

# Errata

## Laporan Statistik Asuransi Gempa Bumi Indonesia as at 31 Desember 2014

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Halaman	Baris	Keterangan	Isi
86	22	Tercetak	$\left(s.e(\widehat{R}_i^{BF})\right)^2 = \left(\widehat{U}_i^2 + \left(s.e(\widehat{U}_i)\right)^2\right) \left(s.e(\hat{z}_{n+1-i}^*)\right)^2 + \left(s.e(\widehat{U}_i)\right)^2 (1 - \hat{z}_{n+1-i}^*)^2$
		Seharusnya	$Var(\hat{R}_i^{BF}) = \left(s.e.(\hat{R}_i^{BF})\right)^2 = \left(\widehat{U}_i^2 + \left(s.e(\widehat{U}_i)\right)^2\right) \left(s.e(\hat{z}_{n+1-i}^*)\right)^2 + \left(s.e(\widehat{U}_i)\right)^2 (1 - \hat{z}_{n+1-i}^*)^2$
87	Sebelum "Contoh"	Tambahan penjelasan	<p>Untuk memperoleh <math>\left(s.e.(\hat{R}^{BF})\right)^2</math>, tidak dapat hanya dengan menambahkan nilai-nilai <math>\left(s.e.(\hat{R}_i^{BF})\right)^2</math>, karena mereka tidak saling bebas. Oleh karena itu digunakan persamaan berikut:</p> $Var(\hat{R}^{BF}) = \left(s.e.(\hat{R}^{BF})\right)^2 = \sum_{i=1}^n \left(s.e.(\hat{R}_i^{BF})\right)^2 + 2 \sum_{i < j} Cov(\hat{R}_i^{BF}, \hat{R}_j^{BF})$ <p>Dengan</p> $Cov(\hat{R}_i^{BF}, \hat{R}_j^{BF}) = \hat{\rho}_{ij}^U s.e(\widehat{U}_i) s.e(\widehat{U}_j) (1 - \hat{z}_{n+1-i}^*) (1 - \hat{z}_{n+1-j}^*) + \hat{\rho}_{ij}^Z s.e(\hat{z}_{n+1-i}^*) s.e(\hat{z}_{n+1-j}^*) \widehat{U}_i \widehat{U}_j$ <p><math>\hat{\rho}_{ij}^Z</math> diperoleh dengan menggunakan persamaan:</p> $\hat{\rho}_{ij}^Z = \frac{\hat{z}_{n+1-j}^* (1 - \hat{z}_{n+1-i}^*)}{\hat{z}_{n+1-i}^* (1 - \hat{z}_{n+1-j}^*)} \quad \text{untuk } i < j \text{ dan } \hat{z}_1^* \leq \dots \leq \hat{z}_{n+1}^*$ <p>Dan <math>\hat{\rho}_{ij}^U</math> menggunakan persamaan:</p> $\hat{\rho}_{ij}^U = 1/\sqrt{n}$

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87	Sebelum "Contoh"	Tambahan penjelasan	<p><b>Translate:</b>  <math>(s.e.(\hat{R}^{BF}))^2</math> is not calculated by adding the values of <math>(s.e.(\hat{R}_i^{BF}))^2</math>, because they are not independent. It is calculated using the formula below:</p> $Var(\hat{R}^{BF}) = (s.e.(\hat{R}^{BF}))^2 = \sum_{i=1}^n (s.e.(\hat{R}_i^{BF}))^2 + 2 \sum_{i<j} Cov(\hat{R}_i^{BF}, \hat{R}_j^{BF})$ <p>with</p> $Cov(\hat{R}_i^{BF}, \hat{R}_j^{BF}) = \hat{\rho}_{ij}^U s.e(\hat{U}_i) s.e(\hat{U}_j) (1 - \hat{z}_{n+1-i}^*) (1 - \hat{z}_{n+1-j}^*) + \hat{\rho}_{ij}^Z s.e(\hat{z}_{n+1-i}^*) s.e(\hat{z}_{n+1-j}^*) \hat{U}_i \hat{U}_j$ <p><math>\hat{\rho}_{ij}^Z</math> is calculated by formula:</p> $\hat{\rho}_{ij}^Z = \sqrt{\frac{\hat{z}_{n+1-j}^* (1 - \hat{z}_{n+1-i}^*)}{\hat{z}_{n+1-i}^* (1 - \hat{z}_{n+1-j}^*)}} \quad \text{for } i < j \text{ or } \hat{z}_1^* \leq \dots \leq \hat{z}_{n+1}^*$ <p>and <math>\hat{\rho}_{ij}^U</math> by formula:</p> $\hat{\rho}_{ij}^U = 1/\sqrt{n}$

