# The Point of Total Assumption

The point of total assumption (PTA) is the point above which the seller effectively bears all the costs of a cost overrun on a fixed price 'incentive fee' (FPIF or FPI) contract. The seller bears all of the cost risk at PTA and beyond, due to a dollar for dollar decrease in its profits for costs in excess of the PTA.

Calculation of Point of Total Assumption (FPIF contracts)
The case when "BAC exceeds PTA" is shown
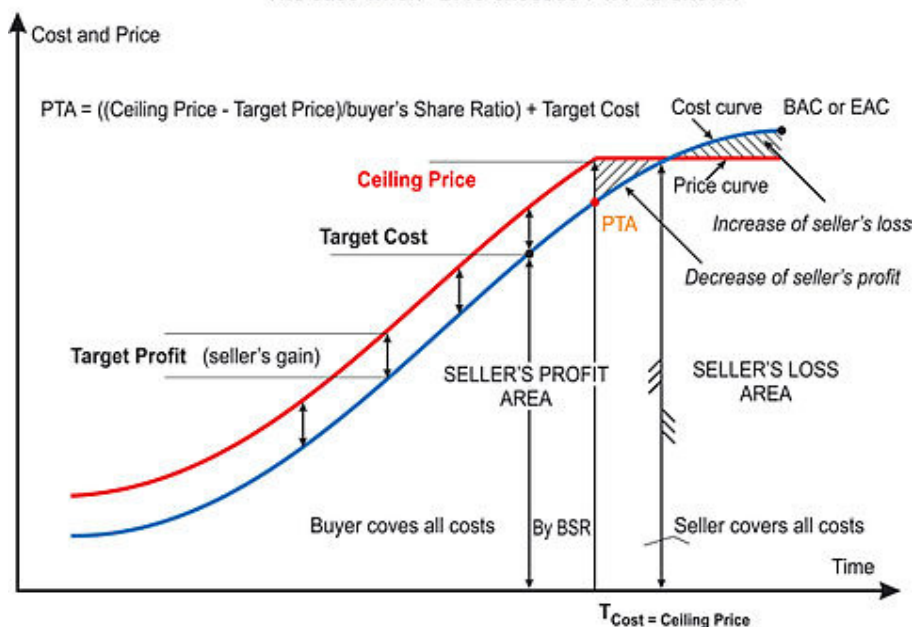
After the Target Cost is exceeded, but prior to exceeding the PTA, the reduction in profits for cost overruns are proportional based on the agreed share ratio. The maximum amount the buyer will pay on an FPIF contract is the Ceiling Price; the target price is always less than this.

If the FPIF contract is well designed, between the PTA and when the cost equals the ceiling price, the seller should still be in a profitable position (but with reduced profits); only after costs exceed the ceiling price should the seller be in a loss position.

The 'ceiling price' is a calculation from the buyer's perspective, the maximum amount the buyer will pay. The concept of a 'Guaranteed Maximum Price' (GMP) is similar, but is created be the seller offering the GMP to the buyer. When the project reaches the GMP any additional costs are born by the seller; if the costs come in under the GMP there is a profit share between the buyer and the seller.

The costs elements of a FPIF contract are:

The **Target Price** for the work which consists of the **Target Cost** plus the seller's **Target Profit** (or 'fixed fee').

The **Ceiling Price** is the maximum the client is expected to pay regardless of cost overruns. This is normally defined as the Target Price plus a percentage. The ceiling price may be adjusted for authorised scope changes and other approved variations to the contract, but not for cost overruns associated with the original scope of

work. The calculation of the ceiling price is **Target Cost,** plus the **Buyer's Share** of the cost overruns, plus the seller's **Target Profit**.

Guaranteed Maximum Price (GMP). This concept is frequently used outside of the USA and represents the maximum project value after which the buyer has no more to pay. The GMP is set in the contract and a 'profit share' agreed for the expected cost underruns. GMP contracts may include target costs and other elements similar to a FPIF contract or may simply include a share ratio for any cost under-runs.

The **Share Ratio** compares the actual cost at completion with the target price and divides the benefit of underruns and the consequences of the allowed overruns between the buyer and seller. A typical set of share ratios are 80% buyer – 20% seller for overruns and 50% – 50% for underruns. This means the seller (contractor) contributes 20% of any cost overruns (usually from its planned profit) up to the ceiling but receives 50% of any cost savings (underruns). Consequently, the seller is incentivised to achieve underruns but not heavily penalised for cost overruns until the cost ceiling is reached.

The **Pont of Total Assumption** (PTA) is the point above which the seller effectively bears all the costs of a cost overrun.

- o Up to the target cost, the buyer pays 100% of the costs.
- o Between the target cost, and the PTA, additional costs are shared between the buyer and the seller based on the Share Ratio.
- o Above the PTA, the seller (contractor) pays 100% of the additional costs
- o In addition to its share of the costs, the buyer will also pay the seller its fee or profit.

The PTA is therefore, the difference between the ceiling and target prices, divided by the buyer's portion of the share ratio for that price range, plus the target cost. The formula is:

PTA = [(Ceiling Price - Target Price)/Buyer's Share Ratio] + Target Cost

Example:

Target Cost = $150,000.
Fixed Fee = $ 20,000.
Target Price = $170,000.
Ceiling Price = $200,000.
Share Ratio (buyer/seller) = 80% - 20%

$$PTA = (200000 - 170000) / 80\% + 150000 = \$187,500$$

$$PTA = \$30,000 / 80\% + 150000 = \$187,500$$

$$PTA = \$37,500 + 150000 = \$187,500$$

If this project suffers major cost overruns, the buyer will pay $150,000 for the original target cost, $30,000 for its share of the cost overruns up to the ceiling and $20,000 for the contractors fee (or profit) a total of $200,000. Once the costs exceed the PTA of $187,500 the contractor (seller) is using its resources to pay for the overrun on a dollar for dollar basis.

The GMP for this contract would be quoted by the contractor either as a single price of $200,000, or as a cost of $180,000 and a fee of $20,000. Once calculated, GMP contracts usually only have a share of the savings defined in the contract, any overrun is a 100% cost to the seller (but both parties expect a cost underrun and a share of the savings). If the GMP is $180,000 (+$20,000) the profit share is based on the net costs (the actual cost of the work), the $20,000 is paid to the seller regardless of outcome. If the GMP is set at

$200,000, the gross costs (including the sellers profits and overhead mark-ups) are used to assess any profit share.

The difference between GMP[1] and Ceiling Price is:

- o The GMP represents the total cost of the works above which the buyer will have no more to pay (the focus is on the total contract value). Usually once the GMP is set in the contract, the parties focus on achieving the expected cost underrun and there is a 'profit share' specified in the contract.
- o Whereas the Ceiling Price represents the maximum actual monetary outlays (payments) the buyer will make, the focus is on the buyer's financial commitment to the project.

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[1] **Note**: Ceiling Price is a clearly defined concept under USA government purchasing protocols. GMP is a contractual concept defined by the terms of each specific contract, therefore, the way the GMP is calculated will vary depending on the contract terms.