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Construction Estimating
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Profit

The return to entrepreneurs for taking risk.

The more risk there is in a business venture the higher the potential profit.

Given the uncertainties that surround building a construction project, the contractor can be characterized as a risk-taker.

The contractor could liquidate his firm and invest his equity in a secure bank account.

The competition between contractors tempers the potential that profit margins in construction are high.



Profit

- The profit margin a specific contractor can include in a project bid is dependent upon :

The risk he is expected to take.

The number of competitors.

- A contractor performing cost-plus type of work takes little risk and can therefore be satisfied with a small profit than submitting a guaranteed maximum lump-sum contract.
- The more specialized a contractor is, the less his competition, and the higher profit that can be included.



Profit

- The figure presents typical profit margins in construction.
- Profit margins are relatively small compared to other industries due to the impact of perfect competition.



Profit

- Profit: A breakeven analysis approach

The breakeven volume (Revenue) is the dollar volume of work performed at which the contractor revenue equals his total costs.

At this volume, the contractor neither makes money nor loses money.

Generally,

Revenue = costs of projects + (company overhead + profit)

At breakeven point,

Revenue = costs of projects + company overhead



Profit

- Profit: A breakeven analysis approach

Gross margin (markup or contribution) = (company overhead + profit)

Gross margin = Gross margin / Revenue.

Gross margin = (Revenue – costs of projects)/Revenue.

At breakeven point,

Gross margin = Company overheads/Revenue,

or,

Revenue = company overheads/Gross margin



Profit

- Profit: A breakeven analysis approach
- Assume that the contractor has estimated company overheads for an upcoming year as \$240,000.
- Assume the contractor estimated gross profit on work to be performed as prior year's profit as 12%.

Breakeven Volume = $\$240,000/0.12 = \$2,000,000$

The contractor has to secure at least \$2 million of volume in the 1-year period to prevent a loss.



Profit

Revenue = costs of projects + (company overhead + profit)

Contribution = (company overhead + profit)

Assume a contractor contracts to build a project for \$2,000,000.

Cost of the project (direct and job overheads) = \$1,800,000.

A \$200,000 contribution helps to cover some of the company overheads.



Profit

Contractors occasionally sign contracts for less than the total cost where; $\text{total cost} = \text{project cost} + \text{contribution}$.

A contractor should never bid below the project cost, doing that would have a negative contribution in regard to both project profit and company profits.

Contractors have to avoid letting the practice of bidding below cost become a habit. A continual practice of bidding below total cost means that the contractor is not covering his overhead costs, eventually he will go bankrupt.



Profit



Profit

The profit the contractor adds to his bid often determines whether or not he will win the project contract.

Too high profit margin causes the contractor to receive no work and must absorb the cost of making the bid proposal.

Too low profit margin risks losing money on the project.

- Long-term versus short-term profit

Usually, a contractor defines a desired long-term profit.

However, a contractor often has to adjust his desired long-term profit in favor of using a short-term project.



Profit

Criteria used to determine desired long-term profit:

- The typical profit contractors are making in the construction industry (3%).
- The profit required to internally finance contractor growth.
- Considering the past profit rate, the contractor may be able to formulate his desired future profit rate.
- If the contractor is a corporation, the profit must be high enough to enable selling new shares of stock at a good price.



Profit

Conditions for adjusting the desired long-term profit:

- **Expected competition on a project; Bidding strategy models shows that the optimal profit rate decreases as the number of contractors bidding on a project increases.**
- **The contractor need of work; If the contractor needs work he should be willing to accept less profit.**
- **The duration of a project and the dollar value of contract; The longer the duration the higher the profit, The larger the dollar value of contract the lower the profit.**



Profit

Conditions for adjusting the desired long-term profit:

- The risk of the project; if a contractor evaluates the project as risky, he should increase the profit (this increase is often referred to as contingency cost).
- Expected project rate of return versus the return from alternative investment opportunities.



Construction bonds

Includes bid bond, and performance bond.

The contractor is required to purchase these bonds from surety companies.

- Bid bond

A bid is an offer to contract, so the contractor could withdraw it.

The owner protects himself from such an event by having the contractor submit a bid bond with his bid.

It assures the owner that the contractor will build the project for the amount stated in the bid proposal.



Construction bonds

An alternative to the bid bond is a certified check from the potential contractor to the owner.

The owner stipulates the amount of the check.

Rather than cashing the check, the owner retains it until the contractor has performed the work and returns it.

The checks submitted by contractors who do not win the project contract are returned.

- Performance bond

Guarantees the project owner that the contractor will build the project according to plans and specifications.



Construction bonds

The surety company risks the possibility that the contractor will fail financially.

The surety bonding will have the obligation to complete the project and pay the bills for the contractor and materials.

The surety company evaluates the contractor financial strength, reputation to complete projects, and the risk associated with the project.

Performance bonds may cost from about \$10 per \$1,000.

Since the bond costs is based on the total contract amount, it is the last item of expense to be added into the project estimate.



Recap sheet

To calculate the needed bid unit prices.

All costs associated with the highway bridge are brought in a summary form on a recapitulation sheet

The expenses of labor, equipment, material, and subcontracts are entered from the summary sheets.

To this are added the job overhead, small tools, tax, markup, and the costs of bonds, giving the total price.

Dividing the total project bid by the total direct project cost gives a factor.

By multiplying the total direct cost of each bid item by the factor, the total amount of that bid item is obtained.



Recap sheet

Dividing the total bid cost of each bid item by its quantity gives the bid unit price.

The unit price of each bid item includes its own direct cost plus its pro rata share of the project overhead, small tools, tax, markup, and bond.

The unit prices are entered in the bid form.

