Proposition: The future value $V(t)$ increases if any one of the parameters $m, t, r,$ or P increases

$$V(t) = P(1 + r/m)^{tm}$$

Proof

- The proof is clear for t, P, r
- Let $m < k$

$$(1 + r/m)^m < (1 + r/k)^k$$

$$(a+b)^n = \sum_{i=0}^{n} C_n^i \, a^i \, b^{n-i}$$

$$\left(\binom{n}{i}\right)$$

(Formula of Binomial of Newton)

$$(1+x)^\alpha = 1 + \alpha x + \frac{\alpha(\alpha-1)}{2!} x^2 + \frac{\alpha(\alpha-1)(\alpha-2)}{3!} x^3 + \cdots$$