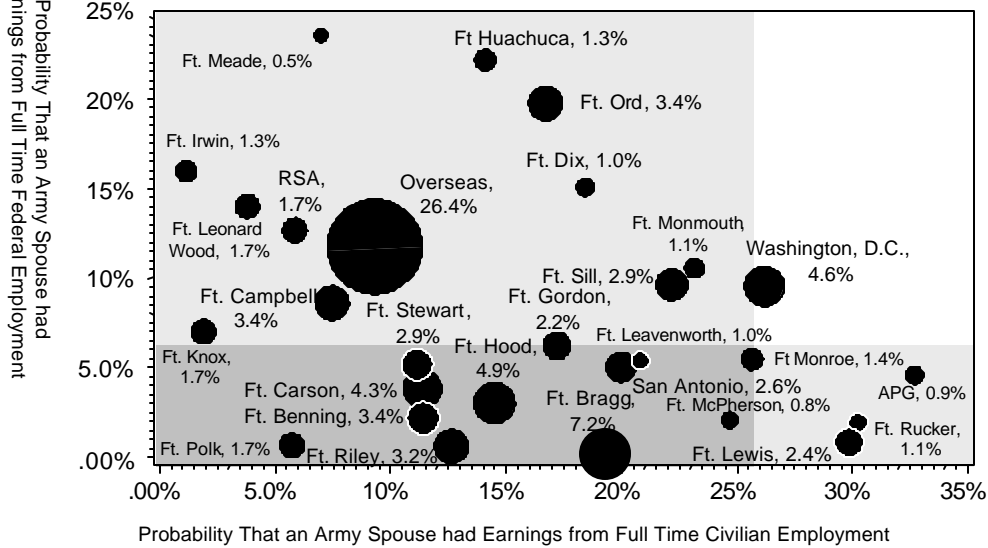
in Huntsville, Alabama. Moreover, the limited efficacy of military family member hiring preference can be seen when one reflects upon the fact that only 1,980 spouses of active duty soldiers now employed by the Army were selected while using this preference program.

A New Spouse Hiring Authority. In light of the foregoing, it is clear that a new hiring authority will be required if the Army desires to improve the earnings prospects of soldiers' spouses through appropriated fund employment. So as to ensure adequate positions are available for spouses of active duty personnel, this authority should provide employment only so long as the military spouse remains on active duty. Such a policy would also raise exit costs for soldiers contemplating separation from the Army and thereby contribute to soldier retention. So as to avoid creating perverse incentives for family separation, this authority should also apply where a spouse is collocated with his or her military mate. In terms of implementation, this authority could be employed on a test basis at those installations exhibiting the greatest earnings and employment penalty as highlighted in Figures 4.6 and 5.3 (installations within dark gray shaded areas).

⁹⁸ Office of Personnel Management (1999). Title 5 Code of Federal Regulations, Administrative Personnel. Washington, D.C., U.S. Government Printing Office.

Figure 5.3, 1991 Probability that the Average Army Spouse had Full Time Federal or Private Sector Employment by Post in 1991

Source: 1992 DoD Survey of Officers, Enlisted Personnel and Spouses & USA Counties 1998



Army Benefits from Spouse Employment. Aside from the obvious benefits to Army households, appropriated fund employment of soldiers' spouses would 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 Army offers subsidized health benefits to non-temporary employees under the Federal Employees Health Benefit Plan (FEHBP). Currently, the Army cost share of this benefit is \$2,529 per enrolled employee.⁹⁹ Among 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

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

Army civil servants avail themselves of this benefit.¹⁰⁰ 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 at least \$2,053 in expected benefits savings per spouse employed. Additionally, since under 5 CFR employment is only offered to fully qualified applicants, there would be no incremental training cost associated with such a strategy. Moreover, there is substantive reason to expect that spouses of soldiers embody skills that are fully amenable to Army requirements. Recall that soldiers' spouses occupy 23 percent of Army civilian positions in Europe.¹⁰¹ 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 the rates of Army spouse employment in the U.S. can rise to such levels from their current average of 4 percent.

