

Important International Finance Formulas PDF



Formulas Examples with Units

List of 20 Important International Finance Formulas

1) Annualised Forward Premium Formula ↻

Formula

$$p = \left(\left(\frac{F_R - S}{S} \right) \cdot \left(\frac{360}{n} \right) \right) \cdot 100$$

Example

$$12.1212 = \left(\left(\frac{102 - 99}{99} \right) \cdot \left(\frac{360}{90} \right) \right) \cdot 100$$

Evaluate Formula ↻

2) Balance of Capital Account Formula ↻

Formula

$$BOP_{\text{capital}} = NNP_{S/D} + NFA + NCT_r$$

Example

$$121000 = 45000 + 40000 + 36000$$

Evaluate Formula ↻

3) Balance of Financial Account Formula ↻

Formula

$$BOF = NDI + NPI + A + E$$

Example

$$140000 = 60000 + 35000 + 30000 + 15000$$

Evaluate Formula ↻

4) Bid Ask Spread Formula ↻

Formula

$$BA_{\text{spread}} = \left(\frac{P_{\text{ask}} - P_{\text{bid}}}{P_{\text{ask}}} \right) \cdot 100$$

Example

$$35.7143 = \left(\frac{70 - 45}{70} \right) \cdot 100$$

Evaluate Formula ↻

5) Covered Interest Rate Parity Formula ↻

Formula

$$F = (e_o) \cdot \left(\frac{1 + r_f}{1 + r_d} \right)$$

Example

$$94.7368 = (150) \cdot \left(\frac{1 + 0.20}{1 + 0.90} \right)$$

Evaluate Formula ↻

6) Current Account Balance Formula ↻

Formula

$$CAB = X - I + NY + NCT$$

Example

$$220000 = 500000 - 400000 + 20000 + 100000$$

Evaluate Formula ↻



7) FRA Payoff (Long Position) Formula

Formula

Evaluate Formula 

$$FRA_p = NP \cdot \left(\frac{\left(r_{\text{exp}} - r_{\text{forward}} \right) \cdot \left(\frac{n_{\text{ur}}}{360} \right)}{1 + \left(r_{\text{exp}} \cdot \left(\frac{n_{\text{ur}}}{360} \right) \right)} \right)$$

Example

$$1793.722 = 50000 \cdot \left(\frac{\left(52 - 50 \right) \cdot \left(\frac{96}{360} \right)}{1 + \left(52 \cdot \left(\frac{96}{360} \right) \right)} \right)$$

8) Gamma Formula

Formula

Example

Evaluate Formula 

$$\Gamma = \frac{\% \Delta}{\Delta S}$$

$$0.002 = \frac{0.05}{25}$$

9) Hedge Ratio Formula

Formula

Example

Evaluate Formula 

$$\Delta = \frac{HV}{TPV}$$

$$0.65 = \frac{6500}{10000}$$

10) International Fischer Effect using Spot Rates Formula

Formula

Example

Evaluate Formula 

$$\Delta E = \left(\frac{e_o}{e_t} \right) - 1$$

$$0.5 = \left(\frac{150}{100} \right) - 1$$

11) International Fisher Effect using Interest Rates Formula

Formula

Example

Evaluate Formula 

$$\Delta E = \left(\frac{r_d - r_f}{1 + r_f} \right)$$

$$0.5833 = \left(\frac{0.90 - 0.20}{1 + 0.20} \right)$$

12) Optimal Hedge Ratio Formula

Formula

Example

Evaluate Formula 

$$\Delta_{\text{optimal}} = \left(\frac{\sigma_s}{\sigma_f} \right) \cdot \rho_{s/f}$$

$$0.1667 = \left(\frac{0.05}{0.09} \right) \cdot 0.3$$



13) Optimal Number of Contracts Formula

Formula

$$OC = \frac{\Delta_{\text{optimal}} \cdot NPH}{FCS}$$

Example

$$3.06 = \frac{0.17 \cdot 4500}{250}$$

Evaluate Formula 

14) Option Premium Formula

Formula

$$OPR = \left(\left(\frac{SOW}{NSOW} \right) + \left(PP \cdot \frac{100}{PS} - 100 \right) \right)$$

Example

$$846.5909 = \left(\left(\frac{500}{55} \right) + \left(1500 \cdot \frac{100}{160} - 100 \right) \right)$$

