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Thrift Savings Plans: Effect on Savings and Tax Revenues

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Introduction and summary

The 9th Quadrennial Review of Military Compensation (QRMC) is reviewing ways to structure military compensation to improve military recruiting, retention, and manning. Retirement pay is a significant component of the current compensation package, and there is concern that the structure of these benefits is not competitive with that offered by the private sector. The current military retirement system is a defined benefit program, with some limited ability to participate in a thrift savings plan (TSP). In contrast, the private sector increasingly uses defined contribution plans, which give the employee an opportunity to manage at least part of the retirement plan benefits.

Expansion of the TSP component of military retirement benefits would potentially increase the attractiveness of military compensation. Given the sheer size of the military, however, several concerns have been raised about the implications of such a dramatic shift in compensation. At least four major questions have been asked—questions surrounding the level of service member participation, potential effects on total saving, implications for federal tax revenues, and the administrative costs associated with such a program.

In light of these concerns, this research memorandum summarizes both the theoretical and empirical literature devoted to these issues. The evidence suggests that participation and contribution rates are strongly related to the size of matching contributions made by the employer. In addition, surveys show that military personnel would increase participation in TSP if the government were willing to make matching contributions. Given the financial risk associated with these plans relative to insured, defined benefit plans, there is also evidence that financial education (preferably provided by the employer) increases employee saving and improves contribution allocation.

Although these savings incentive plans are designed to encourage increased retirement savings, the impact of these programs on total savings is unclear. The empirical evidence is split; estimates range

from no substantive increases to nearly a 100-percent increase in total savings. Overviews of this literature conclude that total savings does rise, but by less than the amount contributed to these savings plans.

One essential characteristic of these savings incentive plans is the ability of employees to make tax-deductible contributions. An obvious drawback, from the perspective of the Federal Government, is the potential loss in tax revenue. We find conflicting evidence, however, on the effect of these programs on national (both private and public) saving. Some research shows the potential for this immediate tax revenue loss to be made up over time by increases in corporate tax revenue; the magnitude and timing of these long-term increases depend strongly on the assumptions that are made. Regardless, the Federal Government has continued to offer these tax advantages to encourage private saving for retirement, and one can infer that the government views this potential loss in revenue as an acceptable cost in promoting less reliance on Social Security for retirement benefits.

Finally, the evidence suggests that the administrative costs for defined contribution plans are a small fraction of those associated with defined benefit plans. The primary differences in administrative costs are the high investment advisory and management fees of the defined benefit plan, as well as larger actuarial fees. However, it is not clear whether these high administrative costs apply to the defined benefit plan offered by the military. If the employer provides investor education for its employees, the costs of the defined contribution plan do increase, but with clear benefits for the employee.

The paper is organized into six sections. We begin with a description of the types of retirement benefits available in the private sector and note a trend away from the type of benefits offered by the military. The second section discusses the general characteristics of the thrift savings plans available in the private sector, and addresses the question of whether service members will participate in TSP. We review the literature on the effect of these savings incentives on overall private savings in the third section. The fourth section examines the literature on the impact of these incentive plans on national (private plus public) savings, and section five considers the administrative costs of these retirement savings programs. The last section presents conclusions.

Retirement benefits in the private sector

Private employer pension funds combined with Social Security represent the primary sources of retirement income in the private sector. According to a 1997 survey of medium and large establishments in private industry [1], about 80 percent of all full-time workers participated in at least one employer-sponsored pension plan. These plans typically can be categorized as either "defined benefit" or "defined contribution" plans.

Under a defined benefit plan, employers provide the employee some prespecified level of retirement benefits. A majority of these plans base pension benefits on the amount of service years and/or the employee's wage or salary. "Integrated" defined benefit plans also consider the employee's Social Security benefit when determining pension benefits. Private pension benefits are guaranteed or insured in part through the Pension Benefit Guarantee Corporation. The primary military retirement system is a defined benefit plan.

In contrast, under a defined contribution plan, employees and, in most cases, employers contribute to a fund that is then invested in some financial instrument. The level of the retirement benefit, then, is not prespecified, but depends on the rate of return of the financial instrument. These contributions are invested in a variety of financial instruments, including stocks, bonds, and money market funds. The distribution of contributions over the various instruments is at least in part under the control of the employee. Unlike the pension benefits from defined benefit plans, benefits from defined contribution plans are not insured.

