

Lampiran 1 Contoh Data Indeks dan *Return* Bursa Saham

## IBOVESPA

A	B	C	D
No.	Tanggal	Indeks	<i>Return</i> ( $\text{LN}(\text{Indeks}_t/\text{Indeks}_{t-1})$ )
1	06/06/2007	52049,00	-0,021158273
2	08/06/2007	52330,00	0,005384238
3	11/06/2007	52777,00	0,008505669
4	12/06/2007	51797,00	-0,018743257
5	13/06/2007	52994,00	0,022846467
6	14/06/2007	53713,00	0,013476358
7	15/06/2007	54519,00	0,014894207
8	18/06/2007	54730,00	0,00386274
9	19/06/2007	54644,00	-0,001572586
10	20/06/2007	54029,00	-0,01131848
11	21/06/2007	54657,00	0,011556355
12	22/06/2007	54267,00	-0,007160987
13	25/06/2007	54042,00	-0,004154785
14	26/06/2007	53852,00	-0,003521979
15	27/06/2007	54143,00	0,005389151
16	28/06/2007	54147,00	7,38757E-05
17	29/06/2007	54392,00	0,004514514
18	02/07/2007	55371,00	0,017838907
19	03/07/2007	55700,00	0,005924156
20	04/07/2007	55696,00	-7,18159E-05
21	05/07/2007	55932,00	0,004228336
22	06/07/2007	56444,00	0,009112329
23	10/07/2007	55883,00	-0,009988777
24	11/07/2007	56356,00	0,008428493
25	12/07/2007	57613,00	0,022059524
26	13/07/2007	57644,00	0,000537928
27	16/07/2007	57374,00	-0,004694926
28	17/07/2007	57660,00	0,004972453
29	18/07/2007	57556,00	-0,001805305
30	19/07/2007	58125,00	0,009837477
31	20/07/2007	57443,00	-0,011802712
32	23/07/2007	58037,00	0,010287586
33	24/07/2007	55795,00	-0,039396479
34	25/07/2007	56001,00	0,003685288
35	26/07/2007	53893,00	-0,038368948
36	27/07/2007	52922,00	-0,018181468
37	30/07/2007	54573,00	0,030720124

## Lampiran 1 (lanjutan)

## IBOVESPA

A	B	C	D
No.	Tanggal	Indeks	Return (LN(Indeks <sub>t</sub> /Indeks <sub>t-1</sub> ))
38	31/07/2007	54183,00	-0,007172049
39	01/08/2007	54234,00	0,000940812
40	02/08/2007	54691,00	0,008391144
41	03/08/2007	52846,00	-0,034317139
42	06/08/2007	53091,00	0,004625399
43	07/08/2007	53802,00	0,013303219
44	08/08/2007	55241,00	0,02639479
45	09/08/2007	53431,00	-0,033314329
46	10/08/2007	52638,00	-0,014952809
47	13/08/2007	52434,00	-0,003883057
48	14/08/2007	50912,00	-0,029456584
49	15/08/2007	49285,00	-0,032478877
50	16/08/2007	48016,00	-0,026085486
51	17/08/2007	48559,00	0,011245265
52	20/08/2007	49206,00	0,013236014
53	21/08/2007	49815,00	0,012300576
54	22/08/2007	51745,00	0,038011666
55	23/08/2007	51848,00	0,001988552
56	24/08/2007	52998,00	0,021937816
57	27/08/2007	53078,00	0,001508353
58	28/08/2007	51645,00	-0,027369144
59	29/08/2007	52735,00	0,020885986
60	30/08/2007	52858,00	0,002329701
61	31/08/2007	54637,00	0,033102236
62	03/09/2007	54833,00	0,003580894
63	04/09/2007	55250,00	0,007576138
64	05/09/2007	54408,00	-0,015357139
65	06/09/2007	54569,00	0,002954754
66	10/09/2007	52653,00	-0,035742739
67	11/09/2007	53921,00	0,023796795
68	12/09/2007	53883,00	-0,000704983
69	13/09/2007	54908,00	0,018844028
70	14/09/2007	54671,00	-0,004325653
71	17/09/2007	54341,00	-0,006054398
72	18/09/2007	56666,00	0,041895377
73	19/09/2007	57264,00	0,01049777
74	20/09/2007	56906,00	-0,00627137

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A	B	C	D
No.	Tanggal	Indeks	Return ( $\text{LN}(\text{Indeks}_t/\text{Indeks}_{t-1})$ )
75	21/09/2007	57799,00	0,015570691
76	24/09/2007	58719,00	0,01579188
77	25/09/2007	58858,00	0,002364409
78	26/09/2007	59715,00	0,014455482
79	27/09/2007	61052,00	0,022142715
80	28/09/2007	60465,00	-0,009661275
81	01/10/2007	62340,00	0,030538589
82	02/10/2007	62017,00	-0,005194733
83	03/10/2007	60099,00	-0,031415339
84	04/10/2007	60407,00	0,00511179
85	05/10/2007	62319,00	0,031161363
86	08/10/2007	62661,00	0,005472889
87	09/10/2007	63549,00	0,014072017
88	10/10/2007	63197,00	-0,00555443
89	11/10/2007	62456,00	-0,011794523
90	15/10/2007	62969,00	0,008180233
91	16/10/2007	61718,00	-0,020066919
92	17/10/2007	63194,00	0,023633737
93	18/10/2007	63261,00	0,001059666
94	19/10/2007	60894,00	-0,038134378
95	22/10/2007	61215,00	0,00525761
96	23/10/2007	62697,00	0,023921342
97	24/10/2007	62625,00	-0,00114904
98	25/10/2007	62341,00	-0,004545244
99	26/10/2007	64276,00	0,030566996
100	29/10/2007	65044,00	0,011877653
101	30/10/2007	64383,00	-0,010214341
102	31/10/2007	65318,00	0,014418026
103	01/11/2007	64050,00	-0,019603621
104	05/11/2007	62960,00	-0,017164424
105	06/11/2007	64503,00	0,02421213
106	07/11/2007	63501,00	-0,015656081
107	08/11/2007	63562,00	0,000960154
108	09/11/2007	64321,00	0,011870365
109	12/11/2007	61527,00	-0,044410069
110	13/11/2007	62927,00	0,022499222
111	14/11/2007	64631,00	0,026718847

