Retirement Account Options When Beginning a Career

by Gregory G. Geisler, PhD, CPA
Jerrold J. Stern, PhD

Abstract: *When college graduates begin their careers, they face a number of financial choices and obligations. Their choices typically include one or more retirement account options. The options generally include individual retirement accounts (IRAs) (Roth and/or traditional), 401(k) plans (Roth and/or traditional), and, possibly, 401(k) contributions matched by the employers. In this article, a decision-making hierarchy is provided. The hierarchy ranks all of the retirement account alternatives in order to facilitate choices that are tax efficient and maximize wealth. A simplified version of the ranking is as follows: (1) Roth 401(k) with matching employer contributions; (2) traditional 401(k) with matching employer contributions; (3) Roth IRA; (4) Roth 401(k); and (5) traditional 401(k).*

This issue of the Journal went to press in April 2014.

Graduates beginning their careers face numerous financial choices and obligations. Common options could include paying off debt (e.g., credit cards, student loans, etc.), saving for a down payment on a home, financing the purchase of an auto, establishing emergency savings, and purchasing insurance. Another financial option is funding one or more retirement accounts. While saving for retirement is likely not foremost on the minds of recent graduates, many are offered one or more options as soon as they begin their careers.

The most common retirement account employers offer to employees is a 401(k) plan. Many 401(k) plans give the employee an additional option—to contribute to a Roth 401(k) account. For example, Fidelity Investments administers over 20,000 retirement plans with more than 12 million participants. During the first quarter of 2013, 40 percent of the 401(k) plans it administers offered a Roth 401(k) option.

The choice between contributing to a traditional 401(k) and a Roth 401(k) is referred to hereafter as the 401(k) decision. Another financial option is funding an individual retirement account (IRA) and deciding whether it should be a traditional IRA or a Roth IRA—hereafter, the IRA decision. Joel Dickson, PhD, Senior Investment Strategist with mutual fund giant Vanguard, recently stated the following in Vanguard's monthly newsletter, "By far, the most beneficial strategy for investors to improve their overall after-tax rate of return is to maximize use of retirement accounts…because of the tax advantages of such accounts."[1]

This article focuses on 401(k) and IRA decisions from the perspective of a recent graduate who is a newly hired employee beginning his or her career (hereafter, recent graduate), whose employer has a 401(k) plan. The article is intended to guide the financial service professional giving advice regarding 401(k)/IRA plans to a client or a client's grown child beginning his or her career. A three-step decision-making hierarchy that may facilitate 401(k) and IRA decisions is provided below. The goal of the hierarchy is to help recent graduates achieve tax efficiency and wealth maximization.

Retirement Account Investment Choice Hierarchy

Contributions to Roth 401(k)s and Roth IRAs are made with after-tax dollars, meaning the contributions do not generate a tax deduction or exclusion. However, qualified withdrawals are not subject to tax—neither the contributions nor the earnings are taxed. In contrast, contributions to traditional 401(k)s and traditional IRAs are made with before-tax dollars. In this case, the contribution amounts are not taxed until they are withdrawn. Moreover, all of the earnings of traditional 401(k)s and traditional IRAs are subject to tax at withdrawal.

As discussed and illustrated below, the best option for a recent graduate is to maximize the employer's matching 401(k) contribution. This option can be viewed in two parts: Part (a)—contribute to a Roth 401(k) with matching employer contributions; and Part (b)—if a Roth 401(k) is not available, then contribute to a traditional 401(k) with matching employer contributions. Specifically, contribute enough to receive the maximum employer match.

The second best option is as follows: Once the maximum employer 401(k) match is obtained, invest in a Roth IRA. If the employer does not match 401(k) contributions, then the best option becomes maximizing the Roth IRA contribution. In 2014, the maximum is \$5,500 (or \$6,500 if age 50 or older).

The third best option is as follows: If funds are still available and the employer offers a (nonmatching) Roth 401(k), then contribute to it. If a Roth 401(k) is not offered, then invest in the (nonmatching) traditional 401(k).

Discussion and Illustration of the First Step in the Investment Hierarchy

Step 1—Part (a)

The best option for a recent graduate is contributing to a Roth 401(k) with matching employer contributions.

The option at the top of the hierarchy is contributing to a 401(k) for which the employer provides "free" matching contributions. If the plan offers both a traditional 401(k) and a Roth 401(k), the recent graduate should contribute to the Roth 401(k). The recent graduate is assumed able to contribute a large enough portion of salary to receive the maximum amount of 401(k) match from the employer.