A notable characteristic of defined contribution plans is that contributions are made from pretax earnings and placed into an individual's retirement account. These funds are then invested and are taxed only at distribution.

Examples of defined contribution plans include savings and thrift plans, profit sharing, employee stock ownership plans, and 401(k) plans. The characteristics of these plans vary by the provisions of the employee/employer matching contributions, the investment decisions, benefit distribution, vesting, and the ability to take early withdrawals or loans from the employer's contributions. Some provisions can be viewed as savings incentives that also affect employee turnover, work effort, and the timing of retirement. The greatest incentives for program participation are found in the plan vesting rules, employer matching rates, and retirement age rules.

According to [1], the private sector has made a general shift away from defined benefit to defined contribution plans. In particular, growth in 401(k) program participation in the 1990s was extraordinary. One can infer that this shift reflects the preferences of private-sector employees. While the uncertainty associated with financial markets increases the riskiness of the defined contribution plan, private-sector employees appear to prefer the potential for tremendous growth in retirement benefits over a defined benefit that is "safe." This trend in the private sector has caused many to question whether the military's defined retirement benefits are competitive with those offered in the private sector and reflect the preferences of military personnel.

Characteristics of thrift savings plans (TSPs)

A large and increasing percentage of private-sector employees participate in some form of a thrift savings plan (TSP). Under TSP, employees contribute a portion of earnings to a pension account that is, in most cases, matched by the employer. These contributions are then invested in a variety of financial instruments, including stocks, bonds, and money market funds. TSPs vary in the size of the employee contribution rates, employer matching contributions, and the available investment alternatives. Because TSP is currently available to military personnel, we describe some of these private-sector characteristics in more detail.

Employee contributions

Employees contribute some predetermined portion of pretax income into an account, up to a specified maximum amount. These contributions usually range between 5 and 20 percent of an individual's earnings. The most common maximum percentage contribution is 10, 12, 15, or 16 percent. Because these contributions are taken from pretax earnings, employees are restricted from early withdrawal without substantial tax penalties.

Employer matching contributions

Nearly 80 percent of participants in private-sector TSPs have employers that match all or part of the employee contribution. The modal employer match is 6 percent of employee pay, with most contributions at 6 percent or less. Reference [2] notes that employer matching contributions are typically less than employee contributions and that the size of the employer match has fallen over time.

There is strong evidence that suggests that employer matching rates affect both employee plan participation and contribution rates. Ref-

erence [3] uses panel data from the Internal Revenue Service to examine the impact of the employer matching rate on employee plan participation and contributions. The author finds that increases in the employer match rate are related to the plan participation rate. She calculates that employee contributions increase by more than 27 percent when the employer contribution increases from 0 to 50 percent of the employee contribution. However, she finds statistically significant decreases in employee contributions at higher employer contributions. She concludes that these results are consistent with "target saving" behavior by employees.

Reference [4] examines the participation of employees in 401(k) plans from 19 firms ranging in size from 700 to 10,000 employees. Plan characteristics varied considerably across the 19 firms. The authors find a statistically strong relationship between the employer's matching rate and both employee participation and contribution. Specifically, they estimate that an employee in a plan with a 100-percent match rate was 47 percent more likely to participate than an employee in a plan with a 25-percent matching rate.[1] Employee contribution rates were also strongly related to the employer's matching rate.

Reference [5] examines records on about 12,000 employees from a single medium-sized manufacturing firm between 1988 and 1991. During that time, the employer matching rate in the 401(k) plan exhibited extreme variation, changing from over 100 percent to zero. These changes were announced well before they took effect, so employees had time to make adjustments in their plan contributions. Contrary to the results in [3] and [4], [5] concludes that employee contributions were largely unchanged despite these fluctuations in the size of the employer match.

Investments

Both employee and employer contributions are invested in various financial instruments, such as stocks, bonds, and money market

1. None of the firms studied had a 0-percent matching rate.

funds. Depending on the provisions of the plan, the employee has some control over the distribution of the contributions over these instruments. Seventy-four percent of employees participating in savings and thrift plans can choose how to invest the employee contribution. Most plans have more than one choice of financial instrument, with the number of choices ranging from two to more than ten. The greatest percentage of employees face four choices. The most common are a common stock fund, long-term interest-bearing securities, company stock, and a diversified stock and bond fund. The employee generally has less control over the employer's contribution. Just over half (58 percent) of the employees are able to choose how to invest the employer portion of the pension contribution. Once again, most employees who can choose how to invest the employer contribution face four choices, with the largest percentage choosing common stock funds.

