

**BRIEF ANALYSIS**

No. 343

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## The Power of Compounding and Social Security

By Matt Moore

Albert Einstein called it the greatest mathematical discovery of all time. Benjamin Franklin supposedly said it was the eighth wonder of the world. MasterCard, Visa and American Express use it — with devastating effects for unwary cardholders. The tool is compounding, and if harnessed correctly, it can save Social Security while ensuring a safe, comfortable and secure retirement for even the lowest-income Americans.

**Compounding Is a Powerful Tool.** Investing money in an asset on which the gain or interest is compounded, such as a mutual fund or a savings account, is more beneficial than hiding the money under a mattress — that much is common sense. Consider the example of the ant and the grasshopper from Aesop's fable.

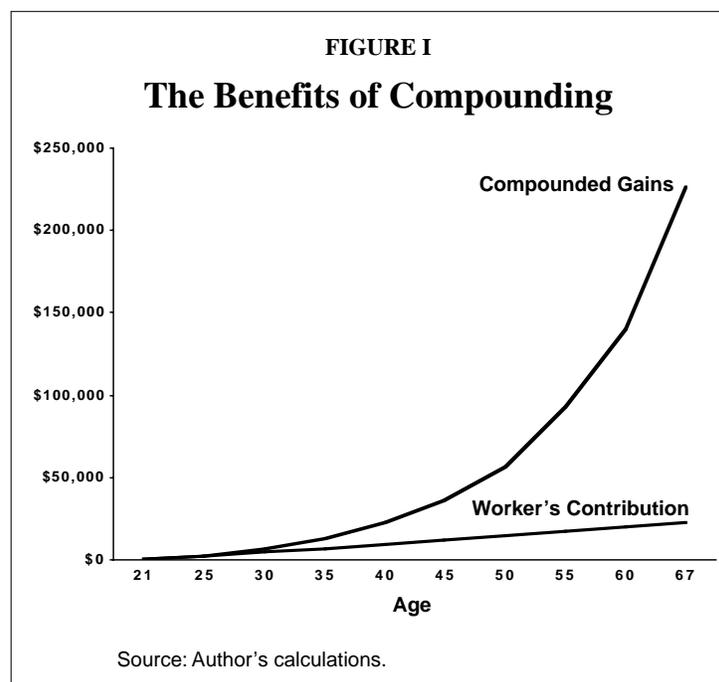
■ The ant, recognizing the importance of saving, starts at age 25 and invests \$1,000 for 10 years in a portfolio that earns 5.5 percent a year. At that point, she stops contributing. But her investment continues to grow; and when she reaches age 67, it is worth \$75,352.

■ The grasshopper, who spends his money in the early years, doesn't start investing until age 45. In order for him to make the same amount as the ant who started investing 20 years earlier, he will have to invest almost \$1,750 a year for 22 years to catch up.

This example demonstrates the value of compound interest. The investor not only earns money on his initial investment, but in subsequent years earns money on previous years' earnings as well. Increasing numbers of

Americans understand the importance of investing and the value of compounding — more than 48 percent of Americans own stock. (Credit card companies use the power of compound interest *against* consumers. If a cardholder does not pay off the entire monthly bill, interest accrues. The next billing period, the cardholder is charged interest on the previous periods' interest, and so on.)

**Long-Term Investing Is Best.** Compounding can best be demonstrated with a long-term investment such as retirement savings. If you tuck away a percentage of your paycheck every month — and leave the money alone — compounding can work its magic.



■ A worker invests \$800 in his retirement account each year beginning at age 24, and it earns an average return of 8 percent a year. His total contributions by the time he retires at age 67 are only \$34,400. But his whole investment will have grown to \$284,760. If his employer matches his contribution, the worker will have \$569,520 at retirement.

■ Another worker invests only \$500 a year beginning at age 21 in a conservative portfolio that earns 8 percent interest a year. Her actual contributions by age 67 total

only \$23,000, but her whole account will have grown to \$225,950 by the time she retires [see Figure I].

These examples are simple. They do not reflect wage increases over the workers' lives, nor do they take offsets like taxes or inflation into account. But they do demonstrate that, coupled with a prudent long-term investment strategy, compounding dramatically increases the amount of money an individual can earn over time, even on small investments.