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

¹⁰⁰ 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.

¹⁰¹ Department of the Army (1999). Civilian Personnel Master File, Headquarters Army Civilian Personnel System, . 1999.

\$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 zero-sum games. That is, the number of positions available in Army civil service is relatively fixed. Therefore, each spouse of a soldier who joins the federal payroll must come at the expense of federal employment opportunities available to civilians residing in the vicinity of Army posts. Thus, spouse employment policies may lead to civilian unemployment or underemployment in the vicinity of some posts during a period of labor market adjustment. Nevertheless, such a circumstance would merely shift the burden of such unemployment or underemployment from military households to civilian households. Importantly, since civilian households are free to relocate to more lucrative job markets, this burden should be transitory. In contrast, spouses of soldiers 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. Thus, affording spouses of soldiers enhanced labor market opportunities through enhanced access to federal employment is welfare enhancing from a national perspective.

Implementing a Spouse Hiring Authority. It is possible to craft federal employment practices so as to minimize the cost of a spouse hiring authority on the existing Army civilian workforce. That is,

rather than separating existing workers, the Army could employ a policy of replacement through attrition. Thus, soldiers' spouses could be added to the Army payroll as existing workers retire or leave federal employment. Reference to Figure 5.4 suggests that the Army is approaching an ideal time to implement such a policy. As evidenced by the skewed age distribution of Army civil servants presented in Figure 5.4, 15 percent of Army civilian employees will become retirement eligible over the next five years. This represents a potential demand for 19,000 spouses of soldiers. Of course, in addition to retirements, Army civil service experiences turnover among the non-retirement eligible population.

Figure 5.4, Age Distribution of Department of the Army Appropriated Fund Civilian Employees Employed at Army Installations with Large Soldier Populations
Source: Army Civilian Master File



During the period from September 1998 to September 1999, this turnover amounted to approximately 6 percent of the Army appropriated fund workforce. At this rate, the potential exists to fill some 7,000 such vacancies with soldiers' spouses each year.

AREAS FOR FURTHER POLICY RESEARCH

Contracting Policy. In addition to employing large numbers of civilians as civil servants, the Army contracts 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 such as the New Jobs Tax Credit¹⁰² and Targeted Jobs Tax Credit¹⁰³, there is scope to expand contractor employment of soldiers' spouses in such competitive bidding situations.

As a matter of policy, the Army could afford service contractors an employment subsidy for each wife or husband of a soldier they employ after winning a competitive bid. Such a policy should have the effect of increasing the private sector employment of soldiers' spouses at little or no cost to the Army. To the extent that spouses of soldiers are as productive as local civilian labor, there should be little to no incremental cost to contractors associated with employing soldiers' 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 cost would return to the Army in the

¹⁰² 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.

¹⁰³ Bishop, J. H. and M. Montgomery (1993). "Does the Targeted Tax Credit Create Jobs at Subsidized Firms?" Industrial Relations 32(Fall): 289-306.

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. By way of exploring the efficacy of such a policy, the Army should implement a test project at posts such as Fort Polk that are characterized by poor spouse earnings and employment outcomes.

Technology Innovations. As addressed in Chapter 4 analysis, the earnings and employment penalty confronting spouses of soldiers and airmen is largely derivative of local labor market conditions. Thus, the forgoing policy alternatives are designed to provide these spouses greater entrée to local federal and private sector employment. However, due to developments presented by new economy business relationships and technology, the tools are now at hand to greatly expand spouse access to regional and national labor demand.