## Lampiran 1 (lanjutan)

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A	B	C	D
No.	Tanggal	Indeks	Return (LN(Indeks <sub>t</sub> /Indeks <sub>t-1</sub> ))
112	16/11/2007	64609,00	-0,000340452
113	19/11/2007	62336,00	-0,035814612
114	21/11/2007	60582,00	-0,028541289
115	22/11/2007	60653,00	0,001171279
116	23/11/2007	60971,00	0,005229243
117	26/11/2007	59069,00	-0,031692089
118	27/11/2007	59432,00	0,00612655
119	28/11/2007	61715,00	0,037694211
120	29/11/2007	62156,00	0,007120341
121	30/11/2007	63006,00	0,013582606
122	03/12/2007	63200,00	0,003074341
123	04/12/2007	63482,00	0,0044521
124	05/12/2007	64928,00	0,022522562
125	06/12/2007	65791,00	0,013204087
126	07/12/2007	65639,00	-0,002313019
127	10/12/2007	65446,00	-0,002944656
128	11/12/2007	64512,00	-0,014374122
129	12/12/2007	64742,00	0,003558888
130	13/12/2007	62861,00	-0,029484201
131	14/12/2007	62445,00	-0,00663977
132	17/12/2007	59828,00	-0,042812391
133	18/12/2007	61096,00	0,020972619
134	19/12/2007	61722,00	0,010194034
135	20/12/2007	61716,00	-9,72148E-05
136	21/12/2007	63098,00	0,022145857
137	26/12/2007	64288,00	0,018683915
138	27/12/2007	63774,00	-0,008027405
139	28/12/2007	63886,00	0,001754661
140	02/01/2008	62815,00	-0,016906347
141	03/01/2008	62892,00	0,001225071
142	04/01/2008	61037,00	-0,029938732
143	07/01/2008	60772,00	-0,004351081
144	08/01/2008	62081,00	0,021310827
145	09/01/2008	62674,00	0,009506705
146	10/01/2008	63515,00	0,01332941
147	11/01/2008	61942,00	-0,025077635
148	14/01/2008	62188,00	0,003963592

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A	B	C	D
No.	Tanggal	Indeks	Return (LN(Indeks <sub>t</sub> /Indeks <sub>t-1</sub> ))
149	15/01/2008	59907,00	-0,037368695
150	16/01/2008	58777,00	-0,019042738
151	17/01/2008	57037,00	-0,030050442
152	18/01/2008	57506,00	0,00818911
153	21/01/2008	53709,00	-0,068308705
154	22/01/2008	56097,00	0,04350175
155	23/01/2008	54235,00	-0,033755879
156	24/01/2008	57463,00	0,057814806
157	28/01/2008	58594,00	0,01949104
158	29/01/2008	59530,00	0,015848085
159	30/01/2008	60289,00	0,012669279
160	31/01/2008	59490,00	-0,013341435
161	01/02/2008	61080,00	0,026376249
162	06/02/2008	58969,00	-0,035172598
163	07/02/2008	58965,00	-6,78346E-05
164	08/02/2008	59076,00	0,001880703
165	11/02/2008	60643,00	0,026179462
166	12/02/2008	61805,00	0,018980055
167	13/02/2008	62591,00	0,01263723
168	14/02/2008	61819,00	-0,012410737
169	15/02/2008	61272,00	-0,008887792
170	19/02/2008	62297,00	0,016590302
171	20/02/2008	63747,00	0,023008854
172	21/02/2008	63792,00	0,000705667
173	22/02/2008	64609,00	0,012725929
174	25/02/2008	65001,00	0,006048934
175	26/02/2008	65183,00	0,002796044
176	27/02/2008	65495,00	0,004775105
177	28/02/2008	65555,00	0,000915681
178	29/02/2008	63489,00	-0,032022822
179	03/03/2008	64490,00	0,01564351
180	04/03/2008	63656,00	-0,013016587
181	05/03/2008	64629,00	0,01516964
182	06/03/2008	62975,00	-0,025925404
183	07/03/2008	61868,00	-0,017734739
184	10/03/2008	59999,00	-0,030675188
185	11/03/2008	62368,00	0,038724428

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A	B	C	D
No.	Tanggal	Indeks	Return (LN(Indeks <sub>t</sub> /Indeks <sub>t-1</sub> ))
186	12/03/2008	62177,00	-0,003067167
187	13/03/2008	62280,00	0,001655191
188	14/03/2008	61991,00	-0,004651134
189	17/03/2008	60012,00	-0,032444671
190	18/03/2008	61933,00	0,031508613
191	19/03/2008	58827,00	-0,051452222
192	20/03/2008	58987,00	0,002716147
193	24/03/2008	59813,00	0,013905948
194	25/03/2008	61234,00	0,023479562
195	26/03/2008	61415,00	0,002951514
196	27/03/2008	60762,00	-0,010689511
197	28/03/2008	60452,00	-0,005114932
198	31/03/2008	60968,00	0,008499475
199	01/04/2008	62775,00	0,029207769
200	02/04/2008	63364,00	0,009338972
201	03/04/2008	64175,00	0,01271785
202	04/04/2008	64446,00	0,004213937
203	07/04/2008	64176,00	-0,004198355
204	08/04/2008	64540,00	0,005655878
205	09/04/2008	63477,00	-0,016607551
206	10/04/2008	63527,00	0,000787377
207	11/04/2008	62585,00	-0,01493938
208	14/04/2008	62153,00	-0,006926546
209	15/04/2008	62618,00	0,00745369
210	16/04/2008	64152,00	0,024202491
211	17/04/2008	64552,00	0,006215833
212	18/04/2008	64923,00	0,005730852
213	21/04/2008	64923,00	0
214	22/04/2008	65413,00	0,007519063
215	23/04/2008	64948,00	-0,007134066
216	24/04/2008	64576,00	-0,005744125
217	25/04/2008	65187,00	0,009417238
218	28/04/2008	65678,00	0,007503951
219	29/04/2008	63826,00	-0,028603383
220	30/04/2008	67868,00	0,061404011
221	02/05/2008	69366,00	0,021832192
222	05/05/2008	70175,00	0,011595288