**Saving Social Security.** Under the current system, surplus Social Security taxes are either spent as they are

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collected or used to reduce the federal government's debt. If we continue on the current path we will be forced to reduce benefits by nearly a third or raise taxes by as much as one-half. However, if younger workers were given the opportunity to invest a portion of their payroll taxes in personal retirement accounts, which incorporate the power of compounding, we could avert the need to substantially raise taxes or cut benefits in the future.

Each dollar in an individual's private account would represent a reduced claim on the government for Social Security benefits at retirement. (The offset depends on the particular plan adopted – some would reduce the Social Security benefit, for example, by 75 cents for each dollar in the individual's account.) Once all retirees are drawing benefits from individual accounts, Social Security's spiraling costs will be contained, and the program's multi-trillion dollar unfunded liability will be reduced. Granted, there will be some short-term adjustments between now and the time the first accounts mature.

By taking advantage of compounding, workers can retire on a greater benefit than Social Security can provide. And unlike Social Security, the personal retirement account will become part of a worker's estate.

**Examples.** The following examples were calculated using the NCPA's Social Security Calculator at <http://www.mysocialsecurity.org>. These examples show how much better off workers would be if Social Security had been restructured to take advantage of compounding and workers had been allowed to invest the retirement portion of their Social Security taxes (10.6 percent of the 12.4 percent tax) in a personal retirement account.

- A 23-year-old elementary school teacher making \$22,000 can expect to receive a \$1,590 monthly Social Security benefit — if Social Security is able to pay her full benefits when she retires. If she had invested the same tax money in a personal retirement account, she could have a \$3,726 monthly payment from a retirement account worth \$459,257 [see Figure II].
- A 30-year-old welder earning \$35,000 can expect a \$1,528 monthly Social Security benefit. If he had had the opportunity to invest in a private account, he could have a \$6,614 monthly payment from an account worth \$690,022 at retirement.

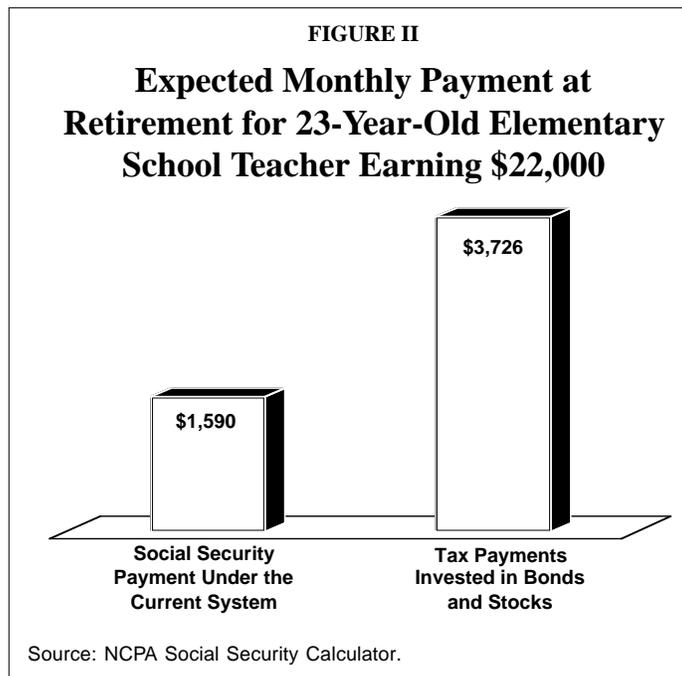
- A 28-year-old receptionist making \$18,000 can expect a \$1,002 monthly Social Security benefit. If he could invest the same tax money in a personal account, he could instead receive a \$3,243 monthly payment from an account worth \$338,258 at retirement.

In all three cases, the workers would fare better under a system that takes advantage of compounding. Such a system would provide a larger retirement benefit for workers, and the benefit would be their property to keep, spend or

pass on to heirs.

**Calculate Your Own Benefits.** You can see how you would fare with a personal retirement account and how it compares to your expected Social Security benefit by visiting the NCPA's Social Security Calculator at <http://www.mysocialsecurity.org>.

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