For an educational or a not-for-profit institution, rather than a customary business, the employer might offer a traditional 403(b) and possibly a Roth 403(b) which, for purposes of this analysis, are the same as traditional 401(k) and Roth 401(k) plans. Employers with 100 or fewer employees might offer a Savings Incentive Match Plan for Employees (SIMPLE) IRA. If an employee makes a contribution, it is deposited into a traditional IRA and the employer must match the employee's contribution at a rate of 100 percent up to a maximum of the first 3 percent of the employee's wages. For purposes of the analysis, the transaction is considered the same as an employee contributing to a traditional 401(k) with an employer match.

As indicated earlier, the hierarchy is driven by the goals of tax efficiency and wealth maximization at retirement. Table 1 identifies future after-tax values (FV) and annualized after-tax rates of return (r) under various investment options. Since employer contributions are literally free, the table indicates that FVs and r's are maximized when employers match employee 401(k) contributions. The shaded boxes denote optimal outcomes. The assumptions underlying the table are provided below.

The values in the table are based on several assumptions. It is important to note that the ranking of the alternatives remains the same regardless of the dollar amounts and tax rates assumed. Assume the employee receives \$50,000 of salary per year and the employer matches employee contributions at \$.50 per \$1.00 up to 6 percent of salary per year (i.e., a $1,500 maximum employer match in the example). All scenarios assume a marginal tax rate (MTR) of 20 percent and a 7 percent average portfolio growth rate throughout the entire employment period of 30 years. A 20 percent MTR was chosen based on the following reasonable assumptions about the recent graduate/employee: the employee does not itemize deductions (i.e., uses the standard deduction); and taxable income is in the 15 percent federal and 5 percent state tax rate brackets. For the Roth 401(k) investment, the employee deposits $3,000 after-tax dollars (via withholding from pay) into a Roth 401(k) and the employer deposits $1,500 before-tax dollars into a traditional 401(k). Employers are not allowed to contribute to an employee's Roth 401(k).

Since the tax rate at retirement (when the funds are withdrawn) can be the same, or higher, or lower than the tax rate at the time of retirement account contributions, the table results reflect the following scenarios: constant MTR (20 percent), rising MTR (25 percent), and falling MTR (15 percent). For computational simplification, all funds in the account are assumed to be withdrawn on the first day of retirement without penalty and taxed at the MTR indicated above. Thus, for example, for the rising MTR scenario, the MTR during the entire period of employment is assumed to remain at 20 percent. Yet, on the day of retirement, the MTR is 25 percent.

The comparable traditional 401(k) investment is comprised of $3,750 before-tax dollars from the employee (via withholding from pay) plus a $1,500 before-tax employer match (the same employer match as above). The $3,750 investment in the 401(k) is comparable to the $3,000 investment in the Roth 401(k). The reason the employee contributes either $3,000 to the Roth 401(k) or $3,750 to the traditional 401(k) is that both have an equal after-tax cost. Note that the employee's $3,750 contribution to his or her traditional 401(k) reduces salary subject to income tax by $3,750 and, given a 20 percent MTR, saves the employee $750 of income tax. Thus, ultimately, the employee is only "out of pocket" $3,000—the same amount as the contribution to the Roth 401(k). The two 401(k) strategies are now comparable since the after-tax costs for the employee are identical and the employer's matching contribution is identical.

The recommendations made in this article place substantial importance on the lack of tax rate risk associated with Roth 401(k)s and Roth IRAs. For Roth investments, regardless of whether tax rates are rising, falling, or remaining constant over time, employees can depend on their r's and FVs to be unaffected by changing marginal tax rates. This is because the r will always be equal to the before-tax average portfolio growth for Roths. Thus, even though the last two columns in Table 1 show traditional 401(k) investments produce higher r and FV values when tax rates are falling, the risk of tax

TABLE 1

Comparison of Investment in Roth 401(k) versus Traditional 401(k)

	MTR* constant (20%)		MTR rising (25%)		MTR falling (15%)	
	r**	FV***	r	FV	r	FV
Roth 401(k) with match	8.75%	424,507	8.66%	416,926	8.84%	432,087
Traditional 401(k) with match	8.75%	424,507	8.42%	397,975	9.06%	451,038
Roth 401(k) No match	7.00%	303,219	7.00%	303,219	7.00%	303,219
Traditional 401(k) No match	7.00%	303,219	6.66%	284,268	7.32%	322,170

Legend:

*MTR—Marginal tax rate
**r—Annualized after-tax rates of return
***FV—Future after-tax amounts

Optimal outcomes are shaded.

While this scenario [Traditional 401(k) with match coupled with a falling MTR] appears optimal, "tax rate risk" may make the traditional 401(k) and traditional IRA strategies unfavorable.

rates rising [causing Roth 401(k) values to exceed traditional 401(k) values] makes the Roth 401(k) preferable for recent graduates beginning their careers, in the opinion of the authors.