## Lampiran 1 (lanjutan)

## IBOVESPA

A	B	C	D
No.	Tanggal	Indeks	Return (LN(Indeks <sub>t</sub> /Indeks <sub>t-1</sub> ))
223	06/05/2008	70195,00	0,000284961
224	07/05/2008	69018,00	-0,016909743
225	08/05/2008	69722,00	0,010148566
226	09/05/2008	69646,00	-0,001090638
227	12/05/2008	70416,00	0,010995241
228	13/05/2008	70503,00	0,001234752
229	14/05/2008	70027,00	-0,00677438
230	15/05/2008	71492,00	0,020704673
231	16/05/2008	72767,00	0,017677
232	19/05/2008	73439,00	0,009192574
233	20/05/2008	73517,00	0,001061542
234	21/05/2008	72295,00	-0,016761702
235	23/05/2008	71452,00	-0,011729075
236	26/05/2008	71629,00	0,002474124
237	27/05/2008	70992,00	-0,008932825
238	28/05/2008	73153,00	0,029985944
239	29/05/2008	71798,00	-0,018696518
240	30/05/2008	72593,00	0,011011878
241	02/06/2008	71897,00	-0,009633959
242	03/06/2008	70012,00	-0,026567883
243	04/06/2008	68673,00	-0,019310547
244	05/06/2008	71235,00	0,036628162
245	06/06/2008	69786,00	-0,020550854
246	09/06/2008	69281,00	-0,007262718
247	10/06/2008	67775,00	-0,021977303
248	11/06/2008	66795,00	-0,014565168
249	12/06/2008	67322,00	0,00785885
250	13/06/2008	67204,00	-0,001754308
251	16/06/2008	67285,00	0,00120456
252	17/06/2008	68438,00	0,016990897
253	18/06/2008	67090,00	-0,019893224
254	19/06/2008	66590,00	-0,007480585
255	20/06/2008	64614,00	-0,030123311
256	23/06/2008	64640,00	0,000402309
257	24/06/2008	64168,00	-0,00732877
258	25/06/2008	65853,00	0,025920341
259	26/06/2008	63947,00	-0,02937037

## Lampiran 1 (lanjutan)

## IBOVESPA

A	B	C	D
No.	Tanggal	Indeks	Return (LN(Indeks <sub>t</sub> /Indeks <sub>t-1</sub> ))
260	27/06/2008	64321,00	0,005831557
261	30/06/2008	65018,00	0,010777983
262	01/07/2008	63396,00	-0,025263387
263	02/07/2008	61106,00	-0,036790707
264	03/07/2008	59273,00	-0,030456171
265	04/07/2008	59365,00	0,001550937
266	07/07/2008	59088,00	-0,004676969
267	08/07/2008	59536,00	0,007553313
268	10/07/2008	60253,00	0,011971192
269	11/07/2008	60148,00	-0,001744172
270	14/07/2008	60721,00	0,00948141
271	15/07/2008	61015,00	0,004830134
272	16/07/2008	62056,00	0,016917468
273	17/07/2008	60109,00	-0,031877622
274	18/07/2008	59988,00	-0,002015039
275	21/07/2008	60772,00	0,012984614
276	22/07/2008	59647,00	-0,018685303
277	23/07/2008	59421,00	-0,003796155
278	24/07/2008	57434,00	-0,034011237
279	25/07/2008	57199,00	-0,004100047
280	28/07/2008	56869,00	-0,005786039
281	29/07/2008	58043,00	0,020433738
282	30/07/2008	59998,00	0,033127113
283	31/07/2008	59505,00	-0,008250886
284	01/08/2008	57630,00	-0,032017077
285	04/08/2008	55609,00	-0,035698207
286	05/08/2008	56471,00	0,015382173
287	06/08/2008	57542,00	0,018787884
288	07/08/2008	57018,00	-0,009148108
289	08/08/2008	56584,00	-0,007640748
290	11/08/2008	54720,00	-0,033496986
291	12/08/2008	54503,00	-0,003973527
292	13/08/2008	54573,00	0,001283509
293	14/08/2008	55138,00	0,010299879
294	15/08/2008	54244,00	-0,016346746
295	18/08/2008	53327,00	-0,017049618
296	19/08/2008	53639,00	0,005833646



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A	B	C	D
No.	Tanggal	Indeks	Return ( $\text{LN}(\text{Indeks}_t/\text{Indeks}_{t-1})$ )
297	20/08/2008	55377,00	0,03188793
298	21/08/2008	55935,00	0,010025957
299	22/08/2008	55850,00	-0,001520777
300	25/08/2008	54477,00	-0,024890931
301	26/08/2008	54359,00	-0,002168401
302	27/08/2008	55519,00	0,021115111
303	28/08/2008	56382,00	0,015424654
304	29/08/2008	55680,00	-0,012528943
305	01/09/2008	55162,00	-0,009346706
306	02/09/2008	54404,00	-0,01383663
307	03/09/2008	53527,00	-0,016251481
308	04/09/2008	51409,00	-0,040372945
309	05/09/2008	51940,00	0,010275952
310	08/09/2008	50718,00	-0,023808329
311	09/09/2008	48435,00	-0,046058184
312	10/09/2008	49633,00	0,024433242
313	11/09/2008	51270,00	0,032449851
314	12/09/2008	52393,00	0,021667209
315	15/09/2008	48416,00	-0,078942657
316	16/09/2008	49229,00	0,016652543
317	17/09/2008	45909,00	-0,069821704
318	18/09/2008	48423,00	0,053313731
319	19/09/2008	53055,00	0,091354204
320	22/09/2008	51541,00	-0,028951504
321	23/09/2008	49593,00	-0,038527913
322	24/09/2008	49843,00	0,005028371
323	25/09/2008	51828,00	0,039052478
324	26/09/2008	50783,00	-0,020368891
325	29/09/2008	46028,00	-0,098311746
326	30/09/2008	49541,00	0,073550703
327	01/10/2008	49799,00	0,005194294
328	02/10/2008	46145,00	-0,076206291
329	03/10/2008	44517,00	-0,035917474
330	06/10/2008	42101,00	-0,055799645
331	07/10/2008	40140,00	-0,04769815
332	08/10/2008	38594,00	-0,039276519
333	09/10/2008	37080,00	-0,040019083

