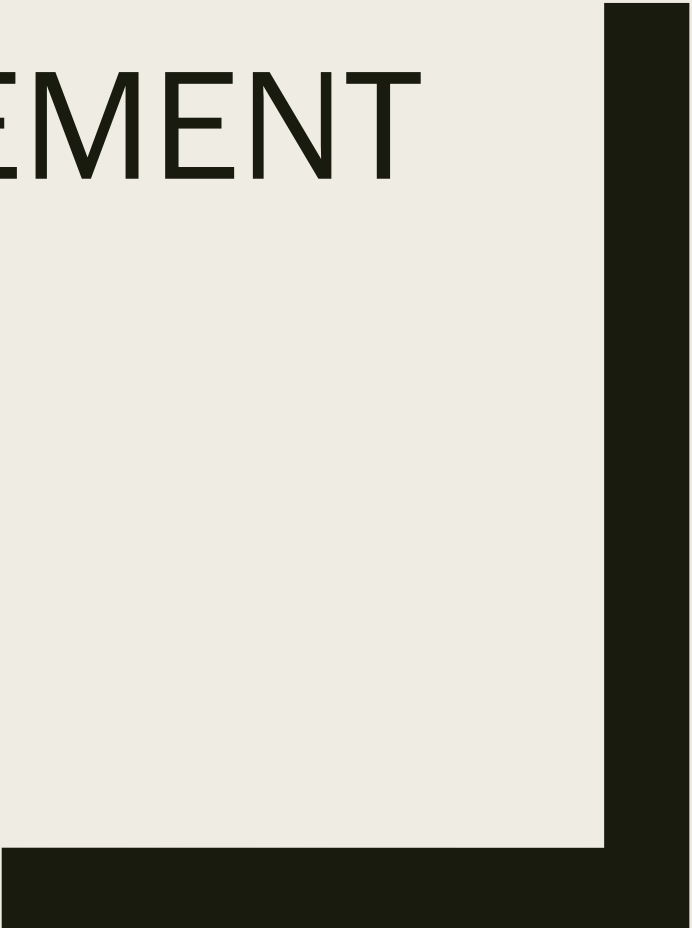




FINANCIAL MANAGEMENT

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Financial Management

- ❑ Acquisition of assets
- ❑ Financing of assets
- ❑ Management of assets

Decision Functions

■ Investment Decision

- ✓ Size of firm
- ✓ Composition of assets
- ✓ Disinvestment

■ Financing Decision

- ✓ Capital structure
- ✓ Dividend & RE policy
- ✓ Acquisition of needed fund

■ Asset Management Decision

- ✓ Focus more on CA

The Goal of the Firm

- ☐ Profit Maximization (Short term)
- ☐ Wealth Maximization (Long term)
 - EPS
 - Market price appreciation

Shortcomings of Profit Maximization

- ☐ Managers may continue to show profit by issuing stock
- ☐ Decrease in EPS

Shortcomings of EPS Maximization


- ☐ Duration and TVM
- ☐ Risk of earnings
- ☐ Dividend policy

Market price appreciation and value creation should be the ultimate goal of the firm.

Agency Conflict

- ❑ Agents are appointed by the principal to act on behalf of the principal
- ❑ Agents are managers
- ❑ Principals are owners

