

Interest Rates and Present Value

Many economic decisions take place over time. Understanding interest rates and present value are important in evaluating economic decisions where payments are made or received over a span of time.

For the workshop/homework today please form into your research groups. Meet wherever is convenient. Please return in 40 minutes and be prepared to discuss your results with the rest of the class.

For each of the following cases compute the present value of their expected income stream based upon their income at the time of their death, a four percent interest rate, and retirement is set for all at 65 years of age if not explicitly identified. Feel free to use the present value of a uniform series where you can (Table B-3) and the present value of a single payment at the end of the period (Table B-1) where you must.

1. A married woman 35 years old taking care of her three children and not working outside of the home.
2. A 32 year old male stockbroker making \$200,000 per year with no children and a wife working in similar work for about the same annual salary. Work this problem at a 10% interest rate and a 0% interest rate.
3. A 30-year-old male medical student working in the school cafeteria for \$8 per hour.
4. A 62-year-old executive that made \$400,000 per year at the time of his retirement one year ago.
5. A 58-year-old manager that makes \$100,000 today but will receive a predetermined increase in pay to \$200,000 at age 62 for the last three years of his contract. (Hint; You'll have to determine the PV for each of the last 8 years individually—5years at \$100,000 and 3years @ \$200,000)

Extra credit:

1. What is the discount rate for a \$1,000 bond due to mature in one year that is selling for \$934.58 today? Please ignore selling costs.
2. What is the discount rate for a \$1,000 annuity paid out each year for the next 20 years that cost \$6,259 to purchase today?

Please return to the classroom in 40 minutes to discuss the answers with the rest of the class. Each group should place one copy of all of your work in your case folder to be turned in with the Terrorist Attack and Compensation case.

On Tuesday November 8th we'll cover any questions left from this chapter and chapters one and two. Then we will enjoy a short quiz on chapters 1, 2 and 7 of Guell. It will consist of T/F, fill in the blank, and multiple guess questions. We'll discuss the economics of health care (chapter 19) in the time remaining.