As indicated in the middle columns of data in the table (MTR rising), the optimal investment is in an employer-matched Roth 401(k) up to the maximum amount of employer contributions. Assuming the MTR is constant (the first two columns of data in the table), the Roth 401(k) and traditional 401(k) are equivalent. Yet, investing in the Roth 401(k) is still recommended. This recommendation is based on the lack of tax rate risk associated with Roth investments, as explained above.

As noted above, many 401(k) plans contain an option to contribute to a Roth 401(k). For employees working in the private sector that contribute to a 401(k) plan, the 2010 National Compensation Survey (NCS) conducted by the U.S. Bureau of Labor Statistics shows that 86 percent contribute to a traditional 401(k) and 23 percent contribute to a Roth 401(k). These percentages exceed 100 percent because 9 percent of participants contribute to both.

PlanSponsor.com, in its 2011 Defined Contribution Survey of 7,000 plans, found that except for very small employers, the large majority of employers have some type of match when an employee contributes to a 401(k). The maximum employer match varies widely. Expressed as a percentage of salary, the maximum match was less than 3 percent of salary in one-third of the plans; equal to 3 percent of salary in one-third of the plans; and greater than 3 percent of salary but not greater than 6 percent in more than 25 percent of the plans. Only a small number of plans had a more generous maximum match than 6 percent of salary. The survey also noted that many employers allow a new employee to immediately participate and receive a match but a sizable number of plans require either a three-month or a six-month period of employment before participation is allowed.

Step 1—Part (b)

The best option for a new employee if no Roth 401(k) is available is contributing to a traditional 401(k) with matching employer contributions.

Based on the analysis in the table, if a traditional 401(k) is the only 401(k) option, the employee should contribute enough to maximize the matching employer contribution. Many recent graduates will likely contribute some amount to their 401(k) plans. According to the Plan Sponsor Council of America, more than 40 percent of 401(k) plans now automatically enroll new employees. The most common default contribution by "autoenrolled" employees is 3 percent of salary. Unfortunately, for many of these employees, this default contribution is not enough to receive the maximum employer match. A 2011 report by AONHewitt summarized plans covering more than 3 million employees in total. For the plans with autoenrollment, 41 percent of the participants contributed below the threshold to obtain the maximum employer match. Further, 43 percent of workers in their 20s who were contributing to 401(k) did not contribute enough to receive the full employer match—a higher percentage than older workers.

Consistent with the hierarchy of choices, financial services professionals can urge recent graduates to contribute enough to their Roth 401(k) plans or, if it is not an option, to their traditional 401(k) plans, in order to receive the maximum employer match for the year.

Step 2

If there is no employer match or if funds are still available after the recent graduate receives the maximum 401(k) match, the employee should invest in a Roth IRA.

Discussion of the Second Step in the Investment Hierarchy

As discussed above, the r for a Roth [either 401(k) or IRA] is always equal to the before-tax portfolio return—again, no tax rate risk. Zero tax rate risk is the primary reason for placing individual Roth IRAs ($5,500 per year maximum in 2014, and $6,500 per year maximum for those over 50) above (1) nonmatching contributions to a traditional 401(k) with no Roth 401(k), and (2) a traditional IRA. Even if there is a Roth 401(k) option, the reason for choosing a Roth IRA instead of nonmatching contributions to a Roth 401(k) or traditional 401(k) is the availability of a wider variety of investment choices for a Roth IRA. Unless the 401(k) plan includes a "self-directed brokerage account," most 401(k) plans offer a limited number of "core" mutual funds. In contrast, thousands of mutual funds are available to an IRA investor. Further, unlike 401(k) plans, the money in an IRA can be invested in publicly traded stocks or bonds or exchange-traded funds (ETFs). Another advantage of the Roth IRA is that there is no required minimum distribution (RMD) rule. In contrast, RMDs start the year after age 70½ for traditional IRAs, traditional 401(k)s, and Roth 401(k)s.

Supporting the Roth IRA choice are Investment Company Institute (ICI) data showing that 36 percent of households with IRAs hold one or more stocks inside their IRAs. In addition, passive index ETFs typically offer lower annual investment expenses than comparable mutual funds. However, there is one advantage of 401(k) plans over IRAs. Large employers typically enjoy significant discounts on investment expenses for core mutual funds offered to employees. Still, on balance, it appears that the weight of the advantages favors an IRA account over a 401(k) account (again, in the case of no employer matching 401(k) contribution).