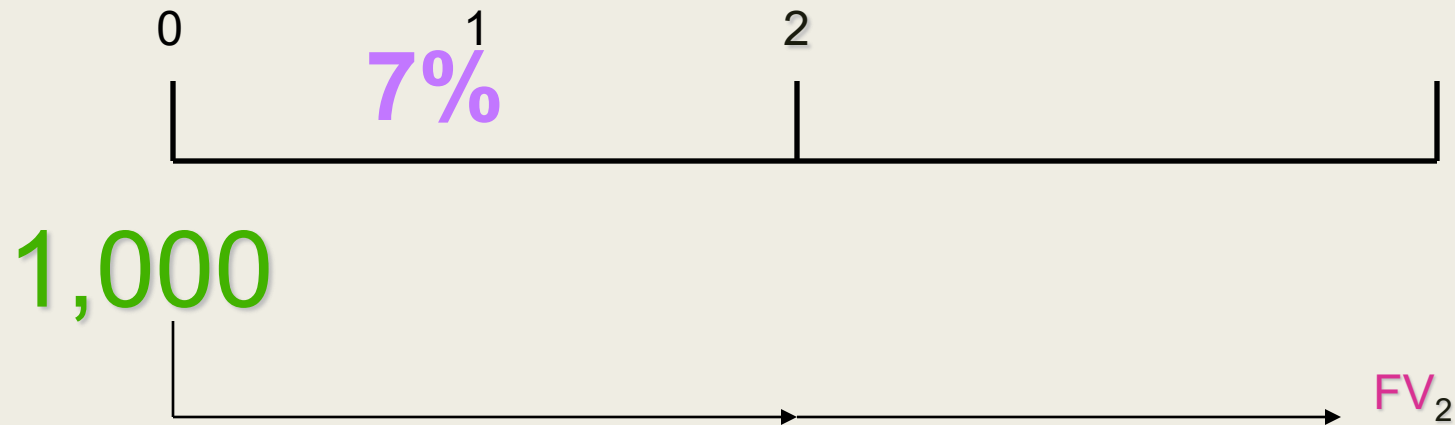
- Agency conflict arises between agents and principal
- Conflict of goals- profit maximization vs wealth maximization
- Appropriate incentives to resolve conflicts
- Monitoring and Governance & disclosures
- Efficient Capital Market
- Managerial Labor Market
- Social Responsibility (stakeholders)



Time Value of Money

Future Value of present Single Deposit (Problem1)

Assume that you deposit Tk.1,000 at a compound interest rate of 7% for 2 years. What will be the future value after 2 years?

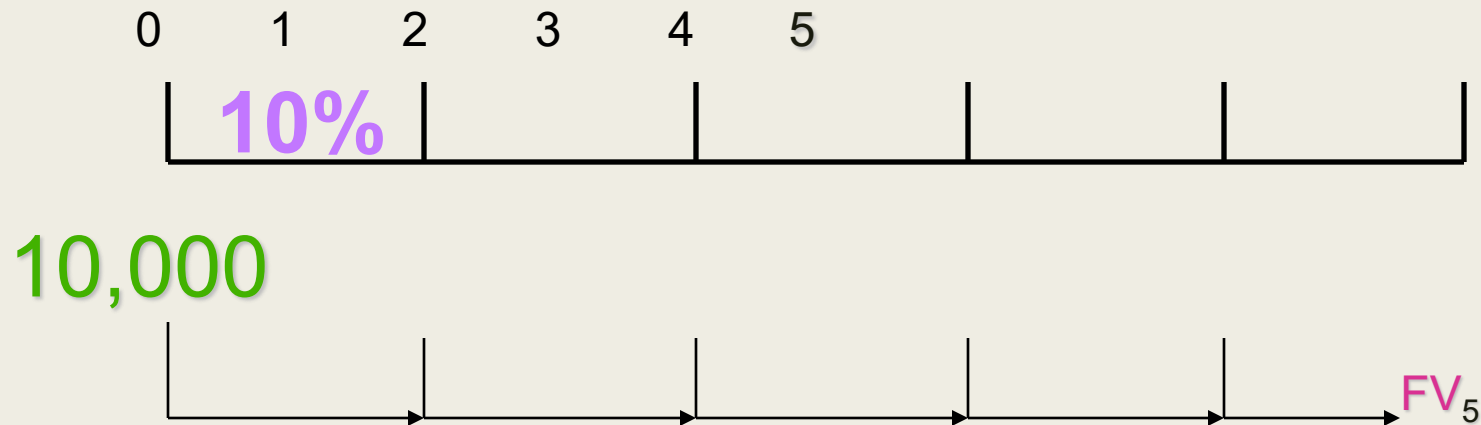


Future Value of present Single Deposit (Problem1)

$$\begin{aligned}\square \quad FV &= PV(1+i)^n \\ &= 1,000(1+0.07)^2 \\ &= 1,145\end{aligned}$$
$$\begin{aligned}\square \quad FV &= PV (FVIF_{i,n}) \\ &= 1,000*(FVIF_{7\%,2\text{yrs.}}) \\ &= 1,000*(FVIF_{7\%,2\text{yrs.}}) \\ &= 1,000*1.145 \\ &= 1,145\end{aligned}$$

Future Value of present Single Deposit (Problem2)

Mr. Jabir wants to know how large his deposit of Tk.10,000 today will become at a compound annual interest rate of 10% for 5 years.



