This Annex is for presenting the details on the restrictions on user input parameters of the option pricer.

Input Parameter	Applicable to	Constraints	Rationale
Spot Price (S)	All options	Positive real number only.	Asset price should not be zero or negative.
Strike Price (K)	All options	Positive real number only.	Strike Price should not be zero or negative.
Time to Maturity (T)	All options	Positive real number only.	Time to Maturity should not be zero or negative. We recommend user not to input T > 10 year.
Interest Rate (r)	All options	Non-negative real number only.	Interest Rate should not be negative.
Volatility (sigma)	All options except implied volatility	Positive real number only.	Volatility should not be zero or negative. We ruled out zero volatility case because if an asset has zero price volatility, its price is deterministic and option pricing is not appropriate..
No. of tree steps (N)	Options involving Binomial tree	Positive integer, with upper limit restricted to 1000.	A very large number of tree steps (i.e. >1000) will only improve the numerical accuracy marginally, but in general resulting in huge computational time.
Option Price (V)	Implied Volatility	Positive real number, plus Call options: $C>max(Se^{-q(T-t)}-Ke^{-r(T-t)},0)$ and $C<Se^{-q(T-t)}$ Put options: $P>max(Ke^{-r(T-t)}-Se^{-q(T-t)},0)$ and $P<Ke^{-r(T-t)}$	Option Price should not be zero or negative. The option price must be greater than its intrinsic value, but smaller than discounted asset price(call option) or discounted strike price(put option).
Repo Rate (q)	European option, Implied Volatility	Non-negative real number only.	Repo Rate should not be negative.
No. of observation periods (n)	Asian options, KIKO put option	Positive integer only, with upper limit restricted to 1000.	A significantly large number of observation periods (i.e. >1e4) together with a sizable number of Monte Carlo simulation paths will result in a large computational time.
Spot Price 1st asset (S1)	Basket options	Positive real number only.	Asset price should not be zero or negative.
Spot Price 2nd asset (S2)	Basket options	Positive real number only.	Asset price should not be zero or negative.
Sigma 1st asset (Sigma1)	Basket options	Positive real number only.	Volatility should not be zero or negative.
Sigma 2nd asset (Sigma2)	Basket options	Positive real number only.	Volatility should not be zero or negative.
correlation (rho)	Basket options	Real number between -1 and 1 only.	Correlation coefficient is defined between -1 and 1. This can be proved mathematically, referring to assignment 2 Question 2.
Lower barrier (L)	KIKO put option	Positive real number, which is also lower than upper barrier only.	The lower barrier represents a certain level of the asset price and the asset price should not be zero or negative.

			If the lower barrier is higher than the upper barrier, the option is either knocked in or knocked out right at issuance. This is not practical.
Upper barrier (U)	KIKO put option	Positive real number, which is also higher than lower barrier only.	The higher barrier represents a certain level of the asset price and the asset price should not be zero or negative. If the upper barrier is higher than the lower barrier, the option is either knocked in or knocked out right at issuance. This is not practical. If the user input an asset value $S \geq U$, we do not consider it as an error, but we return the cash rebate to as a result of the calculation, as it represents the payoff of holding such an option at the moment.
Cash rebate ratio (CR)	KIKO put option	Non-negative real number only.	Cash rebate ratio should not be negative.
No. of simulation paths (M)	All options involving Monte Carlo method	Positive integer between 100 and 100000 only.	Due to inaccurate results for small M (<1e2) while lengthy calculation time for large M (>1e5), we advise the user to select M to be between 100 and 100000 in this pricer.