It is obvious that financial choices can involve a great deal of risk and, unlike those from a defined benefit plan, the benefits from these defined contribution plans are not insured. After reviewing the unusual allocation of their 401(k) contributions made by the employees of a medium-sized manufacturing firm, the authors of [5] and [6] question the financial judgment of employees. Reference [7] examines data from an annual household survey of about 1,000 individuals between the ages of 29 and 47 administered by Merrill Lynch, Inc., beginning in 1993. The author considers the decisions made by employees over contribution rates as well as the distribution of these contributions over the various financial instruments. Using the responses in the survey, he finds that households generally lack any strong financial skills and that they do not compensate for this lack of knowledge by obtaining professional financial advice.

The statistical analysis of reference [7] suggests that personal savings is associated with being more financially knowledgeable. In a regression that holds constant the person's marriage status, number of children, age, earnings, and formal education, the person's financial knowledge increases savings. Moreover, the availability of financial information *in the workplace* increases the person's savings rate and improves his/her financial decisions. Reference [7] concludes that most Americans are "unaware of their financial vulnerabilities, and

they lack the knowledge, sophistication, and/or authoritative guidance required to set them on the right track." This conclusion confirms the findings from previous studies suggesting the lack of financial sophistication of the American general population. Greater financial education, often offered in the workplace, helps to improve the savings rate as well as the portfolio decisions of the employees.

Will service members participate?

The 1999 *Survey of Active Duty Personnel* provides evidence of the relationship between the willingness of the government to match contributions and the service member's willingness to participate. Service members were asked about the likelihood (very likely, likely, neither likely or unlikely, unlikely, very unlikely) of their participation in TSP under three scenarios—no government matching, matching up to 5 percent of the service member's pay, and the ability to invest reenlistment or continuation bonus into the tax-deferred TSP fund.[2]

Figure 1 summarizes the service members' responses. As the figure indicates, only 7 percent of all service members were "very likely" to participate in TSP without some sort of government matching.[3] About 28 percent of service members, however, were "likely" or "very likely" to participate in this scenario. This is close to the degree of participation assumed by the Department of Defense, and is slightly larger than the actual participation rate in the Civil Service Retirement System (CSRS).

The survey evidence clearly indicates that the generosity of the TSP program affects the degree of program participation. If the government were to match the service member's contribution up to

2. The FY00 National Defense Authorization Act did not provide for any government matching. In FY01, the law was amended to allow the secretaries of each of the services to designate "critical military specialties" for matching contributions. Individuals in these specialties who agree to serve for at least 6 years become eligible for this government match.

3. Because respondents to the Active Duty Survey are not a random sample, all results are weighted using Defense Manpower Data Center (DMDC) weights.

5 percent of pay, the proportion who are "very likely" to participate rises from 7 to 35 percent. Similarly, if service members were allowed to invest reenlistment/continuation bonuses into TSP, almost 32 percent would be "very likely" to participate. In both of these scenarios, almost two-thirds of all service members would be "likely" or "very likely" to participate.

