(Principle of Corporate finance)

Chapter - 1

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→ CEO or Manager is replacable but owner is not.

→ Book value? Market value? good will?

→ depend on historical. → fundamental value. → Cash loss

non-fundamental → investment

Assets → investment
Liabilities → finance
green field ?

financial decision can affect value.

Latent equity / Patent

Balance sheet.
Depreciation

→ Objective of manager? (Share price) → maximisation of firm value.

Win → 100 +
loss → -50
} Expected value → 25 (How?)

Higher risk → Higher return → risk lover

Finance / Economics

* Face Value → Shares issued by which price initially (legally) is called face value. (Listed in certificate)

* Share primium → Amount of price which is more than face value.

* Dividend → profit given by company to shareholders
(always base on face value)

* Market value → Trading price of a share.

net Cash flow = Cash inflow - Cash outflow

* Book Value:-

Book Value per share = (Total Assets − Total Liabilities) / (Total numbers of shared issued by the company)

BV = TA − TL

(cash < 1 year) ↑ (current) or (non-current) ↑ (cash > 1 yr)

(owners + investors)

(any type of loan)

Assets = Equity + Liabilities

- Assets ↓ Resources controlled by a firm/individual that help generate future cash flows
- Equity ↓ (ownership) or net worth ↓ (assets − liabilities)
- Liabilities ↓ obligations of an individual or firm

Assets = Equity + Liabilities

- Assets
  - current (inventories)
  - non-current (Land, building)
- Equity
  - preferred (friends, family, strategic partners)
  - common (retained earnings / reserves & surplus) and equity share capital.
- Liabilities
  - current
  - non-current

* Depreciation → fall in the value of assets.

or loss in the value of capital assets due to normal wear and tear during production process.

(Market Value > Book Value)

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Expected Value.

$$EV = \left(\text{Probability of win}\right) \times \text{amount to win} - \left(\text{Prob. of loss}\right) \times \text{Amount to lose}$$

6/09/23

Short Note → 06/09/23

Residual Cash flows
↙ ↘
owner investor.

role of finance manager

Claim → Govt. tax.
equity owner/investor.
lenders.

→ (Lender's returns are fixed)
→ sure shot → risk free.

~~more out~~ more outcome → more risk
less outcome → less risk.

Technical analysis? → Capture temporary demand supply → momentum trend.
(fundamental analysis) → Cash flows.

hurdle rate

Equity investors expect higher returns.

cost of capital

risk aver, Government Securities?

minimum rate return + interest ? → cost of debt + cost of equity → dividend + capital return

→ e-shocks?, board-of-directors?

market-discipline,

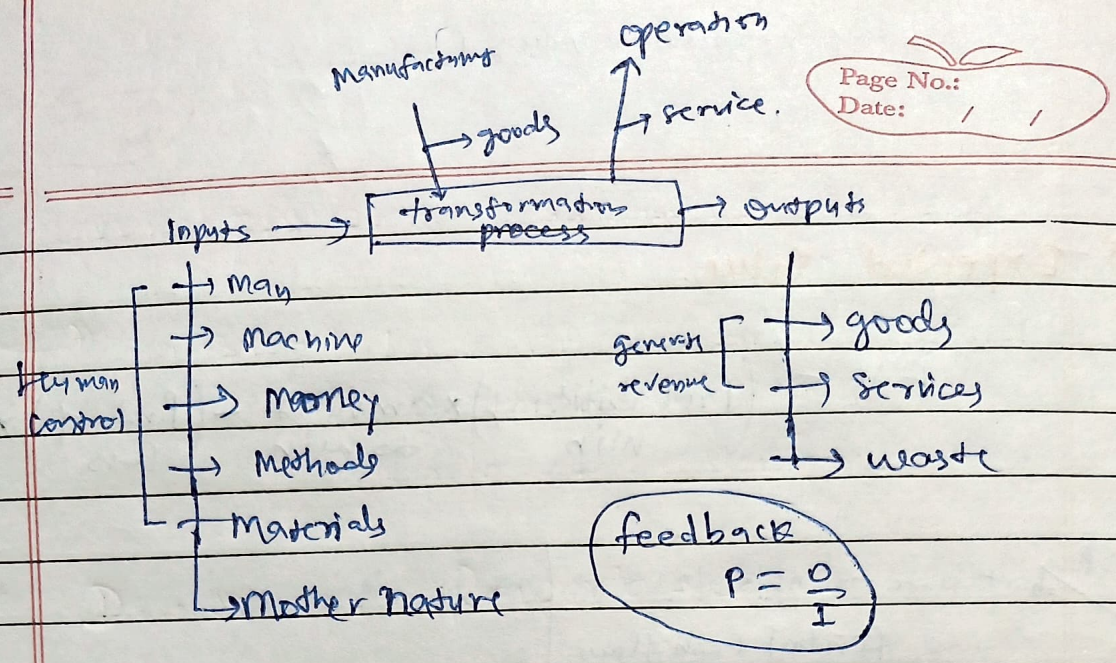
agency cost?