Future Value of present Single Deposit (Problem2)

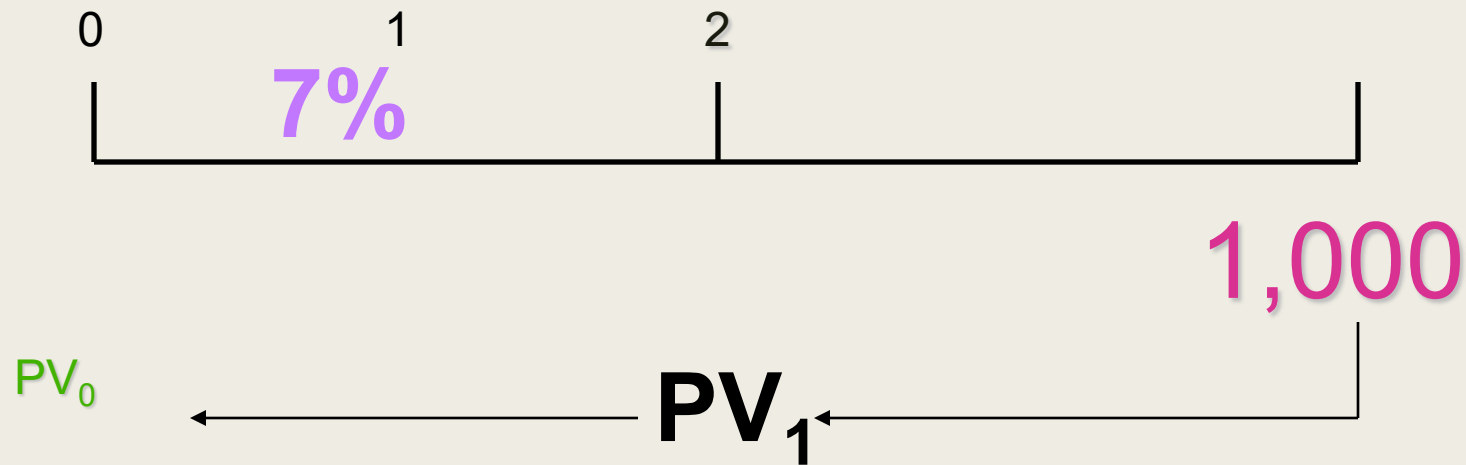
$$\begin{aligned}\square \quad FV &= PV(1+i)^n \\ &= 10,000(1+0.10)^5 \\ &= 16,105.1\end{aligned}$$
$$\begin{aligned}\square \quad FV &= PV (FVIF_{i,n}) \\ &= 10,000*(FVIF_{10\%,5\text{yrs.}}) \\ &= 10,000*(FVIF_{10\%,5\text{yrs.}}) \\ &= 10,000*1.611 \\ &= 16110\end{aligned}$$

Future Value of present Single Deposit (Problem3)

- Mr. and Mrs. Kabir are saving for retirement and currently have Tk.127,833.56 as savings.
- This couple will retire 25 years from today. They expect that a 6% rate of return is appropriate for their risk level given historical returns.
- Calculate how large the account is expected to grow.

Present Value Single Deposit (Problem4)

Assume that you need Tk.1,000 in 2 years.
Let's examine the process to determine how much you need to deposit today at a discount rate of 7% compounded annually.