Figure 1. Likelihood of participation in TSP

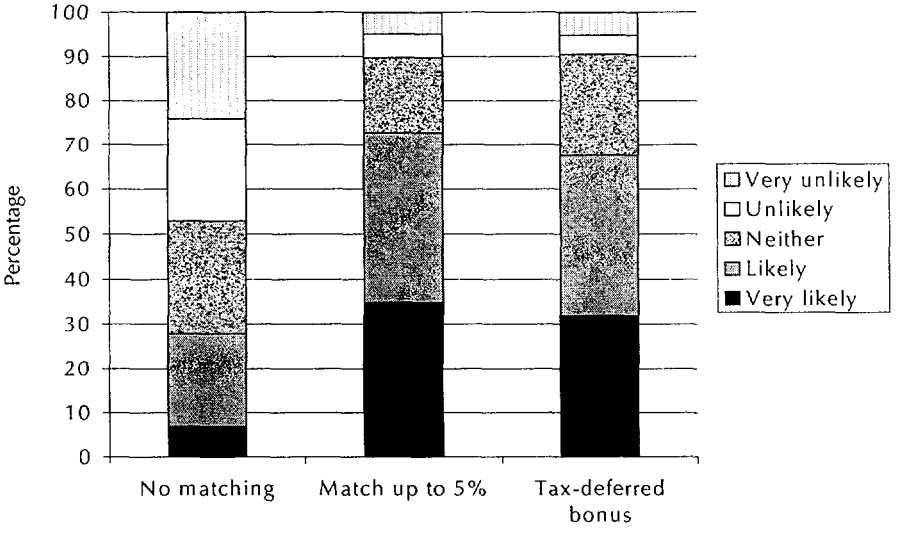
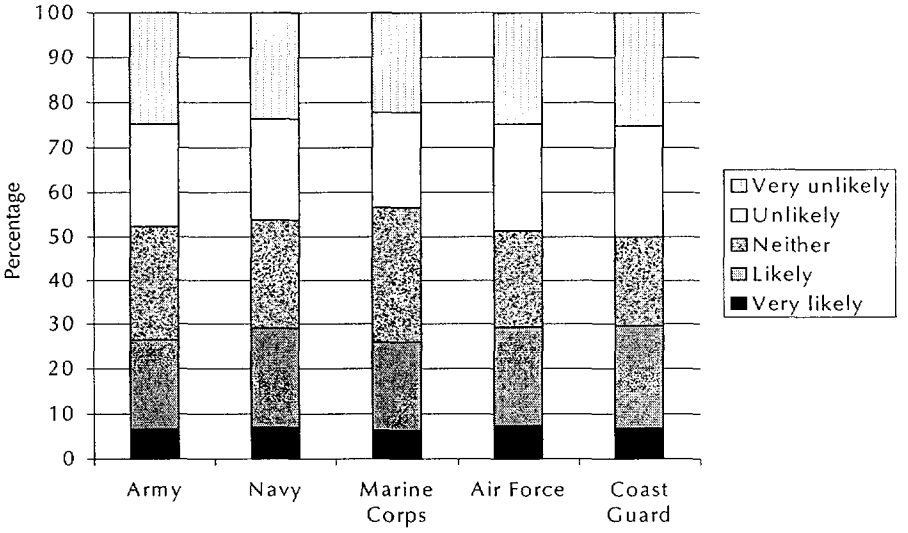


Figure 2 reflects the homogeneity of responses across the five services when asked about participation in an unmatched TSP. There is some variation from one service to the next, but these differences are minor. Similarly, there are only small differences by service when asked about participation if the government were to make matching contributions (not shown).

In general, the survey evidence for military personnel is consistent with the empirical evidence for private-sector employees. People are likely to participate in a defined contribution plan, such as TSP. The likelihood of participation, however, is strongly related to the willingness of the government to provide matching contributions, or even to the ability of the individual to invest earnings other than basic pay.

Figure 2. Likelihood of participation in unmatched TSP by service



It is also likely that participation is directly related to the performance of financial markets. The active duty survey was fielded at a time when financial markets were performing exceptionally well, and rates of growth in the value of financial assets were extraordinary. As these markets slow down, or even decline, we hypothesize that participation rates will be lower than those indicated at the time of this particular survey.

Effect of saving incentives on total saving

In response to the chronically low level of saving in the United States, Individual Retirement Accounts (IRAs) and 401(k)s were developed as a way to encourage people to save for retirement. Both programs became widely available during the early part of the 1980s. IRAs and 401(k) plans are similar in that plan contributions are tax deductible, accumulated interest is not taxable, and withdrawal restrictions apply. Where the programs differ is that 401(k) plans are available only to employees of plan-sponsoring firms and most often involve employer matching contributions. IRA contributions, on the other hand, are independent of place of employment and, therefore, do not involve employer contributions.

Although they are intended to increase the savings rate, personal saving will increase if current-period consumption is reduced to pay for contributions to these savings plans. Aggregate data appear to indicate that savings incentive plans, such as IRAs and 401(k)s, have increased personal saving. As described in [8], annual IRA contributions went up by $33 billion between 1981 and 1986, but then declined to $7.7 billion by 1994 as a consequence of provisions in the Tax Reform Act of 1986 that limited the tax deductibility of contributions. Likewise, 401(k) plan contributions increased from nearly zero in the early 1980s to over $62 billion in 1992. Combined contributions to these retirement plans have exceeded contributions to the more "traditional" employer-provided defined benefit and contribution plans (e.g., savings and thrift plans, profit sharing, employee stock ownership plans) since 1986.