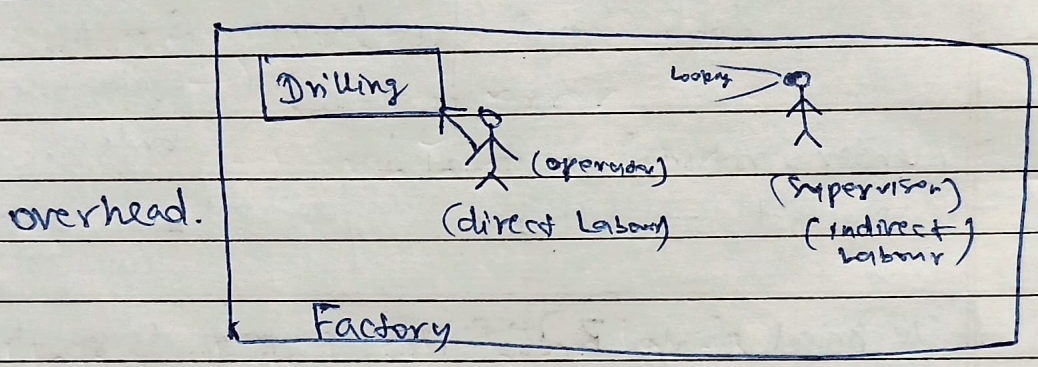
Leverage → equity return
capital return

Deepu philip.
(productivity)

~~what~~ you can't manage
what you can't measure.

Myopic → productivity = O↑ / I↓ (95%) → Lean (3%); BPR (1%) → cannot approach; ↑↓ → rationalization / sustainability





∴ overhead.

WAG → Wild, Guess, Approximate

EWAG → Educated

SWAG → Sophisticated.

* Lean Manufacturing *

→ Lean → reduce wastage in Company and increase customer value.

→ 7 forms of waste. (T I M W O O D)

T → transport + inventory
I → inventory + motion
M → motion
W → waiting
O → over operation + overproduction
O → overproduction
D → Defects

Correction → repair or rework.

Motion

Overproduction

(Transporting) Conveyance → wastage effort to transport material

inventory → excess inventory (store section)

processing → unnecessary work

Waiting → doing unnecessary work

→ non-work time waiting for supply

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* Transportation (over) or Conveyance.

→ Causes → reverse flow
→ Zig-zag process layout
→ Multi-Level shop floors.
→ Non-availability of (trolly...)

* Inventory (storing more stocks than needed)

→ Raw material
→ Work in Progress
→ FG
→ Scrap (bekar maal)

→ Cause → Bulk purchasing.
→ Variety of items (sare rakhna chahte)
→ Improper line balancing

* Motion or Movement.

→ Excessive movement of operators (human resource)

Cause → Non-availibility of proper tools
→ Work station (ditted)

* Waiting (material, machine, employee → waiting)
→ time wastage of these

Cause → Communication Gap.
→ Lack of information

* Over production.

→ Cause → fluctuating demand
improper supplier relation

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* Over processing (unwanted processing / incorrect processing)

→ cause → Lack of awareness / Skill
→ Improper tools
→ Lack of standards.