Drawing upon the model of firms such as Commerce One and Ariba Inc., the Army could launch a pilot project to leverage the Internet as a vehicle to broker the labor of soldiers' spouses using reverse auctions. Given the shortage of skilled labor now evidenced in the economy, excess labor demand could be matched to excess soldier 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 external markets, the Army should explore the basis for retaining installations in remote areas. Heretofore, vast expanses of land to support maneuver and weapons training have governed Army installation policy. However, reference to the dramatic increase in weapons range and speed exhibited since World War II suggests that relatively few posts will support training with the next generation of weapons. Indeed, analysis recently completed at the Rand Corporation has concluded that only two Army posts will be able to support training for a maneuver battalion by 2025.¹⁰⁴ Additionally, the prohibitive cost of maneuver and weapons training has led to a marked substitution of virtual training environments for traditional training methods. Again, this trend is likely to persist, and perhaps accelerate, as new weapon systems enter the inventory.

Given this situation, there is ample basis to envision an alternate-operating environment. In this environment, the Army would garrison forces in the vicinity of urban and suburban areas that afford strong labor demand for soldiers' spouses, robust housing markets, and a wide array of recreational and cultural activities. Thus, by imbedding its garrisons in well-developed markets and local communities, the Army could divest itself 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, soldiers could master individual and team training using simulators and virtual environments. In the case of unit training, soldiers could deploy

¹⁰⁴ Hix, M. (2000). Installations for 2025. Santa Monica, CA, Rand Corporation.

periodically to large training areas located at installations such as Fort Bliss and White Sands Missile Range.

Summing Up. In this dissertation, I have shown that the civilian spouses of military personnel make an important contribution to household income. However, the earnings of these spouses are systemically lower than the earnings of their contemporaries in civilian households. I have demonstrated that this situation is only partially due to military migration. Rather, in the Army and Air Force, local conditions play the predominant role in shaping the employment and earnings outcomes of civilian spouses of soldiers and airmen. In light of this situation, I have developed several options to redress the employment and earnings penalty exhibited among these spouses. More importantly, by moving beyond the construct of Regular Military Compensation to a holistic view of military household earnings, I have provided a framework for bringing civilian spouse earnings into the policy mix. In light of today's competitive labor market and the rise of dual income households, this framework should shape analysis and policies directed toward attracting and retaining high quality soldiers, sailors, airmen, and Marines.

Table 5.1, Percent Change in the 1991 Annual Earnings of Military Spouses
Employed Full Time, by Military Installation, (Omitted Installation: San Diego)

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	132	54317	411.48911	46.00	<.0001
Error	2531	22639	8.94462		
Corrected Total	2663	76955			
Root MSE	2.99076	R-Square	0.7058		
Dependent Mean	9.57569	Adj R-Sq	0.6905		
Coeff Var	31.23280				