## Lampiran 1 (lanjutan)

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A	B	C	D
No.	Tanggal	Indeks	Return ( $\text{LN}(\text{Indeks}_t/\text{Indeks}_{t-1})$ )
334	10/10/2008	35610,00	-0,040451243
335	13/10/2008	40829,00	0,136766116
336	14/10/2008	41569,00	0,017962084
337	15/10/2008	36833,00	-0,120960515
338	16/10/2008	36442,00	-0,010672227
339	17/10/2008	36399,00	-0,001180654
340	20/10/2008	39441,00	0,080264583
341	21/10/2008	39043,00	-0,010142282
342	22/10/2008	35070,00	-0,107317539
343	23/10/2008	33818,00	-0,036352859
344	24/10/2008	31482,00	-0,071577251
345	27/10/2008	29435,00	-0,067231511
346	28/10/2008	33387,00	0,12598216
347	29/10/2008	34845,00	0,042743052
348	30/10/2008	37449,00	0,072070352
349	31/10/2008	37257,00	-0,005140161
350	03/11/2008	38249,00	0,02627757
351	04/11/2008	40255,00	0,051116804
352	05/11/2008	37786,00	-0,063295556
353	06/11/2008	36362,00	-0,03841439
354	07/11/2008	36665,00	0,008298348
355	10/11/2008	36776,00	0,003022837
356	11/11/2008	37262,00	0,013128582
357	12/11/2008	34374,00	-0,080673576
358	13/11/2008	35993,00	0,04602401
359	14/11/2008	35789,00	-0,005683891
360	17/11/2008	35717,00	-0,002013818
361	18/11/2008	34095,00	-0,04647602
362	19/11/2008	33405,00	-0,020445157
363	21/11/2008	31251,00	-0,066654214
364	24/11/2008	34189,00	0,089852579
365	25/11/2008	34813,00	0,018086925
366	26/11/2008	36470,00	0,046499125
367	27/11/2008	36213,00	-0,007071834
368	28/11/2008	36596,00	0,010520774
369	01/12/2008	34741,00	-0,052018399
370	02/12/2008	35001,00	0,007456087

## Lampiran 1 (lanjutan)

## IBOVESPA

A	B	C	D
No.	Tanggal	Indeks	Return (LN(Indeks <sub>t</sub> /Indeks <sub>t-1</sub> ))
371	03/12/2008	35297,00	0,008421342
372	04/12/2008	35128,00	-0,004799441
373	05/12/2008	35347,00	0,00621499
374	08/12/2008	38285,00	0,079844651
375	09/12/2008	37968,00	-0,008314475
376	10/12/2008	39004,00	0,026920505
377	11/12/2008	38519,00	-0,012512579
378	12/12/2008	39374,00	0,021954074
379	15/12/2008	38320,00	-0,027133747
380	16/12/2008	39993,00	0,042732486
381	17/12/2008	39947,00	-0,001150863
382	18/12/2008	39536,00	-0,010341926
383	19/12/2008	39131,00	-0,010296658
384	22/12/2008	37619,00	-0,03940575
385	23/12/2008	36471,00	-0,030991818
386	26/12/2008	36864,00	0,010718041
387	29/12/2008	37060,00	0,005302756
388	30/12/2008	37550,00	0,013135157
389	02/01/2009	40244,00	0,069287546
390	05/01/2009	41519,00	0,031190229
391	06/01/2009	42312,00	0,01891958
392	07/01/2009	40820,00	-0,035898576
393	08/01/2009	41991,00	0,028283152
394	09/01/2009	41583,00	-0,00976388
395	12/01/2009	39403,00	-0,053849474
396	13/01/2009	39544,00	0,00357202
397	14/01/2009	37982,00	-0,040301613
398	15/01/2009	39151,00	0,030313602
399	16/01/2009	39342,00	0,004866686
400	19/01/2009	38828,00	-0,013151015
401	20/01/2009	37272,00	-0,040899261
402	21/01/2009	38543,00	0,033532127
403	22/01/2009	37894,00	-0,016981713
404	23/01/2009	38132,00	0,006261036
405	26/01/2009	38509,00	0,009838156
406	27/01/2009	38699,00	0,00492178
407	28/01/2009	40227,00	0,038724652