* Defects or Rework / Repair

→ Cause → → Unskilled
→ Quality error
→ Machine failure.

* Henry Ford on Standards
(or against inconsistency)

Muri → unreasonable or overburden

* 5 S's of Lean

1. Sort = Seiri
2. Shine = Seiton
3. Stabilize = Seiso
4. Standardize = Seiketsu
5. Sustain = Shitsuke

* 3 M's of of Lean

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* 3 M's of Lean (3 enemies) or wastage

Mura → (un-even-ness) → improper work distribu
un-balanced.

Muri → (overburden) → machine overbu → duration dec.
(unreasonable)

Muda → Wastage (TIMWOOD)

* Laying out a lean production facility.

Process Layout → AICD functional / job shop Layout.

→ similar equipments placed together based on their functions.

(line layout / operation sequence) Product Layout	Process Layout
→ input → output	High flow time
(Low total flow time)	→ extensive material movement.
(Henry Ford) → line balancing approach used	→ more common in batch operations (group of similar products produced at multiple work
→ none / little variety possible	Very high degree of variety in the products
→ less flexibility to change	flexibility and adaptation to change
→ more common in batch operations.	
→ one machine failure stops the line (whole line).	do not affect process
→ simple planning	much paper work and planning
→ low work in progress.	high work in progress.
→ low skills required in highly standardized products	Skilled workers req
→ machines are arranged acc to their function	machine & equipm are arranged acc to their function

software to calculate optimum process layout
→ CRAFT (computerized Relative allocation of facilities technique)
→ CORELAP.

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* Product family → group of products that normally look similar and required same processing steps to produce.

* Group-Technology (GT) →
Classifying and grouping similar components together based on design, shape or manufacturing process.

→ Cell layout = product layout + varied (operation seq. & direction of flow)

* SMED (Single minute exchange of Dies)

→ includes → 7 steps

(i) observe the current methodology

(ii) Separate the internal and external activity.

(iii) Convert internal to external activity

(iv) Streamline the remaining internal activity by analysing (value added) and NVA.

(v) Streamline the external activities (to reduce ...

(vi) Document the procedure (record the activity)

(vii) Do it all again.

→ Target set-up time in SMED < 10 min.

→ computer system based

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MRP (Material Requirement Planning)
→ Study of material requirement.
→ Demand Dependent Demand items

→ MPS (Master production Schedule)
↳ according to demand material ordered. . .

class

Objectives

→ ~~Determ~~ quantity & timing of finished goods demand

→ It computes inventories

* Primary economy
  - → Agriculture (earth related)
  - → Mining

Secondary economy
- → Manufacturing
- → Conversion to goods

Tertiary economy
- → Serice (Tourism)
- → 3PL

* GDP per capita = $\frac{GDP}{population} = \frac{GDP}{hours} \times \frac{hours}{workers} \times \frac{workers}{populations}$

employment rate.

* Foreign investments.

(i) Efficiency →
& same production with less input of 5 m's (Man, Materials, Methods, Monies.

(ii) Effectiveness → plan vs actual

(iii) Quality → (meet customer expectations.)
→ Satisfy in most area.
perceived quality → CCD

(iv) innovation → commercialisation

(v) Product as a service → innovation → product, process, service.

invention → innovation → Diffusion (Adaptation)
new idea. (commercialisation) ↓ productivity.
↓
Engineering & Management.

(vi)

* Three R's

Reduce , Reuse , Recycle.
↓ ↓ ↓
waste extra usage use the same material.

* Eco-Efficiency → being ~~doing~~ "Less bad".

- 2 more R's

Refine Recover
↓ ↓
improve performance gold and silver from circuit goods.

- 1 more R

Re-innovate → Innovate something new from already innovated product.

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cradl-to-cradle → no waste (most use of old one

* Lean manufacturing continues...

Push control system	pull control system.
→ MRP software system use this control system.	→ it is also referred to as kanban system (paper authorisation or approval)
→ easy but produces lots of inventory and imbalance.	→ Approval in the form of light (ANDON)
→ both information and materials are pushed forward.	→ material pushed and information pulled. → only work on flow system.