Level of Significance: *=.10, **=.05, ***=.01

Parameter	Estimate	Std Err	t Value	Prob > t	Sig	Mean	Percent	Cum %
Log of Spouses' 1991 Annual Full Time Civ Employment, 1=Yes, 0=No	9.818	.	.
Log of Number of Weeks Worked Last Year	.9116	.0189	48.2	.000	***	3.748	.	.
Civ Spouse is Caucasian, 1=Yes, 0=No	.0674	.0164	4.10	.000	***	0.811	.	.
Mil Spouse Gender: 1=Male, 0=Female	-.182	.0240	-7.6	.000	***	0.718	.	.
Mil Spouse Grade: 1=Officer, 0=Enlisted	.1518	.0206	7.38	.000	***	0.703	.	.
Log of Years of Active Federal Service	.0912	.0156	5.83	.000	***	2.195	.	.
Married While in Mil Service, 1=Yes, 0=No	.0109	.0238	.460	.646		0.787	.	.
Married at Current Post, 1=Yes, 0=No	-.022	.0231	-.94	.346		0.191	.	.
Some College, 1=Yes, 0=No	.1103	.0180	6.13	.000	***	0.307	.	.
Undergraduate Degree, 1=Yes, 0=No	.3661	.0241	15.2	.000	***	0.244	.	.
Post Graduate Work, 1=Yes, 0=No	.6250	.0256	24.4	.000	***	0.271	.	.
Imputed Years of Experience	.0023	.0039	.592	.554		13.78	.	.
Year of Experience Squared	.0001	.0001	.959	.337		250.6	.	.
Number of Months in Current Job	.0034	.0003	10.2	.000	***	22.11	.	.
Missing Months of Tenure, 1=Yes, 0=No	-.296	.1779	-1.7	.096	*	0.002	.	.
Log of Length of Marriage in Years	-.013	.0139	-.90	.366		1.768	.	.
Children Under Age 6, 1=Yes, 0=No	.0415	.0181	2.29	.022	**	0.183	.	.
Children Under Age 14, 1=Yes, 0=No	-.024	.0177	-1.4	.176		0.284	.	.
Army Spouse, Civ Spouse Fed Worker, 1=Yes	.1838	.0260	7.06	.000	***	0.075	.	.
Navy Spouse, Civ Spouse Fed Worker, 1=Yes	.0914	.0351	2.61	.009	***	0.061	.	.
USAF Spouse, Civ Spouse Fed Worker, 1=Yes	.1434	.0293	4.89	.000	***	0.081	.	.
USMC Spouse, Civ Spouse Fed Worker, 1=Yes	-.001	.0680	-.01	.993		0.033	.	.
Number of Permanent Changes of Station	-.021	.0040	-5.2	.000	***	3.135	.	.
Minot AFB, ND	-.775	.1492	-5.2	.000	***	.	.	.
Ft Wainwright, AK	-.656	.1488	-4.4	.000	***	0.03	0.03	
Cannon AFB/Clovis, NM	-.635	.0967	-6.6	.000	***	.	.	.
Fort Rucker, AL	-.631	.2236	-2.8	.005	***	1.07	1.10	
Maxwell AFB, Montgomery, AL	-.560	.1011	-5.5	.000	***	0.23	1.33	
Fort Polk, LA	-.541	.1480	-3.7	.000	***	1.72	3.04	
Sheppard AFB/Wichita Falls, TX	-.538	.1273	-4.2	.000	***	.	.	.
Wurstsmit AFB, MI	-.531	.2457	-2.2	.031	**	.	.	.
Fort Riley, KS	-.516	.0824	-6.3	.000	***	3.11	6.16	
Fort Sill/Lawton, OK	-.500	.0664	-7.5	.000	***	2.87	9.03	
Fort Dix/McGuire AFB/Lakehurst, NJ	-.461	.0804	-5.7	.000	***	0.95	9.97	
Gulfport, MS	-.440	.0969	-4.5	.000	***	.	.	.
Panama City, FL	-.430	.1106	-3.9	.000	***	.	.	.
Fort Bliss/El Paso, TX	-.416	.1095	-3.8	.000	***	1.67	11.65	

