Errata – chapter 4

Stochastic volatility – introduction

4.3.1 Implied volatilities of power payoffs

Page 142, there's a T missing in the exponentials of the right-hand sides of the first two equations:

$$L(p) \;=\; \int_{-\infty}^{+\infty} dy \frac{e^{-\frac{y^2}{2}}}{\sqrt{2\pi}} e^{\frac{p(p-1)}{2}\widehat{\sigma}^2_{K(y,p)T}}$$

should read:

$$L(p) \;=\; \int_{-\infty}^{+\infty} dy \frac{e^{-\frac{y^2}{2}}}{\sqrt{2\pi}} e^{\frac{p(p-1)}{2}\widehat{\sigma}^2_{K(y,p)T}T}$$

and

$$e^{\frac{p(p-1)}{2}\widehat{\sigma}^2_p T} \;=\; \int_{-\infty}^{+\infty} dy \frac{e^{-\frac{y^2}{2}}}{\sqrt{2\pi}} e^{\frac{p(p-1)}{2}\widehat{\sigma}^2_{K(y,p)T}}$$

should read:

$$e^{\frac{p(p-1)}{2}\widehat{\sigma}^2_p T} \;=\; \int_{-\infty}^{+\infty} dy \frac{e^{-\frac{y^2}{2}}}{\sqrt{2\pi}} e^{\frac{p(p-1)}{2}\widehat{\sigma}^2_{K(y,p)T}T}$$

4.3.6 The log contract, again

The statement at the bottom of page 148:

> Log contracts have finite prices: they do not require anything beyond the non-abitrageability of the smile, thus $\widehat{\sigma}_T$ is always well-defined.

is incorrect.

While all power payoffs S^p for $p \in [0,1]$ have finite prices and finite implied volatilities $\widehat{\sigma}_{pT}$, $\lim_{p\to 0}\widehat{\sigma}_{pT}$ is not necessarily finite.
Thus there are non-arbitrageable smiles for which $\widehat{\sigma}_T$ is infinite.