* Bottleneck → It is a stage or (stages) that slow down the process in the process that slow down the production of good.

* CONWIP → Constant work in progress.
(it set a target inventory) → it's con

→ The CONWIP control gives the a local global information flow (like the drill sergeant) and the Kanban Control System gives a local flow of information.

global info. is supplimented by the local inform...

When push pull control system is implimented correctly then it is called Just-In-Time (JIT) manufacturing system. (product arrives as it is needed)

→ JIT system works well when
the flow is uniform
and product mix is stable

→ buffer → used to adjust variation is production process.

→ TaKT → rhythm. (t_k) → (time/piece)

$$t_k = \frac{\text{Available operating time (sec/day)}}{\text{Daily demand (pieces/day)}}$$

* The five (5) steps of lean implementation

Step ① → Specify Value: (meeting customers expectation, needs at specific time and price).

Step ② Map → three critical management task.
(i) Problem-solving task.
(ii) The information management task.
(iii) The physical transformation task.
creating map of current and final state and eliminate waste by categorizing them.

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Step-3 → Flow → eliminate functional barrier and develop a product-focused organisation → that improve lead time (dramatically).

Step-4 Pull → Let the customer pull products as needed, eliminating the need for a sale-forcast.

Step-5 Perfection → There is no end to the process of reducing effort, time, space, cost and mistakes.

* Andon Lights → flashing lights used to indicate production status in one or more work Centres.
green → No problem
yellow → Situation requires attention
red → production stopped, attention urgently needed.

(Jidoka) Autonomation → Semi-automatic work.
Poka-yoke → technique to prevent mistakes.
Poka-yoke → where only warning is provided.

Flexible manufacturing System → Change-over time ↓ response time ↑.

heijunka → Production schedule to distribute Kanban cards in efficient manner.

→ Demand driven.

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KANBAN → (signal board).

Consumer
↓
~~Vendor~~ warehouse
↓
~~manufacturing~~ department → with the help of card (kanban card) placed in the bin.
↓
Inventory
↓
supplier.

→ Advantages → Reduce wastage, inventory.
→ increase effectiveness and efficiency.
→ reduces total cost.

(P) Production kanban
↓
production of ~~fixed~~ amount of goods (W/C to demand)

~~Transportation~~ kanban (T)
transportation of full container to the down-stream.

Toyota rules for KANBAN.
→ (i) each process issues requests.
(ii) production A/c to quantity and sequence of requests.
(iii) No item made or transport without request
(iv) process must not send a defective item.
(v) limiting pending request.

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DPhilip class.

process is perfectly scripted → person independent
practice → person dependent & varies by org..

Process planning → (i) customer → decide
(ii) what are your ~~dealing~~ selling → strategy
(iii) How will you satisfy cont customer.

Reasons of outsourcing.
(i) cost → cheaper than current operation
(ii) Capacity → sufficient capacity.
(iii) Quality → in-house allows better quality control.
~~(iv)~~

→ Assembly → you have the components.
→ fabrication → How to make those components. → (machine) resource + time.

* Lean Manufacturing Conti....

CNC (computer numerical Control) machine.

→ It processes a ~~materials~~ piece of material to meet specifications by following coded programmed instructions without a manual operator ~~instructions~~.

* steps involve in gidoka (automation)
(i) discovering abnormalities → (ii) Stoping the process
(iii) (immidiate fixing the problem) ← (iv) (investigation & solving the root cause)

(3) Combina

Plant - Layouts.

(i) process layout
(ii) Product layout
(iii) Combination Layout → Combines the advantages of both product & process Layouts.

(iv) Fix position layout.
→ In this ~~type~~ Layout product fixed at a position & (equipments and machines moves.