Table 5.1, Continued

Parameter	Estimate	Err	Value	Probt	Sig	Mean	Percent	Cum %
Offutt AFB/Omaha, NE	-.400	.0900	-4.4	.000	***	0.05	11.70	
Riverside, CA	-.394	.1397	-2.8	.005	***	.	.	
Groton/New London, CT	-.386	.0900	-4.3	.000	***	.	.	
Whidbey Island, WA	-.385	.1419	-2.7	.007	***	.	.	
Fort Hood, TX	-.370	.0751	-4.9	.000	***	4.87	16.57	
Twenty Nine Palms MCB, CA	-.369	.1277	-2.9	.004	***	.	.	
Fort McClellan/Anniston, AL	-.365	.0930	-3.9	.000	***	1.32	17.88	
Robins AFB, GA	-.365	.0846	-4.3	.000	***	0.02	17.90	
Malmstrom AFB, MT	-.351	.1131	-3.1	.002	***	.	.	
Grand Forks, ND	-.348	.1037	-3.4	.001	***	.	.	
Ft Carson/USAF Colorado Springs, CO	-.343	.0645	-5.3	.000	***	4.28	22.18	
Eglin AFB, FL	-.321	.0742	-4.3	.000	***	0.03	22.20	
Dover AFB, DE	-.315	.1057	-3.0	.003	***	.	.	
Newport, RI	-.304	.1492	-2.0	.042	**	.	.	
Fort Bragg/Pope AFB, NC	-.289	.0595	-4.9	.000	***	7.12	29.32	
Camp Lejeune, NC	-.285	.0652	-4.4	.000	***	.	.	
Spokane, WA	-.282	.1480	-1.9	.057	*	.	.	
Griffiss AFB/Rome, NY	-.282	.0973	-2.9	.004	***	.	.	
Phoenix, AZ	-.274	.0876	-3.1	.002	***	.	.	
Cherry Point MCAS, NC	-.262	.1022	-2.6	.010	**	.	.	
Edwards AFB, CA	-.260	.0935	-2.8	.005	***	.	.	
Great Lakes NAVTRACEN, IL	-.260	.1097	-2.4	.018	**	0.29	29.62	
Lackland AFB/Kelly AFB/San Antonio, TX	-.260	.0542	-4.8	.000	***	2.52	32.14	
Fort Ord/Naval PostGrad Sch/Monterey, CA	-.240	.0642	-3.7	.000	***	3.34	35.48	
Little Rock, AR	-.235	.0804	-2.9	.003	***	0.20	35.68	
Davis-Monthan AFB, AZ	-.229	.1047	-2.2	.029	**	.	.	
Brunswick, ME	-.229	.1150	-2.0	.047	**	.	.	
Army Overseas	-.222	.0441	-5.0	.000	***	26.0	61.68	
Hampton/Newport News, VA	-.204	.0603	-3.4	.001	***	1.35	63.03	
Patrick AFB, FL	-.202	.1058	-1.9	.057	*	0.01	63.05	
Denver, CO	-.200	.0961	-2.1	.037	**	0.36	63.40	
Jacksonville, FL	-.187	.0615	-3.0	.002	***	0.02	63.42	
Air Force Overseas	-.186	.0474	-3.9	.000	***	.	.	
Fort Lewis/McCord AFB/Tacoma, WA	-.182	.0604	-3.0	.003	***	2.42	65.84	
Seymour Johnson AFB, NC	-.181	.0961	-1.9	.060	*	.	.	
Fort Stewart, GA	-.165	.0903	-1.8	.067	*	2.91	68.74	
Fort Gordon, GA	-.162	.0729	-2.2	.027	**	2.17	70.91	
Hawaii	-.122	.0556	-2.2	.028	**	0.21	71.12	
Navy Overseas	-.112	.0437	-2.6	.010	**	.	.	
Fort Leonard Wood, MD	.1767	.0983	1.80	.072	*	1.67	72.80	
San Bernadino, CA	.2052	.1240	1.65	.098	*	.	.	
Bremerton, WA	.2569	.1389	1.85	.065	*	.	.	
Oakland, CA	.3586	.1500	2.39	.017	**	.	.	
Carlisle Barracks, PA	.3822	.2317	1.65	.099	*	0.21	73.01	
Fort Drum/Watertown, NY	-.418	.2971	-1.4	.159	.	4.18	77.19	
Annapolis, MD	-.336	.2386	-1.4	.159	.	.	.	
Vandenberg AFB, CA	-.324	.3082	-1.1	.293	.	.	.	
New Orleans, LA	-.303	.2789	-1.1	.277	.	0.01	77.20	
Shaw AFB/Sumter, SC	-.207	.1359	-1.5	.128	.	.	.	
Barksdale AFB/Shreveport, LA	-.186	.1246	-1.5	.136	.	.	.	
Fort Leavenworth, KS	-.167	.1101	-1.5	.129	.	0.96	78.15	
Fort Monmouth/Earls NWS, NJ	-.164	.1081	-1.5	.128	.	1.10	79.26	
Orlando, FL	-.149	.2445	-.61	.542	.	0.01	79.27	
Scott AFB, IL	-.148	.1087	-1.4	.172	.	0.04	79.31	
Fort Irwin/Barstow, CA	-.138	.1140	-1.2	.227	.	1.28	80.59	
Santa Clara County, CA	-.131	.1699	-.77	.440	.	.	.	
Sacramento, CA	-.131	.1138	-1.2	.250	.	0.31	80.90	
Nellis AFB/Las Vegas, NV	-.119	.1000	-1.2	.235	.	.	.	