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87	5-8	Tercetak	<p>Telah diketahui <math>msep(\hat{R}_i^{BF}) = Var(\hat{R}_i^{BF}) + Var(R_i)</math>, sehingga diperoleh tabel berikut:</p> <table border="1" data-bbox="961 310 1392 613"> <thead> <tr> <th>Accident Year <math>i</math></th> <th>Prediction Error <math>msep(\hat{R}_i^{BF})</math></th> </tr> </thead> <tbody> <tr><td>1</td><td>83,17</td></tr> <tr><td>2</td><td>207,55</td></tr> <tr><td>3</td><td>710,73</td></tr> <tr><td>4</td><td>1.055,87</td></tr> <tr><td>5</td><td>2.748,29</td></tr> <tr><td>6</td><td>3.678,19</td></tr> </tbody> </table> <p>Dengan menjumlahkan seluruh <math>msep(\hat{R}_i^{BF})</math>, diperoleh <math>msep(\hat{R}^{BF})</math> sebesar 8.483,79.</p> <p><b>Translate:</b>  <i>It is known that <math>msep(\hat{R}_i^{BF}) = Var(\hat{R}_i^{BF}) + Var(R_i)</math>, hence the table below is obtained:</i></p> <table border="1" data-bbox="951 800 1329 1154"> <thead> <tr> <th>Accident Year <math>i</math></th> <th>Prediction Error <math>msep(\hat{R}_i^{BF})</math></th> </tr> </thead> <tbody> <tr><td>1</td><td>83.17</td></tr> <tr><td>2</td><td>207.55</td></tr> <tr><td>3</td><td>710.73</td></tr> <tr><td>4</td><td>1,055.87</td></tr> <tr><td>5</td><td>2,748.29</td></tr> <tr><td>6</td><td>3,678.19</td></tr> </tbody> </table> <p><i>By summing all <math>msep(\hat{R}_i^{BF})</math>, the <math>msep(\hat{R}^{BF})</math> is equal to 8,483.79.</i></p>	Accident Year $i$	Prediction Error $msep(\hat{R}_i^{BF})$	1	83,17	2	207,55	3	710,73	4	1.055,87	5	2.748,29	6	3.678,19	Accident Year $i$	Prediction Error $msep(\hat{R}_i^{BF})$	1	83.17	2	207.55	3	710.73	4	1,055.87	5	2,748.29	6	3,678.19
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87	5-8	Seharusnya	<p>Telah diketahui <math>msep(\hat{R}_i^{BF}) = Var(\hat{R}_i^{BF}) + Var(R_i)</math> dan <math>Var(\hat{R}^{BF}) = \sum \hat{R}_i^{BF} + 2 \sum Cov(\hat{R}_i^{BF}, \hat{R}_j^{BF})</math> sehingga diperoleh <math>msep(\hat{R}^{BF})</math> sebesar 9.619,59.</p> <p><b>Translate:</b>  <i>It is known that <math>msep(\hat{R}_i^{BF}) = Var(\hat{R}_i^{BF}) + Var(R_i)</math> and <math>Var(\hat{R}^{BF}) = \sum \hat{R}_i^{BF} + 2 \sum Cov(\hat{R}_i^{BF}, \hat{R}_j^{BF})</math> hence <math>msep(\hat{R}^{BF})</math> is equal to 9,619.59.</i></p>
87	10-13	Tercetak	<p>Dari perhitungan di atas diperoleh <i>standard error</i> estimator cadangan klaim IBNR menggunakan metode Bornhuetter-Ferguson sebesar <math>\sqrt{8.483,79} = 92,11</math>.</p> <p><b>Translate:</b>  <i>From the above calculation, the standard error of the estimator of the IBNR claim reserve using the Bornhuetter-Ferguson method is equal to <math>\sqrt{8,483.79} = 92.11</math>.</i></p>
		Seharusnya	<p>Dari perhitungan di atas diperoleh <i>standard error</i> estimator cadangan klaim IBNR menggunakan metode Bornhuetter-Ferguson sebesar <math>\sqrt{9.619,59} = 98,08</math>.</p> <p><b>Translate:</b>  <i>From the above calculation, the standard error of the estimator of the IBNR claim reserve using the the Bornhuetter-Ferguson method is equal to <math>\sqrt{9,619.59} = 98.08</math>.</i></p>