

# Interest Theory Errata

(Updated on 10/12/2017)

## Chapter 8

Page 116. The first line of Key Concept 8.10 should refer to an annuity-due, not an annuity-immediate. The first portion of corrected first line is, "The present value at time 0 of an increasing perpetuity-**due** that pays  $P_0$  at time 0, ..."

## Chapter 9

Page 129. In the middle of page 129, the bullet points do not appear. The corrected version appears below:

... confuse them. The example uses the second bullet point below:

- $v$  is the discount factor for one time unit,  $v = \frac{1}{1+i}$
- $v$  is used when integrating by parts.

## Chapter 14

Pages 205-209, 211-213, and 218-222. The summations of the present values of the cash flows should include any cash flows occurring at time 0. Therefore, the expression  $>$  should be replaced by  $\geq$  in the summations. For example, the expression in Key Concept 14.01 should be:

$$MacD = -\frac{P'(r)}{P(r)} = \frac{\sum_{t \geq 0} [t \times PV_0(CF_t)]}{\sum_{t \geq 0} PV_0(CF_t)}$$

Page 209. The derivation of the Macaulay duration of a par bond, which appears at the top of page 209, contains an error. The corrected version is shown below:

$$\begin{aligned} MacD &= \frac{\sum_{t \geq 0} [t \times PV_0(CF_t)]}{\sum_{t \geq 0} PV_0(CF_t)} = \frac{\frac{Coup}{m} \times (Ia)_{\overline{nm}| \frac{y^{(m)}}{m}} + nRv^n}{m \times Coup \times \ddot{a}_{\overline{n}|}^{(m)} + Rv^n} \\ &= \frac{F \times \frac{y^{(m)}}{m^2} \times (Ia)_{\overline{nm}| \frac{y^{(m)}}{m}} + nFv^n}{F} = \frac{y^{(m)}}{m^2} \times (Ia)_{\overline{nm}| \frac{y^{(m)}}{m}} + nv^n \\ &= \frac{y^{(m)}}{m^2} \times \frac{\ddot{a}_{\overline{nm}| \frac{y^{(m)}}{m}} - nmv^n}{\frac{y^{(m)}}{m}} + nv^n = \frac{1}{m} \times \left[ \ddot{a}_{\overline{nm}| \frac{y^{(m)}}{m}} - nmv^n \right] + nv^n \\ &= \frac{1}{m} \times \ddot{a}_{\overline{nm}| \frac{y^{(m)}}{m}} = \ddot{a}_{\overline{n}|}^{(m)} \end{aligned}$$