Table 5.1, Continued

Parameter	Estimate	Err Value	Probt	Sig	Mean	Percent	Cum %
Patuxent River, MD	-.116	.0755	-1.5	.124	.	.	.
Charleston, SC	-.113	.0744	-1.5	.130	.	.	.
Fort McPherson/Atlanta, GA	-.107	.1213	-.88	.376	.	0.79	81.69
Carswell AFB/Fort Worth, TX	-.106	.0855	-1.2	.214	.	.	.
Fort G. G. Meade, MD	-.103	.0921	-1.1	.263	.	0.53	82.22
Pensacola, FL	-.098	.0818	-1.2	.232	.	0.04	82.27
Beaufort/Parris Island, SC	-.096	.1043	-.92	.357	.	.	.
Norfolk/Portsmouth, VA	-.090	.0560	-1.6	.109	.	0.28	82.55
Chanute AFB, IL	-.088	.1122	-.78	.433	.	.	.
Hill AFB/Ogden, UT	-.084	.0985	-.86	.392	.	0.11	82.66
Marines Overseas	-.082	.0668	-1.2	.222	.	.	.
Fort Knox, KY	-.079	.1296	-.61	.544	.	1.71	84.37
Wright- Patterson AFB, OH	-.077	.0813	-.95	.343	.	0.18	84.54
Quantico/Woodbridge, VA	-.066	.1052	-.63	.529	.	.	.
Castle AFB, CA	-.064	.1117	-.57	.566	.	.	.
Camp Pendleton, CA	-.057	.0627	-.91	.362	.	.	.
Corpus Christi, TX	-.055	.2098	-.26	.792	.	0.01	84.56
Travis AFB/Vallejo, CA	-.038	.0778	-.49	.621	.	.	.
Loring AFB, ME	-.028	.1677	-.16	.869	.	.	.
Washington, DC Metro Area	-.025	.0447	-.56	.578	.	4.59	89.14
Fort Huachuca, AZ	-.025	.0894	-.28	.781	.	1.30	90.45
Aberdeen Proving Grounds, MD	-.023	.1021	-.23	.818	.	0.88	91.32
Fort Benning, GA	-.014	.0840	-.17	.864	.	3.35	94.67
Kirtland AFB/Albuquerque, NM	-.010	.1009	-.10	.921	.	0.10	94.77
F. E. Warren AFB, Cheyenne, WY	-.009	.1058	-.09	.929	.	.	.
Redstone Arsenal/Huntsville, AL	-.002	.1131	-.02	.985	.	1.71	96.48
Fort Campbell, KY	.0085	.0814	.104	.917	.	3.36	99.84
Tinker AFB/Oklahoma CITY, OK	.0406	.0982	.413	.680	.	0.02	99.86
Ft Greely/Elmendorf AFB, AK	.0445	.0658	.676	.499	.	.	.
Ellsworth AFB/Rapid City, SD	.0497	.1332	.373	.709	.	.	.
Millington/Memphis, TN	.0773	.1071	.722	.471	.	0.03	99.89
Los Angeles, CA	.0853	.0653	1.31	.192	.	0.05	99.94
Tampa, FL	.1020	.1846	.552	.581	.	0.06	100.0
Dyess AFB/Abilene, TX	.1114	.1301	.856	.392	.	.	.
McConnell AFB/Wichita, KS	.1212	.1046	1.16	.247	.	.	.
Alabany, GA	.1304	.2761	.472	.637	.	.	.
Hanscomb AFB, MA	.2018	.2056	.982	.326	.	.	.