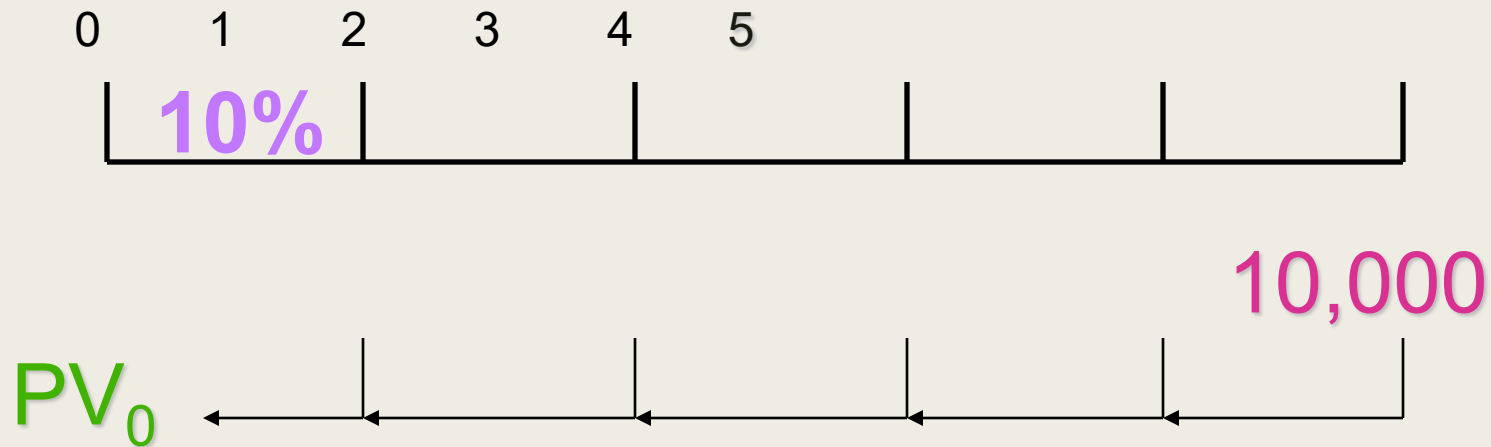


Present Value Single Deposit (Problem4)

$$\begin{aligned}\square \quad PV &= FV/(1+i)^n \\ &= 1,000/(1+0.07)^2 \\ &= 873.44\end{aligned}$$
$$\begin{aligned}\square \quad PV &= FV*(PVIF_{i,n}) \\ &= 1,000*(PVIF_{7\%,2\text{yrs.}}) \\ &= 1,000*0.873 \\ &= 873\end{aligned}$$

Present Value Single Deposit (Problem5)

Mr. Jabir wants to know how large of a deposit to make so that the money grows to Tk.10,000 in 5 years at a discount rate of 10%.



Present Value Single Deposit (Problem5)

$$\begin{aligned}\square \quad PV &= FV/(1+i)^n \\ &= 10,000/(1+0.10)^5 \\ &= 6,209.21\end{aligned}$$

$$\begin{aligned}\square \quad PV &= FV*(PVIF_{i,n}) \\ &= 1,000*(PVIF_{10\%,5\text{yrs.}}) \\ &= 1,000*0.621 \\ &= 6,210\end{aligned}$$

Present Value Single Deposit (Problem6)

- Mr. and Mrs. Kabir are expecting to save Tk.100,000 to use to travel the world upon retirement. They would like to know how much they need to set aside today to reach this goal.
- They will retire 20 years from today and think that a 6% rate of return is appropriate for their risk level. Calculate how much they need to set aside today.

Double Your Money!!!

How long does it take to double Tk.5,000 at a compound rate of 12% per year (approx.)?

We will use the “*Rule-of-72*”.