There are caveats associated with drawing the conclusion that these programs have increased national (public plus private) saving. First, because contributions to these programs are usually tax deductible, current-period public saving will fall as a result of lower tax revenues, thereby raising the public debt. That would not necessarily be a problem if private saving increased by enough to offset the increase in

public debt, but do these programs increase private saving? There is the possibility that previous savings from taxed accounts have been shifted into these relatively more generous tax-deductible instruments or that individuals have borrowed to finance the contributions. Moreover, the taste for saving may have changed; perhaps these funds would have been saved even without the incentives. If so, the increase in net savings may not be the result of these tax incentive savings plans.

Because of the ambiguous theoretical relationship, the effect of savings incentive programs on personal savings is an empirical question. The debate over the impact of such plans as the IRA and 401(k) on personal savings is unresolved. References [8, 9, 10, 11, and 12] argue that IRA and 401(k) plans have had a large positive effect on savings. This conclusion is based on three types of evidence.

The first type of evidence follows the same households over time and looks at the difference in savings as these savings-incentives become available. Although it would be rational for the saver to shift savings from taxed funds to untaxed funds, such as an IRA, when the authors looked at individuals in 1984 and 1985, they found that non-IRA assets fell rather insignificantly after contributions were made to an IRA account. These findings were consistent with similar studies using different data sets.

A second piece of evidence considers the degree of substitutability (or lack thereof) between taxable savings funds and tax-free pension funds. Even though they are tax deductible, a good argument could be made that IRA contributions are not close substitutes for taxable assets. This is because of the illiquidity of IRA balances—the fact that contributions cannot be withdrawn without penalty until the person reaches age 59½. The implication of this lack of substitutability is that IRA contributions are financed by new saving. However, IRAs are probably substitutable for people close to or over age 59½ or for those with large savings balances who can afford to tie up long-term contributions to an IRA. Indeed, reference [13] shows that, between 1983 and 1985, households with heads older than 59 or those individuals with non-IRA assets greater than $20,000 accounted for nearly 70 percent of IRA contributions. The authors conclude that IRAs have had

no effect on savings. Reference [8], however, uses the same data and finds that this conclusion is fragile and, under minor changes in the model, the positive effect on savings is restored. One additional problem with examining the behavior of one person over time is that it is difficult to hold constant his or her taste for saving. For example, if the person becomes more thrifty over time, the IRA contributions may have been saved in an alternative account and no additional savings would have resulted from the IRA.

Comparisons of the behavior of different groups of savers represent the third type of evidence. For example, the employees who participate in a 401(k) plan at work represent a different cross section of people than those who contribute to IRAs. Participation in 401(k)s is broader and participants are more likely to be younger and poorer. References [11 and 12] compare the savings activities of two groups of savers with similar propensities to save, but one group is eligible for a 401(k) plan and the other is not eligible. The authors observe that both groups had similar levels of financial assets other than IRAs and 401(k)s. Between 1984 and 1991, they find that these assets did not decline (in fact, they increased) as the assets grew in the savings incentive programs for the group eligible for the 401(k) program. Because they have tried to make sure that the people in these groups had similar tastes for saving, they conclude that contributions to the 401(k) plan represent entirely new saving.

This research might be overstating the effect of the 401(k) plan on saving for several reasons. Eligibility for programs like 401(k)s may be correlated with the individual's taste for saving. Reference [12] argues that the implementation of the 401(k) plan is exogenous to the employees; however, employers probably respond to current workers' desires for these pension benefit programs, and new workers with a taste for saving might seek out employers who have these programs as part of the employee compensation package. Because of this self-selection problem, if employees who participate in 401(k) plans have a higher taste for saving, too much new saving will be attributed to the incentive program. If this is the case, a mitigating factor is the expansion of the eligibility of 401(k) plans over time. As more employees become eligible for these savings incentive plans, the fraction of people who are just "casual savers" will grow in the 401(k) plan

participants. This means that a finding of a decline in taxable financial assets for the group of 401(k) contributors does not imply a shifting of resources from taxable assets, but probably means that the group has been diluted by these previously casual savers.

In addition, studies that find a positive saving effect do not usually consider a broader set of alternative sources of funds for 401(k) contributions. References [14 and 15] are critical of the use of a narrow definition of wealth in the studies that have found a strong effect on savings. For example, contributions to IRAs and 401(k)s are available if people do not buy a larger home or if they do not accelerate their mortgage payments. When one considers a broader measure of wealth that includes home equity, some studies find that 401(k) programs have not increased wealth.

