CHAPTER 6 PROJECT

Defined Benefit Versus Defined Contribution: Two Types of Retirement Plans

In this chapter, you learned about the power of interest and the importance of budgeting in order to plan for your future financial health. In this project, we will explore the two main types of retirement plans available in the United States: defined-benefit plans and defined-contribution plans.

In a *defined-benefit plan* (or a pension plan), an employee is guaranteed life-long income after retirement. The size of the income received after retirement is usually determined by the employee's years of service and salary at the time of retirement. The employer is responsible for all the planning and managing of risk associated with this type of plan.

1. Perform an internet search for "defined-benefit plans". List two advantages and two disadvantages of this type of plan for the employee. List two advantages and two disadvantages for the employer. What kind of employers usually offer a defined-benefit plan?

In a *defined-contribution plan*, the employee (and often the employer) makes contributions to an investment account. Two common plans of this type are 401(k)s and IRAs. The size of income received after retirement is determined by the balance in the account and other market factors. With this type of plan, the employer does not have any responsibility towards the planning or managing the risk of the account.

2. Perform an internet search for "defined-contribution plans". List two advantages and two disadvantages of this type of plan for the employee. List two advantages and two disadvantages for the employer. What kind of employers usually offer a defined-contribution plan?

Suppose that a small town has a pension fund that is expected to make annual payments totaling $500,000 to its local government retirees. The fund must be able to sustain such payments in perpetuity; that is, forever. The easiest way for this to happen is if the town is able to set aside $500,000 every year to pay its retirees.

3. What are some ways the town could secure the funds for the retirees? Think about ways local governments can generate revenue. Do you believe these revenue streams are sustainable in the long run? Explain.

Another possibility to sustain the fund would be to plan ahead. The town could allocate and invest money for its pension fund from the time the first local government employee is hired to the time they retire, 30 years later. In order to simplify our calculations, let's assume that the town will set aside an amount d on year 1 to pay for the first year of retirement for all local government retirees 30 years later. The town council believes it can earn 7% annual interest on the account.

4. Calculate the amount d that the city must set aside that first year. Does the 30-year plan work in favor of the town? Explain.

Now, let's assume that the budget committee has allocated the amount found in part 4 for investment each year. Consider the unfortunate event of the market turning sharply downwards, resulting in a 4% rate of return on the account per year instead of the anticipated 7%.

5. Use the answer from part 4 to calculate the amount available in the retirement fund after 30 years? (**Hint:** calculate the future value of a single deposit made on the first year.)
6. What does your answer in part 5 say about the ability of the town to fulfill the pension obligation to its retirees after 30 years?
7. Discuss any changes to the town's predicament if they invested the same amount in a 401(k) without any guarantees of income.
8. If you were the manager of a small town's pension fund, would you prefer to offer a pension fund or a 401(k) to your employees? Explain.
9. If you were an employee of a small town, would you rather be enrolled in a pension plan or a 401(k)? Explain.