UpperMark

Level I FormulaSheet Sample

Topic 24

CALCULATION

Futures Prices — [S is spot price of underlying, r is risk-free rate, & $(T - t)$ is time to expiration in years]

With no income: $F_t = Se^{r(T - t)}$

Of foreign currency (f is foreign risk-free rate): $F_t = Se^{(r - f)(T - t)}$

With dividend yld (δ): $F_t = Se^{(r - \delta)(T - t)}$

Of physical commodity (y convenience yld, c storage): $F_t = Se^{(r + c - y)(T - t)}$

CONCEPTUAL

Normal Backwardation: $F < E(S_T)$ Contango: $F > E(S_T)$