$$n=72/i$$

$$=72/12 = 6 \text{ years!}$$

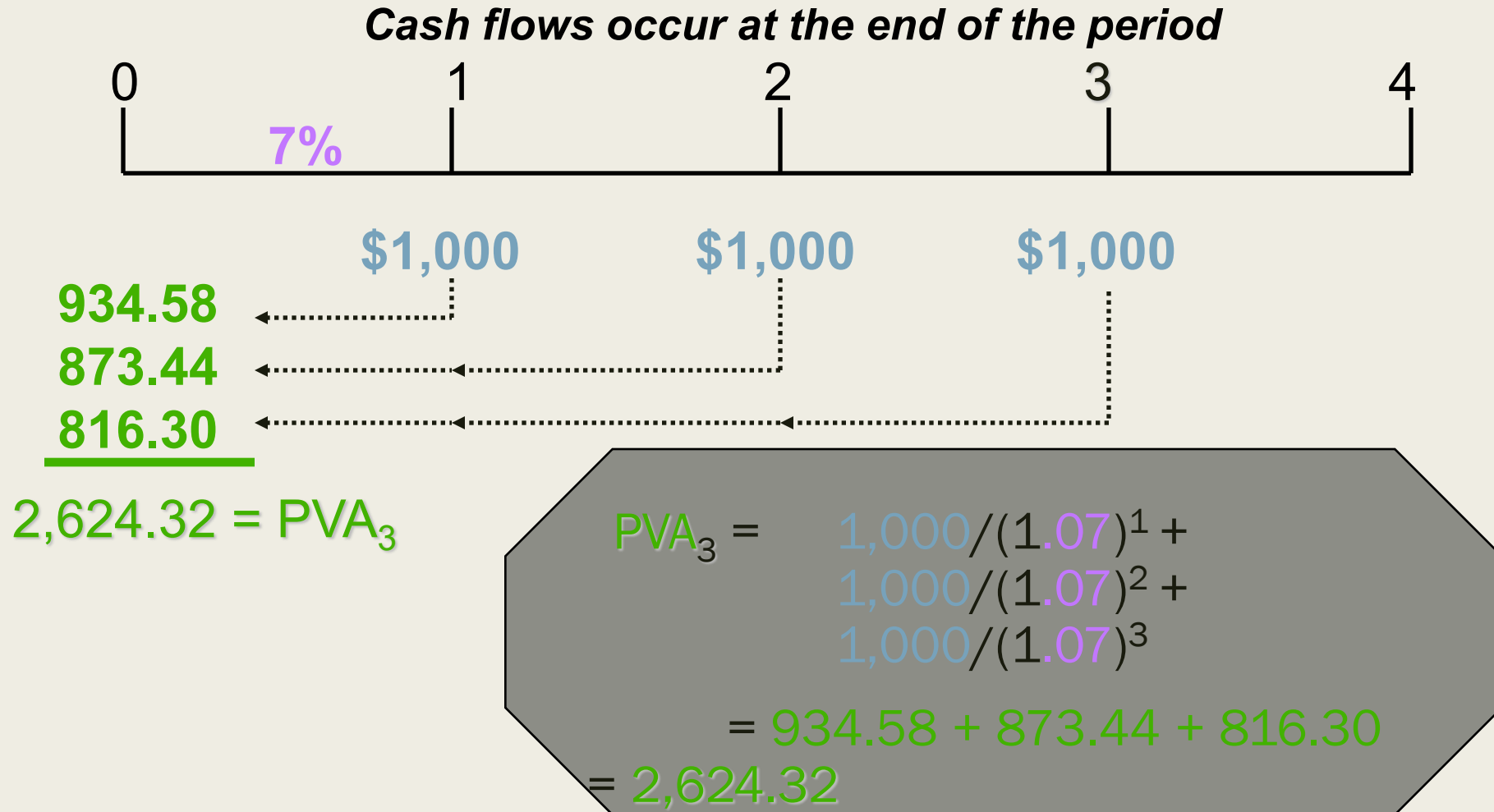
Double Your Money!!!

What if you were given the periods (years) and wanted to solve for the interest rate? Wouldn't it be the same concept for the rule of 72?

$$i = 72/n$$

$$= 72/6 = 12\%$$

Ordinary Annuity – PVA (Problem7)