## Lampiran 1 (lanjutan)

## IBOVESPA

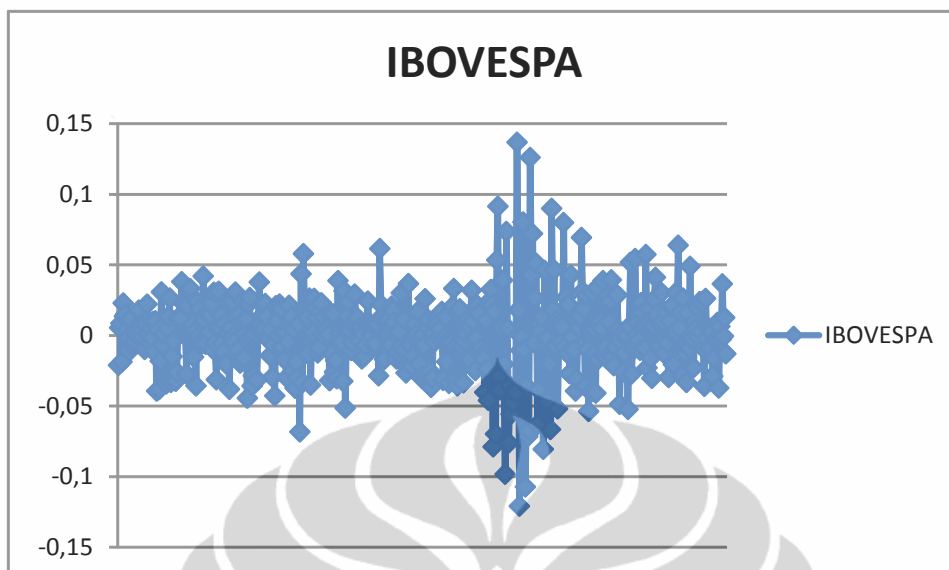
A	B	C	D
No.	Tanggal	Indeks	Return (LN(Indeks <sub>t</sub> /Indeks <sub>t-1</sub> ))
408	29/01/2009	39638,00	-0,014750158
409	30/01/2009	39301,00	-0,00853829
410	02/02/2009	38666,00	-0,016289303
411	03/02/2009	39747,00	0,027573706
412	04/02/2009	40129,00	0,009564898
413	05/02/2009	41109,00	0,024127811
414	06/02/2009	42756,00	0,039282461
415	09/02/2009	42100,00	-0,015461796
416	10/02/2009	41207,00	-0,021439596
417	11/02/2009	40846,00	-0,008799248
418	12/02/2009	40501,00	-0,008482232
419	13/02/2009	41674,00	0,028550768
420	16/02/2009	41841,00	0,003999287
421	17/02/2009	39847,00	-0,0488296
422	18/02/2009	39674,00	-0,004351059
423	19/02/2009	39730,00	0,001410509
424	20/02/2009	38715,00	-0,025879448
425	25/02/2009	38232,00	-0,012554261
426	26/02/2009	38180,00	-0,001361043
427	27/02/2009	38183,00	7,85721E-05
428	02/03/2009	36235,00	-0,052364888
429	03/03/2009	36468,00	0,006409661
430	04/03/2009	38402,00	0,051674378
431	05/03/2009	37369,00	-0,027268058
432	06/03/2009	37105,00	-0,007089752
433	09/03/2009	36741,00	-0,009858434
434	10/03/2009	38795,00	0,054398075
435	11/03/2009	38805,00	0,000257732
436	12/03/2009	39152,00	0,008902402
437	13/03/2009	39015,00	-0,003505319
438	16/03/2009	38607,00	-0,01051258
439	17/03/2009	39511,00	0,023145507
440	18/03/2009	40142,00	0,015844054
441	19/03/2009	40453,00	0,007717639
442	20/03/2009	40076,00	-0,009363155
443	23/03/2009	42439,00	0,057290099
444	24/03/2009	41476,00	-0,022952804

## Lampiran 1 (lanjutan)

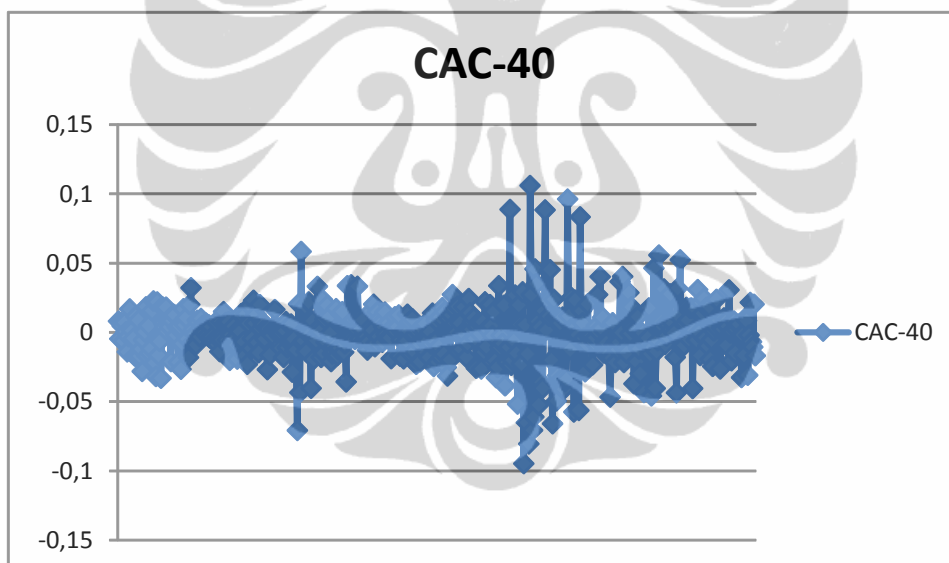
## IBOVESPA

A	B	C	D
No.	Tanggal	Indeks	Return ( $\text{LN}(\text{Indeks}_t/\text{Indeks}_{t-1})$ )
482	20/05/2009	51245,00	-0,00198846
483	21/05/2009	50087,00	-0,022856559
484	22/05/2009	50568,00	0,009557472
485	25/05/2009	50816,00	0,0048923
486	26/05/2009	51841,00	0,019970076
487	27/05/2009	51792,00	-0,000945645
488	28/05/2009	53041,00	0,023829502
489	29/05/2009	53198,00	0,002955602
490	01/06/2009	54486,00	0,023922986
491	02/06/2009	54000,00	-0,008959741
492	03/06/2009	52087,00	-0,036068649
493	04/06/2009	53464,00	0,026093133
494	05/06/2009	53341,00	-0,002303264
495	08/06/2009	53630,00	0,005403347
496	09/06/2009	53157,00	-0,008858814
497	10/06/2009	53411,00	0,004766918
498	12/06/2009	53558,00	0,002748462
499	15/06/2009	52034,00	-0,028867828
500	16/06/2009	51206,00	-0,016040638
501	17/06/2009	51046,00	-0,003129526
502	18/06/2009	50903,00	-0,002805326
503	19/06/2009	51374,00	0,009210347
504	22/06/2009	49495,00	-0,037260554
505	23/06/2009	49814,00	0,006424415
506	24/06/2009	49672,00	-0,002854675
507	25/06/2009	51515,00	0,036431633
508	26/06/2009	51486,00	-0,000563101
509	29/06/2009	52138,00	0,012584123
510	30/06/2009	51465,00	-0,012992085