Reference [16] considers the savings behavior of two different cohorts of savers reaching retirement age in 1984 and 1991. The authors find that those reaching retirement age in 1991 had a larger mean level of financial assets than the group of people reaching retirement age in 1984. Furthermore, they observe that this difference is almost entirely the result of higher personal savings. They find similar results when they narrow the analysis to groups that participated in savings programs. As with the previous two types of studies, they conclude that there is little or no substitution of personal savings for other types of financial assets.

Engen, Gale, and Scholz [14, 15] caution against making any conclusions from this type of evidence. They observe that analysis on different cohorts means that significant age, time, and cohort effects are often difficult to identify. They note that the stock market boom between 1984 and 1991 and the higher real interest rates could explain the difference in financial assets observed by Venti and Wise [16]. They also point to the changes in other financial assets during the 1980s that could have accounted for the appearance of greater saving by the later retiring cohort. These changes include a shift away from housing, an increase in mortgage and household debt, and a decrease in the real value of social security benefits after the 1983 reforms. Finally, they note two potentially important data problems that would cause one to overstate the savings effects. Venti and Wise

do not consider the tax due on these balances upon withdrawal, and they omit data on 401(k) account balances before 1984.

In summary, there is no conclusive empirical evidence of the impact of savings incentive programs on total savings. A conservative reading of the literature suggests that total savings does rise, but by less than the amount contributed to these savings plans. In their overview of the empirical evidence, the authors of [17] estimate that the impact of IRAs on saving is probably greater than 26 cents per dollar of contribution. In other words, for every dollar invested in an IRA, only 26 cents represents "new" saving; the remainder is a substitution of existing financial assets for investment in an IRA. They conclude, however, that the substitution of existing financial assets into 401(k)s is smaller, which translates into a larger net increase in total savings.

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Effect on tax revenue

An additional question arises regarding the effect of these programs on national (private plus public) saving. To encourage participation, one of the characteristics of pension plans like a thrift savings plan (or a 401(k)) is the ability of employees to make tax-deductible contributions. Obviously, this contribution will immediately reduce tax revenue, which is particularly a problem if funds have been shifted from taxable savings accounts. Of course, future tax revenues increase as these retirement funds are eventually withdrawn, but they are usually subject to taxation at a lower marginal tax rate. Considered in isolation, these savings incentive programs create the possibility of a tax revenue loss caused by the tax benefits of the savings plan contributions and withdrawals. One possible mitigating factor is that, if saving goes up in response to these incentive programs, domestic investment funding by this saving is expected to increase. This increased investment will ultimately raise corporate tax revenues. The possibility that tax revenue might increase as result of the increased saving that is transformed into investment is not often considered.

Given this theoretical ambiguity, the relationship between savings incentive plans and tax revenue is an empirical question. Reference [18] uses a simulation model to calculate the total tax revenue effects resulting from a tax incentive savings program. The author considers the behavior of a hypothetical 45-year-old who contributes $2,000 a year to an IRA for 20 years and then withdraws an annuity for 15 years. He attempts to estimate the change in personal and corporate tax revenue as a result of this type of IRA. The revenue effects clearly depend on the assumptions of the simulation regarding tax rates and savings effects.

One key assumption in the Feldstein model [18] is that saving is positively affected by these incentive programs. Under Feldstein's most optimistic scenario—high corporate and post-retirement tax rates and only 20 percent of the IRA contribution taken from other

savings—the corporate tax revenue eventually exceeds the lower personal income tax revenue after 9 years. The national debt associated with any tax losses is reduced (i.e., the increased corporate tax revenue exceeds the lower personal income tax receipts plus the interest on the national debt) after 15 years. Even under his weakest scenario—only 50 percent of the IRA contribution represents new saving combined with low corporate and personal tax rates at retirement—corporate tax revenue exceeds the loss of personal tax revenue in 21 years, and 5 years of surpluses will be enough to pay the accumulated debt. Although they do not deny that positive revenue effects are possible, Engen, Gale, and Scholz [14, 15] argue that the strong revenue gains found by Feldstein are not realized "under more plausible conditions."