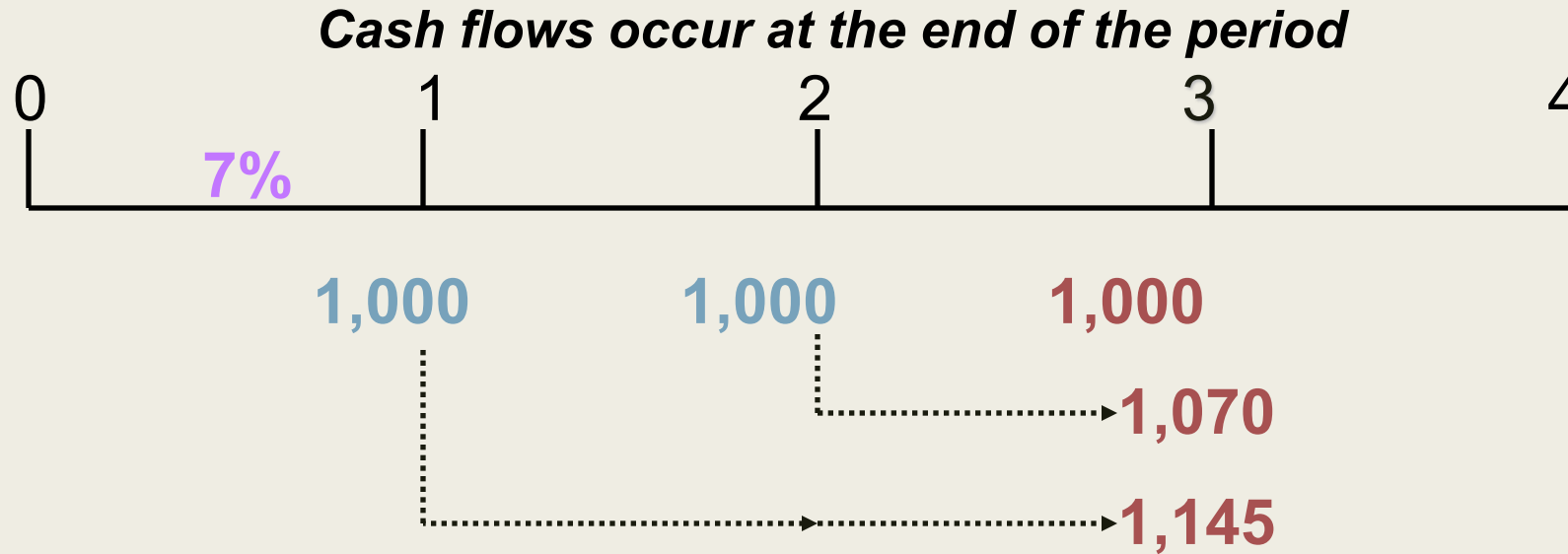
Ordinary Annuity – PVA

$$\begin{aligned}\square \quad PVA &= R \cdot (PVIFA_{i,n}) \\ &= 1,000 \cdot (PVIF_{7\%, 3\text{yrs.}}) \\ &= 1,000 \cdot 2.624 \\ &= 2624\end{aligned}$$

Ordinary Annuity – PVA (Problem8)

- Mr. and Mrs. Kabir are trying to build savings to use in the future. They would like to know how much they need to set aside in a single lump sum today to be equivalent to investing Tk.10,000 each year starting one year from today to reach this goal.
- They will use the money 20 years from today. They think that a 6% rate of return is appropriate for their risk level.
- Calculate the equivalent present value of this ordinary annuity stream.

Ordinary Annuity – FVA (Problem9)



$$\begin{aligned} FVA_3 &= 1,000(1.07)^2 + \\ & 1,000(1.07)^1 + 1,000(1.07)^0 \\ &= 1,145 + 1,070 + 1,000 \\ &= 3,215 \end{aligned}$$

