REVIEW OF BASIC CONCEPTS PART 2

WHAT WILL YOU LEARN?

- What is the future value of a stream of cash flows?
- What is the present value of a stream of cash flows?
- What is an annuity?
- How do you find the present or future value of an annuity?

EXAMPLE

- Suppose you would like to have $50,000 in two years to start your new business idea. Impressed by your performance at work, your employer has just given you an annual bonus of $42,000 today. If you can invest at 5% per year, will you have enough at the end of two years to start your new business?

EXAMPLE (CONT'D)

UNEVEN STREAM OF CASH FLOWS

- Suppose over the next four years, you will receive the following cash flows.

Year 1	$3000
Year 2	$2000
Year 3	$4000
Year 4	$1000

- How much will you have at the end of four years at t=4, if the opportunity cost of funds is 5%?

EVEN STREAM OF CASH FLOWS

- What if the cash flows were all the same? Say $3000 every year?

ANNUITIES

- An annuity is a series of equal fixed payments for a specified number of periods.
- Annuity Compound Factor, ACF(r,n), sums up the compounding factors for n payments at a constant interest rate r.

GENERAL FORMULA FOR FUTURE VALUE OF AN ANNUITY

SINKING FUND PROBLEM

- We can look for the "C" – the fixed equal payment – to accumulate to a target value.

EXAMPLE

- Suppose you want to make sure you have $1,000,000 when you retire in 35 years. What even annual payments would you have to make to get to your goal if you can earn 6% per year?

EXAMPLE (CONT'D)

PRESENT VALUE OF A STREAM OF CASH FLOWS

- How about we find the present value of a stream of cash flows?
- Suppose you will get $2000 every year for four years. What is the present value of these cash flows if the opportunity cost of funds is 5%?

GENERAL FORMULA FOR PRESENT VALUE OF AN ANNUITY

LOAN PROBLEM

- The purchase price of the car you would like to buy is $37,150. You want to take out a loan (100% financing) with a maturity of 60 months. The first loan payment will come in one month's time, and the interest rate is 4% per year, compounded monthly. What are the monthly car payments?

COMPOUNDING PERIODS

- The phrase "the interest rate is 4% per year, compounded monthly" tells us what the interest rate is per compounding period is.

LOAN PROBLEM SOLUTION

SUMMARY

- You learned how to compute the present value and future value of a stream of cash flows such as annuities.