(v) Kaizen Blitz (2-10 days)
→ rapid improvement effort designed to produce results within a few days. (rapid quick solution)

Availability factor = effective time / total time planed

Quality factor = number of good product / total products made

performance rate → Actual machine speed / Designed machine speed

$$\frac{\frac{1}{1+r}}{1-\frac{1}{1+r}} = \frac{\frac{1}{1+r}}{\frac{r}{1+r}} = \frac{1}{r}$$

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$(1+r)^t$ = discount factor

Abhinav tripathi

→ Cash flow discount (Present Value) = $\frac{\text{interest Value}}{(1+r)^t}$ r = % interest, t = time period.

present value of cash flows (inflow & out flow) = PV − investment (could be (+), (−))
NPV

→

∴ value → doller → today & tomorrow

(return → intrinsic)

(opportunity cost → depend on risk of project)

$$\text{at } t=\infty \quad \sum_{t=1} P = \left(\text{PV of perpetuity} = \frac{C}{r} \right)$$ r = interest rate.

→ for infinite time.

at $t=\infty$ $\sum_{t=t+1} P$ NPV for $= \frac{C}{r} - \frac{C}{r}\left(\frac{1}{1+r}\right)$.

→ projects → $C_0 = (+ve)$

Borrow → $C_0 = (+ve)$

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Deepy philip (IMPORTANT)

Transportation → Railroad → less value/flexible
→ bulk products

→ Highways → flexible
→ less distance

→ water → cheapest
→ least speed (high volume)

→ Air → less time
→ High weight

→ Pipe Line → liquid form, less operating cost

Transportation Mode formula. (standard)
→ number sources → number of destination
at minimum possible cost.
important

Minimum Transportation cost. (Least Cost Method)

From \ To	W_1	W_2	W_3	Supply
P_1	8	5	6	120
P_2	15	10	12	80
P_3	1 (3)	9	10	80
Demand	180	70	60	

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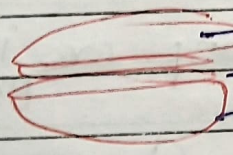
Process strategy → Vertical integration, Capital intensity, process flexibility, customer involvement.

→ How much of the work to be done outside the firm depends on:
cost, capacity, Quality, Speed, Reliability, expertise.

→ At Analyze design spec: → Assembly chart
→ Operations process chart
→ Process flowchart

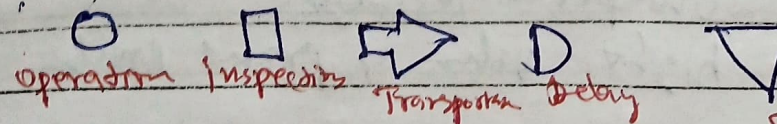
* Assembly chart → to show the relationship of each component part to its parent assembly. (not include instruction for prep.



ex → Burger

* Operations process chart
→ show how each item is to be fabricated. (contains more informations than assembly chart)

* Process flow chart.
→ It describes the processes using five standard symbols to highlight non productive activities.



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Types of processes (production)

(1) Projects
(2) Batch Production.
(3) Mass Production
(4) Continuous production

(1) Projects → complex, one-at-a time product.

(fixed position layout is used in projects, where the product can not move.)

→ Contracted type ...

(2) Batch production (Job shop or intermitted production)
(flexible)

→ low in volume, fluctuating demand.

→ highly skilled worker needs.

→ variety of items can be produced.

(3) Mass Production (flow lines / assembly lines)

→ standardized products.
limited skills
high efficiency
low per-unit cost
highest value of product produced.

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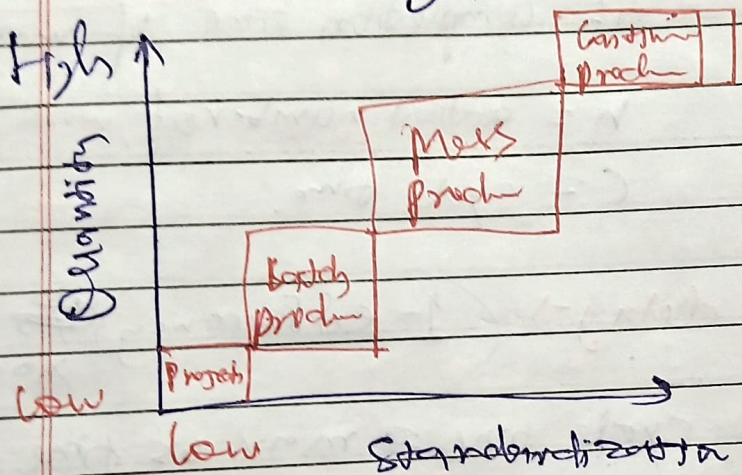
→ Continuous Production
→ Standardized ⇒ high volume commodity prod (very)
→ runs 24 hrs a day → process industries
→ crude oil refineries
→ output is continuous
→ efficiency, ease of control, capacity ~~to~~ benefits