Sumber: Data *Yahoo Finance*, telah diolah kembali

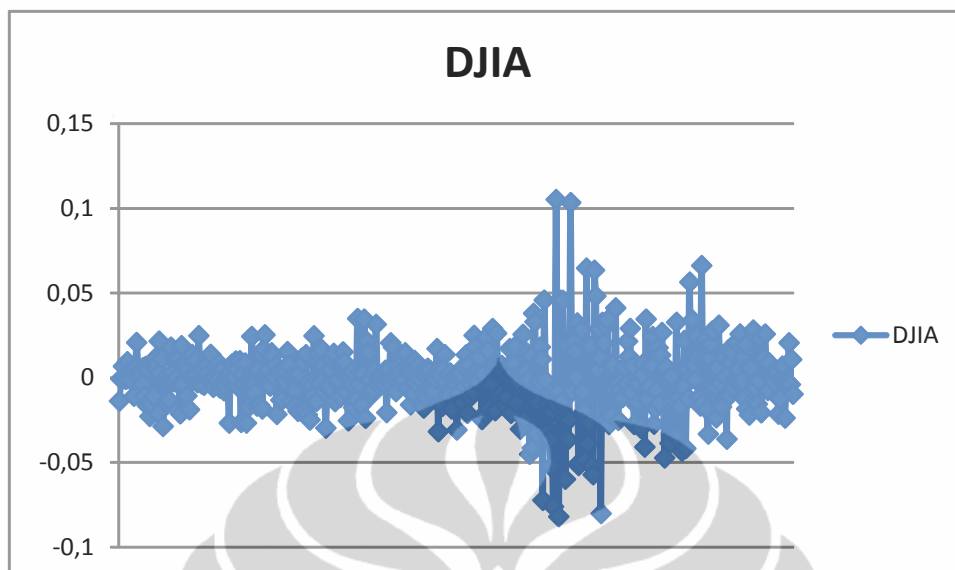
Lampiran 2 Visualisasi Data *Return* dari Indeks Bursa Saham

