Subject SP9

Corrections to 2022 study material

0 Comment

This document contains details of any errors and ambiguities in the Subject SP9 study materials for the 2022 exams that have been brought to our attention. We will incorporate these changes in the study material each year. We are always happy to receive feedback from students, particularly details concerning any errors, contradictions or unclear statements in the courses. If you have any such comments on this course please email them to SP9@bpp.com.

You may also find it useful to refer to the Subject SP9 threads on the Actuarial Discussion Forum. (You can reach the Forums by clicking on the 'Discussion Forums' button at the top of the ActEd homepage, or by going to www.acted.co.uk/forums/.)

1 Course Notes

Module 16

Page 21 ***(added on 13 June 2022)***

Two-thirds down the page, the statement should read:

$\bar{\mathbf{X}}$ is an unbiased estimator for α.

Page 30 ***(added on 13 June 2022)***

There are two instances where *s* has erroneously been referred to as the sample variance, whereas it should be identified as the sample standard deviation.

Page 31 ***(added on 15 July 2022)***

The second bullet point under the Generalised inverse Gaussian distribution should contain a 'gamma' rather than a 'lambda', *ie*:

- if $\gamma = -\frac{1}{2}$ the distribution is a Wald distribution (inverse Gaussian)

Module 17

Page 9 ***(added on 11 January 2022)***

The first sentence should read:

For the $AR(p)$ process described above to be covariance stationary, all roots (z) of the following characteristic polynomial expression should lie outside the unit circle:

$$f(z) = 1 - \alpha_1 z - \cdots - \alpha_p z^p = 0$$

Module Summary, Page 29 ***(added on 11 January 2022)***

Under 'Autoregressive processes' the text should read:

An $AR(p)$ process is covariance stationary if all roots (z) of the following characteristic polynomial expression lie outside the unit circle:

$$f(z) = 1 - \alpha_1 z - \cdots - \alpha_p z^p = 0$$

Module Summary, Page 30 ***(added on 11 January 2022)***

Under 'Autoregressive conditional heteroscedastic time series' the final sentence should read:

An $ARCH(p)$ process is covariance stationary if all roots (z) of the following characteristic polynomial expression lie outside the unit circle:

$$f(z)=1-\alpha_1 z-\cdots-\alpha_p z^p=0$$

Module 19

Page 31 ***(added on 17 July 2022)***

In the solution to Question 19.2(iii), the test statistic has been renamed from 'T' to 'JB', in order to avoid confusion with the 'T' (number of data points) that subsequently appears in the equation, *ie*:

The Jarque-Bera test statistic is given by:

$$JB=\frac{T}{6}\left(\omega^2+\frac{1}{4}(\kappa-3)^2\right)$$

where ω is the coefficient of skewness of the data and $\kappa-3$ is the excess kurtosis. [1]

Applying the values given in the question we have:

$$JB=\frac{324}{6}\left(1.50621^2+\frac{1}{4}(6.32971-3)^2\right) \quad [1]$$

$$=272.182$$

Module 23

Page 7 ***(added on 11 January 2022)***

Approximately halfway down the page, 'moral hazard' should be replaced with 'anti-selection', *ie*:

For example, an individual seeking a mortgage has much better knowledge of their own personal situation and their ability to repay the mortgage than the bank they approach for a loan. Indeed, there is anti-selection in that they may present their circumstances in the best possible light in order to secure a loan.

Module 30

Page 36 ***(added on 19 October 2021)***

The final sentence on the page has a word missing and should read: 'If we employed a capital allocation method (*eg* Euler) that recognises the diversifying contribution of each line, this would reduce the allocation of capital to the motor line.'

2 Flashcards

Module 17

Solution to Flashcard 4 ***(added on 11 January 2022)***

The point on the card referring to stationarity should read:

- For an $AR(p)$ process to be covariance stationary, all roots (z) of the following characteristic polynomial expression should lie outside the unit circle:

$$f(z)=1-\alpha_1 z-\cdots-\alpha_p z^p=0$$