$$\underline{3,215 = FVA_3}$$

Ordinary Annuity – FVA

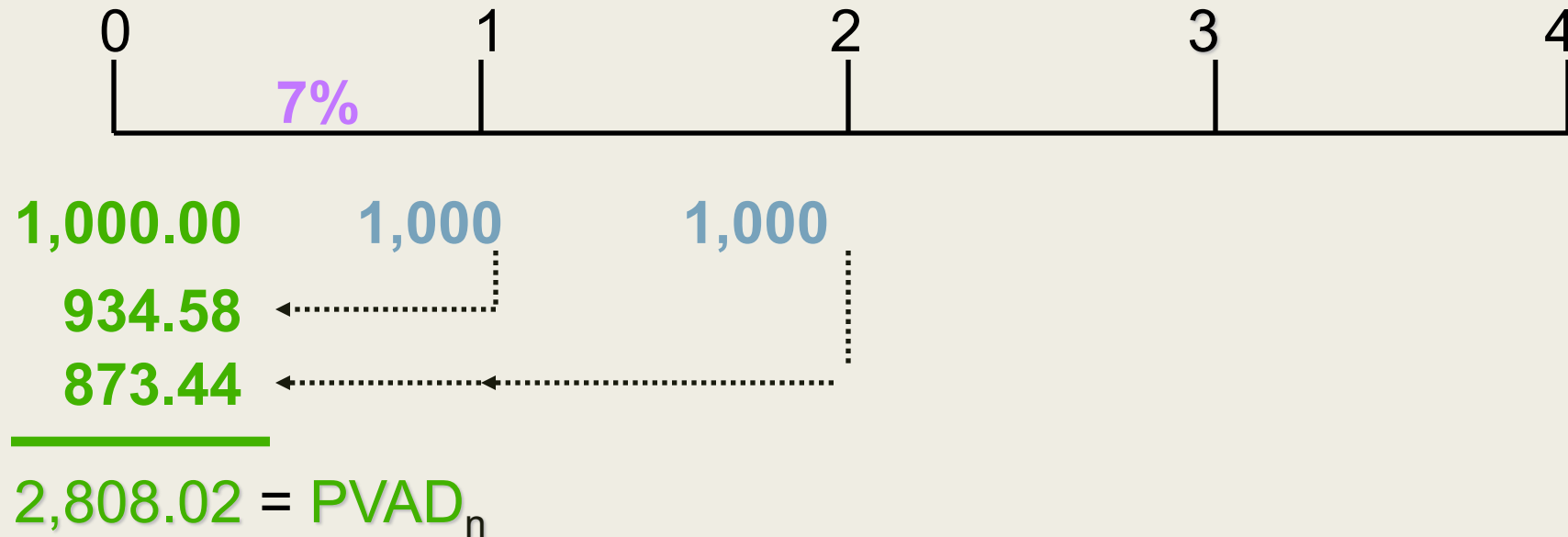
$$\begin{aligned}\square \quad \text{FVA} &= R * (\text{FVIFA}_{i,n}) \\ &= 1,000 * (\text{FVIF}_{7\%, 3\text{yrs.}}) \\ &= 1,000 * 3.215 \\ &= 3215\end{aligned}$$

Ordinary Annuity – FVA (Problem10)

- You are trying to build a saving to use in the future. You have decided to put Tk. 10,000 in a DPS account each year starting one year from today to reach this goal.
- You will use the money 20 years from today and a 6% rate of return is appropriate for their risk level.
- Calculate the future value of this ordinary annuity stream.

Annuity Due – PVAD (Problem 11)

Cash flows occur at the beginning of the period



$$\text{PVAD}_n = 1,000/(1.07)^0 + 1,000/(1.07)^1 + 1,000/(1.07)^2 = 2,808.02$$

Annuity Due– PVAD

$$\begin{aligned}\square \text{ PVAD} &= R * (\text{PVIFA}_{i,n}) * (1+i) \\ &= 1,000 * (\text{PVIFA}_{7\%, 3\text{yrs.}}) * (1+i) \\ &= (1,000 * 2.624) * 1.07 \\ &= 2624 * 1.07 \\ &= 2,807.68\end{aligned}$$

Annuity Due– PVAD (Problem12)