Sumber: Data *Yahoo Finance* , telah diolah kembali

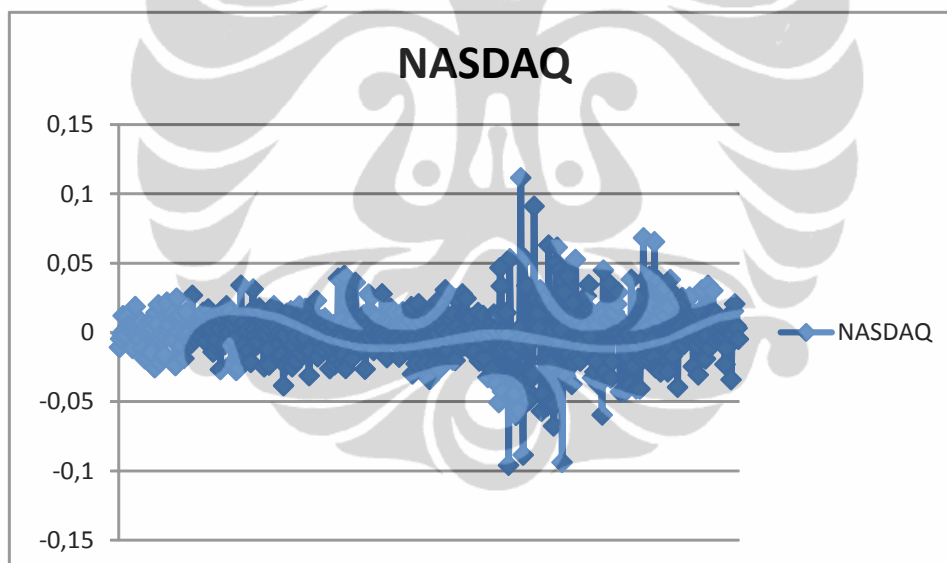


Sumber: Data *Yahoo Finance* , telah diolah kembali

## Lampiran 2 (lanjutan)

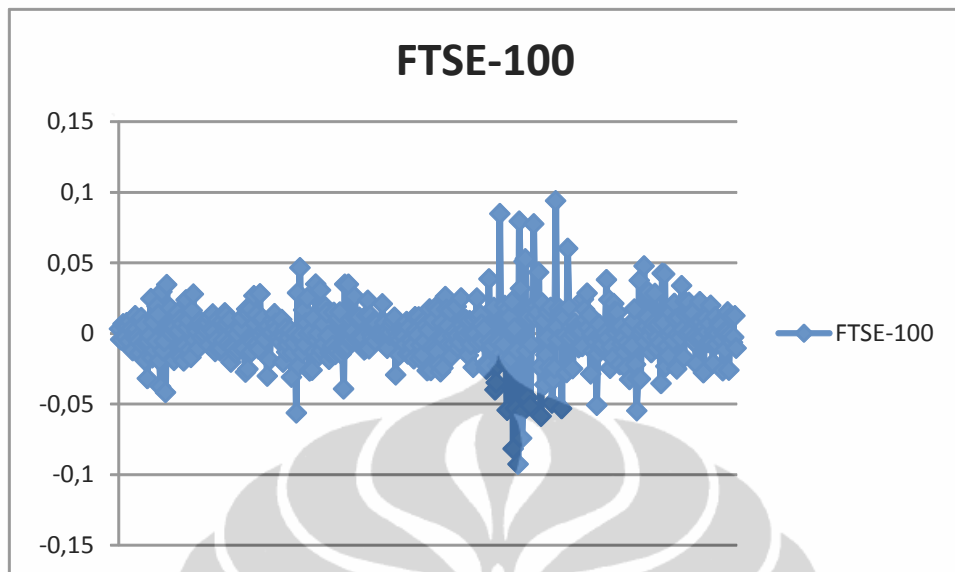


Sumber: Data *Yahoo Finance* , telah diolah kembali

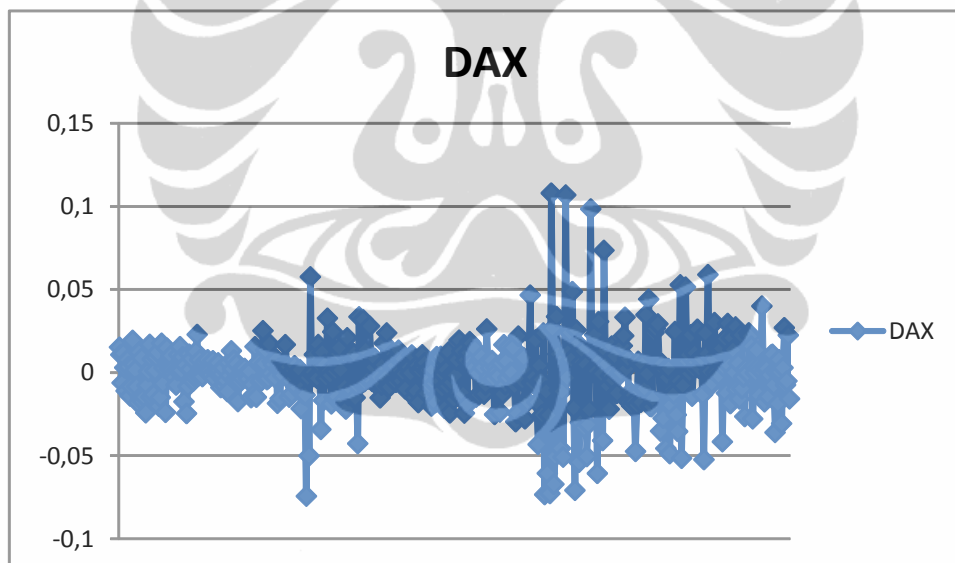


Sumber: Data *Yahoo Finance* , telah diolah kembali

## Lampiran 2 (lanjutan)



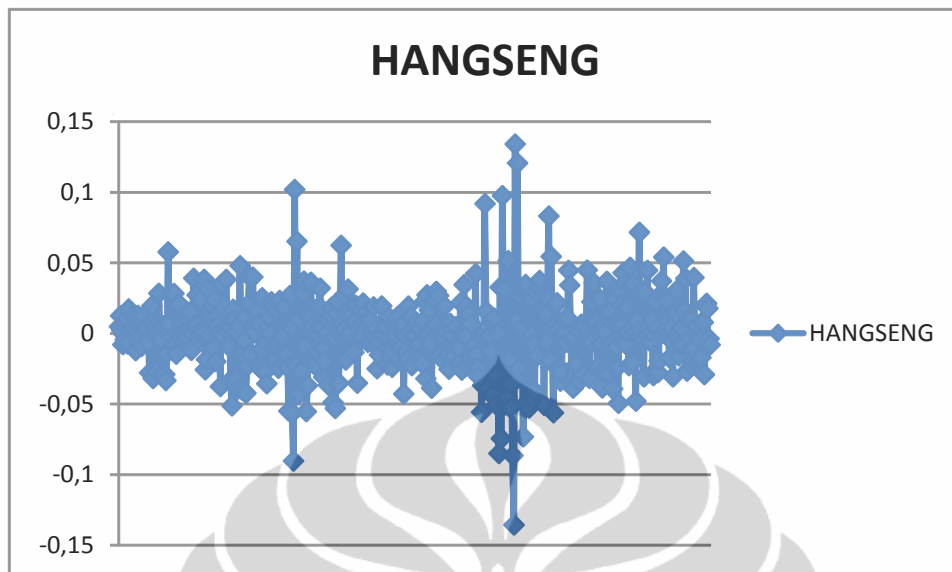
Sumber: Data *Yahoo Finance* , telah diolah kembali



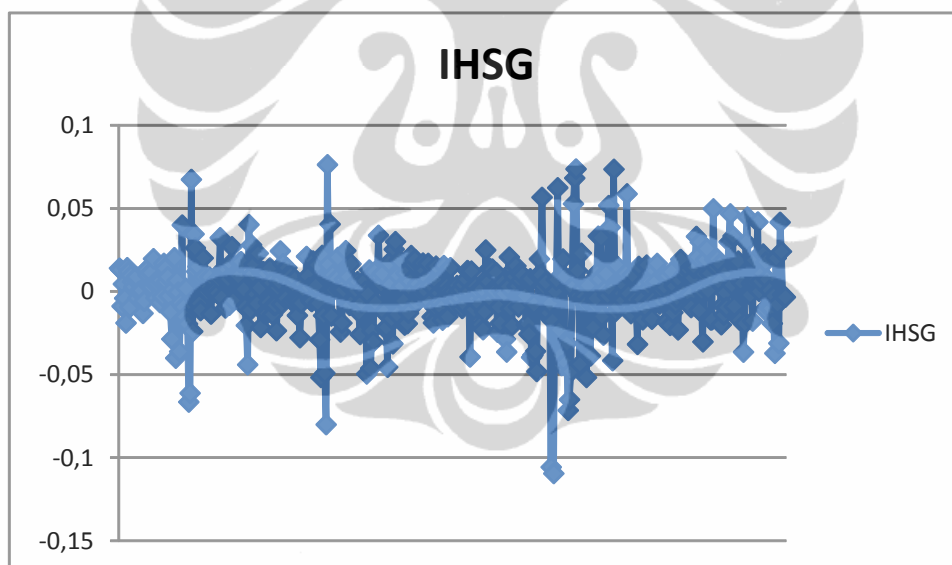
Sumber: Data *Yahoo Finance* , telah diolah kembali



