TAXONOMY OF DISTRIBUTIONS

Risk and Asset Allocation* - Springer – *symmys.com

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Formulas and figures in this presentation refer to the book **Risk and Asset Allocation**, Springer.

The notation, say, (5.24) refers to Formula 24 in Chapter 5 of the book

The notation, say, (T4.12) refers to Formula 12 in the Technical Appendices for Chapter 4, which can be downloaded from www.symmys.com

$$X \sim \mathrm{U}\left([a,b]\right) \tag{1.54}$$

$$f^{\mathrm{U}}_{a,b}\left(x\right) = \frac{1}{b-a}\mathbb{I}_{[a,b]}\left(x\right) \tag{1.55}$$

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$$X \sim \mathrm{N}\left(\mu,\sigma^2\right) \tag{1.66}$$

$$f^{\mathrm{N}}_{\mu,\sigma^2}\left(x\right) \equiv \frac{1}{\sqrt{2\pi\sigma^2}}e^{-\frac{(x-\mu)^2}{2\sigma^2}} \tag{1.67}$$

$$X \sim \mathrm{Ca}\left(\mu,\sigma^2\right) \tag{1.78}$$

$$f^{\mathrm{Ca}}_{\mu,\sigma^2}\left(x\right) \equiv \frac{1}{\pi\sqrt{\sigma^2}}\left(1+\frac{\left(x-\mu\right)^2}{\sigma^2}\right)^{-1} \tag{1.79}$$

$$X \sim \mathrm{St}\left(\nu,\mu,\sigma^2\right) \tag{1.85}$$

$$f^{\mathrm{St}}_{\nu,\mu,\sigma}\left(x\right) = \frac{\Gamma\left(\frac{\nu+1}{2}\right)}{\Gamma\left(\frac{\nu}{2}\right)}\frac{1}{\sqrt{\nu\pi\sigma^2}}\left(1+\frac{1}{\nu}\frac{\left(x-\mu\right)^2}{\sigma^2}\right)^{-\frac{\nu+1}{2}} \tag{1.86}$$

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(1.54) $X \sim \mathrm{U}\left([a,b]\right)$ $\qquad$ $f^{\mathrm{U}}_{a,b}\left(x\right) = \dfrac{1}{b-a}\mathbb{I}_{[a,b]}\left(x\right)$ (1.55)

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(1.85) $X \sim \mathrm{St}\left(\nu,\mu,\sigma^2\right)$ $\qquad$ $f^{\mathrm{St}}_{\nu,\mu,\sigma}\left(x\right) = \dfrac{\Gamma\left(\frac{\nu+1}{2}\right)}{\Gamma\left(\frac{\nu}{2}\right)}\dfrac{1}{\sqrt{\nu\pi\sigma^2}}\left(1+\dfrac{1}{\nu}\dfrac{\left(x-\mu\right)^2}{\sigma^2}\right)^{-\frac{\nu+1}{2}}$ (1.86)

(1.94) $X \sim \mathrm{LogN}\left(\mu,\sigma^2\right)$ $\qquad$ $f^{\mathrm{LogN}}_{\mu,\sigma^2}\left(x\right) = \dfrac{1}{x\sqrt{2\pi\sigma^2}}e^{-\frac{1}{2}\frac{\left(\ln(x)-\mu\right)^2}{\sigma^2}}$ (1.95)

(1.107) $X \sim \mathrm{Ga}\left(\nu,\mu,\sigma^2\right)$ $\qquad$ $f^{\mathrm{Ga}}_{\nu,\sigma^2}\left(x\right) = \dfrac{1}{\left(2\sigma^2\right)^{\frac{\nu}{2}}\Gamma\left(\frac{\nu}{2}\right)}x^{\frac{\nu}{2}-1}e^{-\frac{1}{2}\frac{x}{\sigma^2}}$ (1.110)