Evaluate Formula 

15) Put-Call Parity Formula

Formula

$$c_t = S_t + p_t - \left(\frac{X_s}{\left(1 + \left(\frac{R_f}{100} \right) \right)^{\frac{n_m}{12}}} \right)$$

Example

$$7.293 = 53 + 4 - \left(\frac{50.1}{\left(1 + \left(\frac{3.2}{100} \right) \right)^{\frac{3}{12}}} \right)$$

Evaluate Formula 

16) Relative Strength Index Formula

Formula

$$RSI = 100 - \left(\frac{100}{1 + \left(\frac{AG}{AL} \right)} \right)$$

Example

$$75 = 100 - \left(\frac{100}{1 + \left(\frac{60}{20} \right)} \right)$$

Evaluate Formula 

17) Rho (Options Greek) Formula

Formula

$$\rho = \frac{\Delta V}{\Delta r}$$

Example

$$1.6667 = \frac{2.5}{1.5}$$

Evaluate Formula 

18) Theta Formula

Formula

$$\theta = - \frac{\Delta V}{\Delta t}$$

Example

$$-5 = - \frac{2.5}{0.5}$$

Evaluate Formula 



19) Uncovered Interest Rate Parity Formula

Formula

$$ES_{t+1} = e_0 \cdot \left(\frac{1 + r_d}{1 + r_f} \right)$$

Example

$$237.5 = 150 \cdot \left(\frac{1 + 0.90}{1 + 0.20} \right)$$

Evaluate Formula 

20) Vega (Options Greek) Formula

Formula

$$v = \frac{\Delta V}{\Delta \sigma}$$

Example

$$2 = \frac{2.5}{1.25}$$

Evaluate Formula 



Variables used in list of International Finance Formulas above

- $\% \Delta$ Change in Delta
- **A** Asset Funding
- **AG** Average Gain during Up Period
- **AL** Average Loss during Down Period
- **BA_{spread}** Bid Ask Spread
- **BOF** Balance of Financial Account
- **BOP_{capital}** Balance of Capital Account
- **C_t** Call Option Price
- **CAB** Current Account Balance
- **E** Errors and Omissions
- **e_o** Current Spot Exchange Rate
- **e_t** Spot Rate in Future
- **ES_{t+1}** Expected Future Spot Rate
- **F** Forward Exchange Rate
- **F_R** Forward Rate
- **FCS** Futures Contract Size
- **FRA_p** FRA Payoff
- **HV** Hedge Value
- **I** Imports
- **n** No. of Days
- **n_m** No. of Months
- **n_{ur}** Number of Days in Underlying Rate
- **NCT** Net Current Transfers
- **NCT_r** Net Capital Transfers
- **NDI** Net Direct Investment
- **NFA** Non-Financial Assets
- **NNP_{S/D}** Surpluses or Deficits of Net Non-Produced
- **NP** Notional Principal
- **NPH** Number of Positions Hedged
- **NPI** Net Portfolio Investment
- **NSOW** Number of Securities Per Option Warrant
- **NY** Net Income Abroad
- **OC** Optimal Number of Contracts
- **OPR** Option Premium
- **p** Annualised Forward Premium



- **P_{ask}** Ask Price
- **P_{bid}** Bid Price
- **p_t** Put Option Price
- **PP** Purchase Price
- **PS** Price Security
- **r_d** Domestic Interest Rate
- **r_{exp}** Underlying Rate at Expiration
- **r_f** Foreign Interest Rate
- **R_f** Risk-Free Rate of Return
- **r_{forward}** Forward Contract Rate
- **RSI** Relative Strength Index
- **S** Spot Rate
- **S_t** Spot Price of Underlying Asset
- **SOW** Share Option Warrant
- **TPV** Total Position Value
- **X** Exports
- **X_s** Strike Price
- **Γ** Gamma
- **Δ** Hedge Ratio
- **Δ_{optimal}** Optimal Hedge Ratio
- **ΔE** Change in Exchange Rate
- **Δr** Change in Rate of Interest
- **ΔS** Change in Price of Underlying Asset
- **Δt** Change in Time to Maturity
- **ΔV** Change in Option Premium
- **Δσ** Change in Volatility of Underlying Asset
- **θ** Theta
- **v** Vega
- **ρ** Rho
- **ρ_{s/f}** Correlation of Changes in Spot and Futures Prices
- **σ_f** Standard Deviation of Changes in Futures Price
- **σ_s** Standard Deviation of Changes in Spot Price



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