Factory Layout Basics

Work-station → area where at least one worker or machine is required

→ Line Balancing → process of equalizing the amount of work at each work stations.

if there two constraints (i) Precedence → diagram
(ii) Cycle time

Max (individual time at each workstation) ← → = net available time / no of unit prod

→ lead time / flow time → time required to complete an item.

Line efficiency $= \dfrac{\sum_{i=1}^{j} t_i}{nC}$

~~WE~~ $\#WS = \dfrac{\text{~~total time available~~ } \sum t_i}{\text{Cycle time } (C)}$

t_i = completion time of work elem i, j.

n = actual number of work stations

C = cycle time.

* Balance delay → $(1 - \text{efficiency}) \times 100\ \%$

→ actual cycle time = max ws time on the line.

→

* computerized line balancing

→ COMSOAL] can assign hundreds of work elements to work stations on assembly line.

→ ASYBL]

→ Most common is ranked positional weight technique.

Rank positional weight technique

(i) find "C" → (ii) construct the precedence network

(iii) positional weigh = element's operation time + all elem opera... time

(iv) Sort the positional weight in decending order (rank them)

(v)

(Wahi wala technique to sir ne batay tha ... | A, B | C | D | ...

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ABC System.

Top 5-15% of items = A (70%-80% value)
Next 30% of item = B (15% of value)
Last 50-60% of items = C (5-10% value)

Basic EOQ Assumptions

(i) Demand is certain known, relatively Const.
(ii) No shortage time
(iii) Load time Const. for receipt
(iv) The order quantity is received at once.

$$\text{Annual ordering cost} = \frac{C_o D}{Q}$$

$$\text{Annual carrying cost} = \frac{C_c Q}{2}$$

$$\text{total cost (TC)} = \frac{C_o D}{Q} + \frac{C_c Q}{2}$$

for optimal order Quantity Q^* $\left(\frac{C_o D}{Q} = \frac{C_c Q}{2}\right)$

Critical Path method.

forward procedure → minm makespan.
Backward procedure.

ABG

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* 360° program → performance appraisal program that allowed managers to question even his leadership style.

→ The first implication of the case study:- HR must design and ~~re~~redesign effective methods to anticipate the need of the current business (~~might hurt the org.~~ core)

→ Baby Culture :- the head of company is always looked to for direction and decisions.

→ The womb-to-tomb policy:- No fixed retirement age. loyalists of the family stayed with the company. If they could not work anymore, they would request the bank to guarantee their child a job in the co.

→ The kith-and-kin policy

→ Guaranteed job for the family members in the group.

→ The paratha System → was a manual system suited for relatively small Production Systems

CVA = Gross Cash flow − [cost of Capital − Gross cash invested]

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~~Mcenzy~~

McKenzie Recruitment policy

→ Looks for → exceptional academic perfm
→ diverse experience
→ Leadership qualities
→ problem solving skills
→ Strong analytical mindset.

⇒ Compounding frequency = $\left[1 + \left(\frac{r}{m}\right)\right]^m$

m = period

r = annual quoted rate

(effective) new interest rate = $\left[1 + \left(\frac{r}{m}\right)\right]^m - 1$

→ effective interest rate = $e^r - 1$ (if $m \to \infty$)

$$PV = \frac{c}{r-g}\left[1 - \left(\frac{1+g}{1+r}\right)^t\right]$$

NPV = PV - investment. NPV > 0 accepted

r = net profit / investment → (r > opportunity cost of capital accepted)

→ depreciation is substracted from taxable income to get profits.