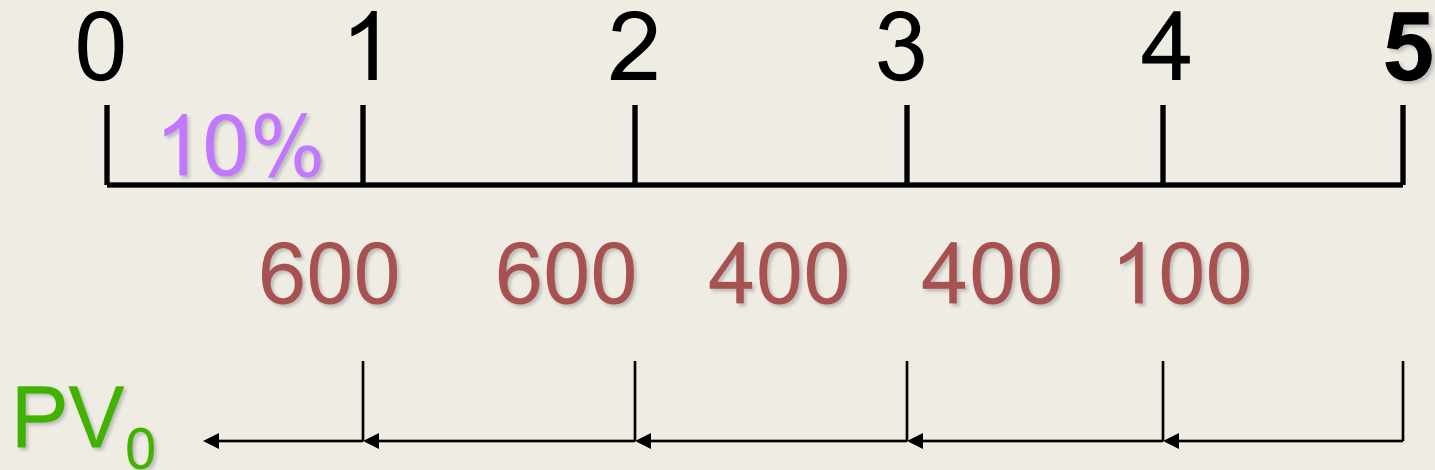
- You are trying to have some savings to use in the future. You would like to know how much you need to set aside in a single lump sum today to be equivalent to investing Tk.10,000 each year in a DPS account *starting today* to reach this goal.
- You will use the money 25 years from today and a 6% rate of return is appropriate for the risk level.
- Calculate the equivalent present value of this annuity due stream.

Annuity Due– FVAD (Problem13)

- You are trying to build a saving to use in the future. You have decided to put Tk. 10,000 in a DPS account each year starting today from today to reach this goal.
- You will use the money 20 years from today and a 6% rate of return is appropriate for their risk level.
- Calculate the future value of this ordinary annuity stream.

Mixed Flows Example (Problem 14)

You will receive the set of **cash flows** below.
What is the **Present Value** at a discount rate
of **10%**.



Effective Annual Interest Rate (Problem 15)

You have Tk.1,000 in a savings deposit account at a bank. The interest rate is 6% compounded monthly for 1 year. What is the Effective Annual Interest Rate (EAR)?

$$\begin{aligned}\text{EAR} &= (1 + 0.06 / 12)^{1 \times 12} - 1 \\ &= 1.0617 - 1 = .0617 \text{ or } 6.17\%\end{aligned}$$

Effective Annual Interest Rate (Problem 16)

You have Tk.1,000 in a savings deposit account at a bank. The interest rate is 6% compounded weekly/quarterly for 1 year. What is the Effective Annual Interest Rate (EAR)?

Loan Amortization (Problem 17)

You are borrowing Tk.10,000 at a compound annual interest rate of 12%.
Amortize the loan if annual payments are made for 5 years.

Step 1: Payment

$$PV_0 = R (PVIFA_{i\%,n})$$

$$10,000 = R (PVIFA_{12\%,5})$$

$$10,000 = R (3.605)$$

$$R = 10,000 / 3.605 = 2,774$$

Step 2: Create a table

<u>Period</u>	<u>Beginning Bal</u>	<u>Payment</u>	<u>Interest in Period</u>	<u>Principal in Period</u>	<u>Ending Balance</u>
0					\$ 10,000.00
1	\$ 10,000.00	\$2,774.10	\$ 1,200.00	\$1,574.10	\$ 8,425.90
2	\$ 8,425.90	\$2,774.10	\$ 1,011.11	\$1,762.99	\$ 6,662.91
3	\$ 6,662.91	\$2,774.10	\$ 799.55	\$1,974.55	\$ 4,688.37
4	\$ 4,688.37	\$2,774.10	\$ 562.60	\$2,211.49	\$ 2,476.87
5	\$ 2,476.87	\$2,774.10	\$ 297.22	\$2,476.87	\$ 0.00