According to the ICI's 2012 Fact Book, "…only 14 percent of U.S. households contributed to any type of IRA in tax year 2010." According to an article in the U.S. Treasury Department's spring 2012 issue of *SOI Bulletin* titled, "Accumulation and Distribution of IRAs," approximately six million taxpayers contributed an average of $3,000 to Roth IRAs.[2]

IRS aggregate statistics of tax returns that contain an employed individual show that more than 90 percent of such individuals are eligible to contribute to a Roth IRA. For 2014, $5,500 is the maximum contribution to a Roth IRA for the year if under age 50 ($6,500 if age 50 or over); for an unmarried individual the maximum Roth IRA contribution can be made if adjusted gross income (AGI) is below $114,000, and for married taxpayers filing jointly the maximum Roth IRA contribution can be made if AGI is below $181,000. It is rare for a recent graduate's AGI to be above these thresholds.

There are probably many reasons for the limited number of Roth IRA contributors. One is that it is easy not to take advantage of the opportunity to contribute to an IRA. Money to fund an IRA account is deposited into the employee's checking account as part of his or her net pay unless the employee: (1) has the opportunity to have the employer deposit salary directly into an IRA account and, (2) acts proactively to take advantage of such opportunity. Many recent graduates are autoenrolled in a 401(k) plan when they begin employment.

One partial funding source is common, though—an income tax refund. A traditional IRA or a Roth IRA can be established and a contribution made to it by the due date of the tax return. Such a contribution can be considered a contribution for the tax return year even though it is made in the following year. IRS statistics show that more than two-thirds of individual taxpayers receive tax refunds. So a financial services professional can recommend that a recent graduate following Step 1 [either Part (a) or (b)] consider contributing his or her tax refund, if any, to a Roth IRA, and also consider beginning regular contributions out of his or her pay to a Roth IRA.

Discussion of the Third Step in the Investment Hierarchy

Step 3—Parts (a) and (b)

For Part (a), if funds are still available, invest more in the Roth 401(k). The benefits of the Roth 401(k) are discussed above and illustrated in Table 1. For Part (b), if a Roth 401(k) is not available, invest more in a traditional 401(k). While investing more in a traditional IRA runs the risk of r being less than the before-tax rate of return, on the positive side the employee is still saving for the future using the compounding power of tax deferral inside a retirement account. (The authors recognize that the recent graduate may have no funds available for investment after completing the second step in the hierarchy.)

A brief example may help to place the three steps of the hierarchy in perspective. In Step 1, the approximate contribution is likely in the range of a few thousand dollars. In Step 2, $5,500 is the maximum allowable contribution to the Roth IRA by a recent graduate under age 50. In contrast, the maximum allowable contribution to a 401(k) in Step 3 is $17,500 minus the employee's contribution in Step 1. The employee's ability to fund retirement savings may be exhausted prior to reaching the $17,500 threshold.

Concluding Comments

This article provides a decision-making hierarchy for the retirement savings of recent graduates who are newly hired employees. The analysis demonstrates that there are considerable wealth benefits for the employee when the employer matches the employee's 401(k) contributions. The article also shows the relative benefits of Roth 401(k)s over traditional 401(k)s. The fact that Roth 401(k)s and Roth IRAs feature no tax rate risk makes them superior to traditional 401(k)s and traditional IRAs.

The manner in which IRAs can supplement employer 401(k)s is also discussed. In general, all 401(k) and IRA contributions improve future wealth and quality of life when employees retire. The analysis demonstrates that, after maximizing an employer match, new employees should contribute to a Roth IRA. In the final step in the hierarchy, it is recommended that employees contribute additional funds to the employer's (nonmatching) 401(k) plan.

The article does not specifically address the additional administrative costs to the employer for adding a Roth 401(k) option. In addition, some employers may be concerned that two 401(k) options will confuse employees. Nevertheless, with proper employee education, the increased employee wealth at retirement by investing in a Roth 401(k) will likely far outweigh the additional costs to the employer. Further, employers who have a Roth 401(k) option may find that it is a recruiting advantage to prospective employees. Financial services professionals can assist clients and the grown children of clients by educating them about the three-step decision-making hierarchy in this article and then, if needed, helping to set up and making sure contributions are allocated to the appropriate account. ■

Gregory G. Geisler, PhD, CPA, is an associate professor of accounting at University of Missouri–St. Louis. He teaches federal income taxation courses to accounting students and a seminar on taxes and investments to students pursuing the Master of Accounting degree. He can be reached at geisler@umsl.edu.

Jerrold J. Stern, PhD, is a professor of accounting at the Kelley School of Business, Indiana University, Bloomington. He has taught a variety of tax courses at the undergraduate and graduate levels. Tax aspects of investments is a major topic in two of these courses. He can be reached at stern@indiana.edu.

(1) Joel Dickson, "How to Be a More Tax-Efficient Investor," February 21, 2012, at https://personal.vanguard.com/us/insights.

(2) Victoria Bryant, "Accumulation and Distribution of Individual Retirement Arrangements, 2008," *Statistics of Income (SOI) Bulletin,* Spring 2012, Washington, D.C.