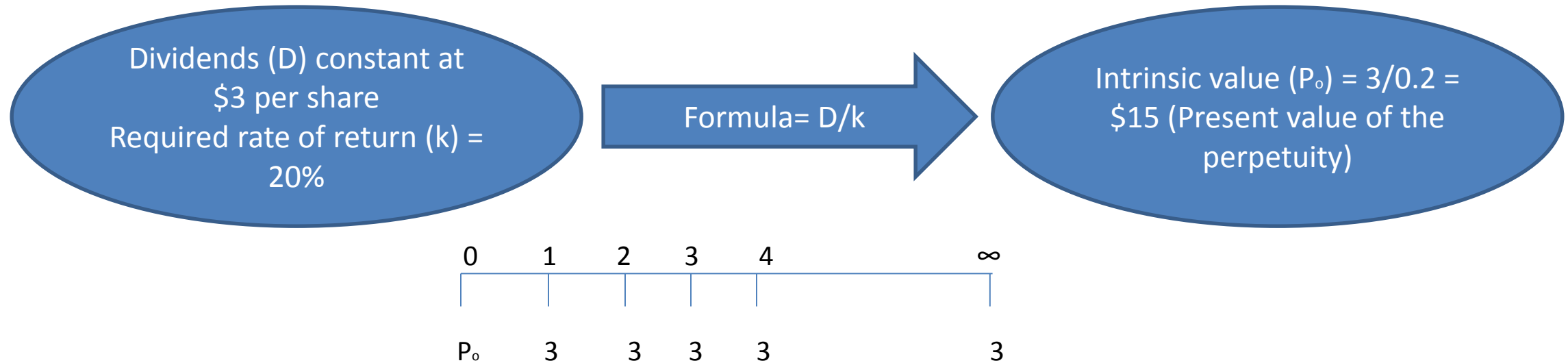# Dividend (cash flow) discount models

- Cash flow data can be employed from any point on it, sales/EBITDA/Net Income/EPS/Dividends depending on which series is more reliable for the company at hand.

  - Dividend Yield   = Dividend/Price
  - Dividend Payout   = $ Dividends/$ Earnings (per share)
  - Retention Ratio (b)   = 1 – Payout Ratio

- Basic idea is that intrinsic value for a stock is the present value of all future cash flows discounted appropriately.

- Interaction between dividend (or other) payout policy, buybacks, price targets and analyst forecasts

Valuation of constant cash flows

Dividends (D) constant at $3 per share
Required rate of return (k) = 20%

Formula= D/k

Intrinsic value (P_0) = 3/0.2 = $15 (Present value of the perpetuity)

0	1	2	3	4	∞

P_0 3   3   3   3   3

- Compare Intrinsic Value(15) vs. Market Price ($35)
- **DECISION: DO NOT BUY**
- Typically used for preferred stock where dividend flows exist and are predictable
- Realistic specification of dividend policy for common stock ?
- What if dividends tend to grow?

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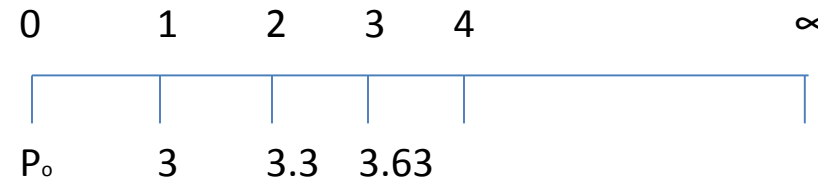
Valuation of cash flows which grows at constant rate

- Valuation of infinite cash flows

$$Value = \frac{D_1}{(1+k)^1} + \frac{D_2}{(1+k)^2} + ... + \frac{D_\infty}{(1+k)^\infty}$$

assume that the dividends grow at a constant rate of **'g'**

$$Value = \frac{D_0(1+g)}{(k-g)} = \frac{D_1}{(k-g)}$$

- Say dividends grow at constant rate g = 10%

```
        0      1      2      3      4                    ∞
        |------|------|------|------|--------------------|
       P₀      3     3.3   3.63
```

- Intrinsic Value (P_0) = $\dfrac{3}{(1.20)}$ + $\dfrac{3.3}{(1.20)^2}$ + $\dfrac{3.63}{(1.20)^3}$ + ……. = $\dfrac{3}{(0.2-0.1)}$ = $ 30