Despite these potential decreases in tax revenue, both immediate and in the long-term, the Federal Government has continued to offer these tax advantages to individuals to encourage private saving for retirement. We conclude, then, that the government has historically viewed this potential loss in revenue as an "acceptable cost" in promoting lower reliance on Social Security for retirement benefits. Furthermore, there is no reason to expect the Federal Government's desire for private saving for retirement to be any different for military personnel than for private-sector employees.

Administrative costs

We examined several studies of administrative costs of public and private pension fund programs. According to data taken from the U.S. Department of Labor, the primary expenses for private defined contribution programs include salaries, accounting fees, actuarial fees, contract administrator fees, and investment advisory and management fees. Overall, the Department of Labor statistics indicate that annual expenses as a percentage of contributions are only about 1.5 percent. The expenses associated with a defined contribution plan are a small fraction of defined benefit plan expenses. Annual expenses as a percentage of contributions for a defined benefit plan are about 11 percent. The primary difference between these two plans is the high investment advisory and management fees of the defined benefit plan as well as higher actuarial fees. In contrast, the military's defined benefit retirement system does not have these investment/actuarial costs.

If the employer sets up some type of investor education class, the costs of the defined contribution plan do rise [19]. For example, 401(k)s provide a great deal of data to participants, including quarterly statements and investor information. As a comparison, administrative costs for private pension plans are often considerably greater than those managed directly by the government. Reference [20] cites a U.S. Social Security report that annual administrative costs of the U.S. Social Security Program are lower than those reported by the Department of Labor for private pension plans.

Reference [19] also concludes that administrative costs are a function of the number of plan participants, the magnitude of the plan's assets, the percentage of plan members who are actually retired, and the percentage of assets held in a pooled fund. Empirical estimates of administrative costs identify statistically significant scale economies. Specifically, one estimate of plan size showed that increasing the number of participants by 1 percent raised administrative costs by eight-tenths of 1 percent. Similarly, raising the asset size by 1 percent

raised costs by just over one-quarter of 1 percent. Consequently, the large size of the military thrift savings plan is expected to keep administrative costs lower, not higher as many have feared. In general, there is no evidence to suggest that the administrative costs of TSP for military personnel would be prohibitively expensive.

Conclusion

The private sector has made increasing use of defined contribution plans to provide retirement benefits to its employees. The military retirement system is principally a defined benefit plan, but military personnel have recently been given the opportunity to participate in a thrift savings plan. Many have expressed concerns about the implications of such a dramatic shift in compensation. The major issues that have emerged are questions regarding (a) the level of service member participation, (b) potential effects on total saving, (c) implications for federal tax revenues, and (2) the administrative costs associated with such a program.

The evidence suggests that participation and contribution rates are strongly related to the size of matching contributions made by the employer. In addition, survey evidence shows that military personnel would increase participation in TSP if the government were willing to make matching contributions. It is also likely, however, that participation will be strongly related to the performance of financial markets, and that the recent economic downturn will negatively affect participation rates.

Even though these savings incentive plans are designed to encourage increased retirement savings, the impact of these programs on total savings is unclear. The empirical evidence is split, with estimates ranging from no substantive increases to nearly a 100-percent increase in total savings. The literature concludes that total savings does rise, but by less than the amount contributed to these savings plans.

There is conflicting evidence on the effect of these programs on national (both private and public) saving. Some research shows the potential for this immediate tax revenue loss to be made up over time by increases in corporate tax revenue; the magnitude and timing of these long-term increases depend strongly on the assumptions that are made. Regardless, the Federal Government has continued to

offer these tax advantages to encourage private saving for retirement, and it is likely that any loss in revenue is viewed as an "acceptable cost" in promoting less reliance on Social Security for retirement benefits.

Finally, the evidence suggests that the administrative costs for defined contribution plans are a small fraction of those associated with defined benefit plans. The primary differences in administrative costs are the high investment advisory and management fees of the defined benefit plan, as well as larger actuarial fees. It is not clear, however, whether these high administrative costs are associated with the defined benefit plan offered by the military. If the employer provides investor education for its employees, the costs of the defined contribution plan do increase, but with clear benefits for the employee.

We conclude that the availability of a thrift savings plan to military personnel represents an attractive component of the compensation package. It provides military personnel with a benefit that is enjoyed and used by many of their private-sector counterparts, and it allows the service member to take an active role in saving for retirement. In addition, the ability to selectively match contributions gives the Department of Defense the flexibility to use compensation as a force management tool.

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