## Lampiran 2 (lanjutan)

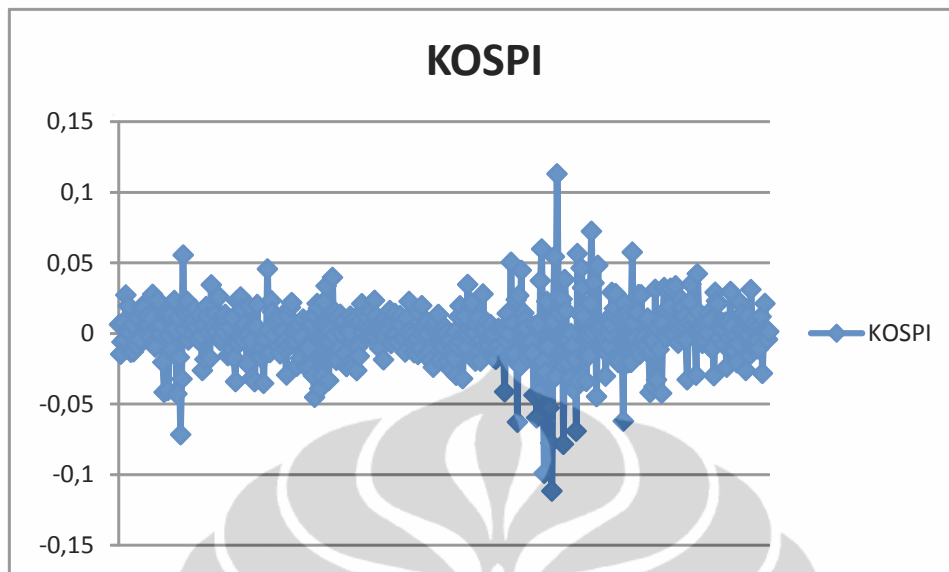


Sumber: Data *Yahoo Finance* , telah diolah kembali

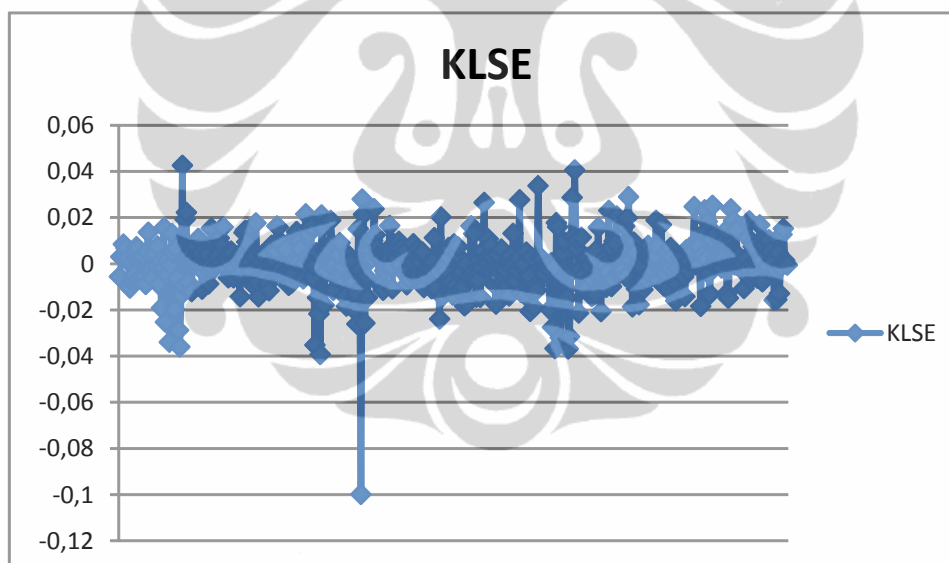


Sumber: Data *Yahoo Finance* , telah diolah kembali

## Lampiran 2 (lanjutan)

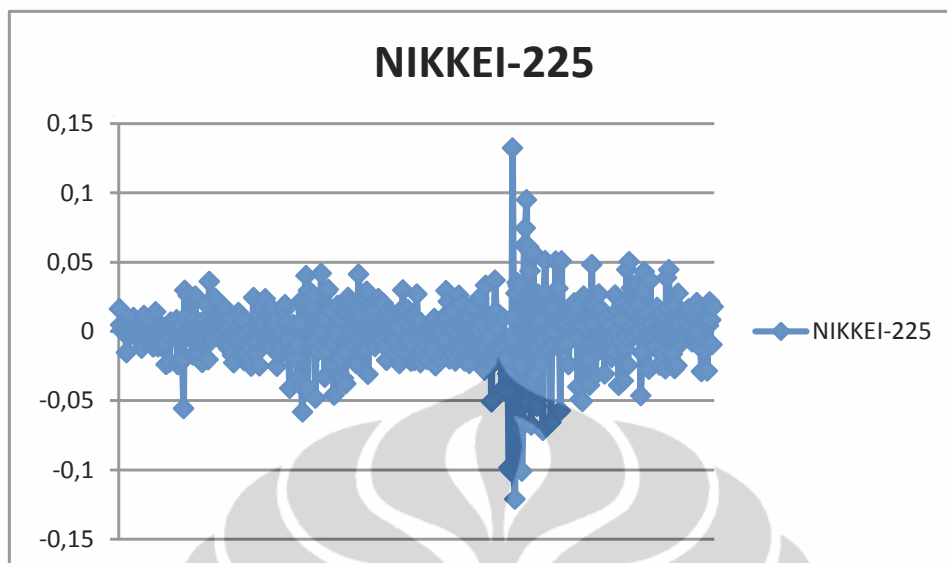


Sumber: Data *Yahoo Finance* , telah diolah kembali

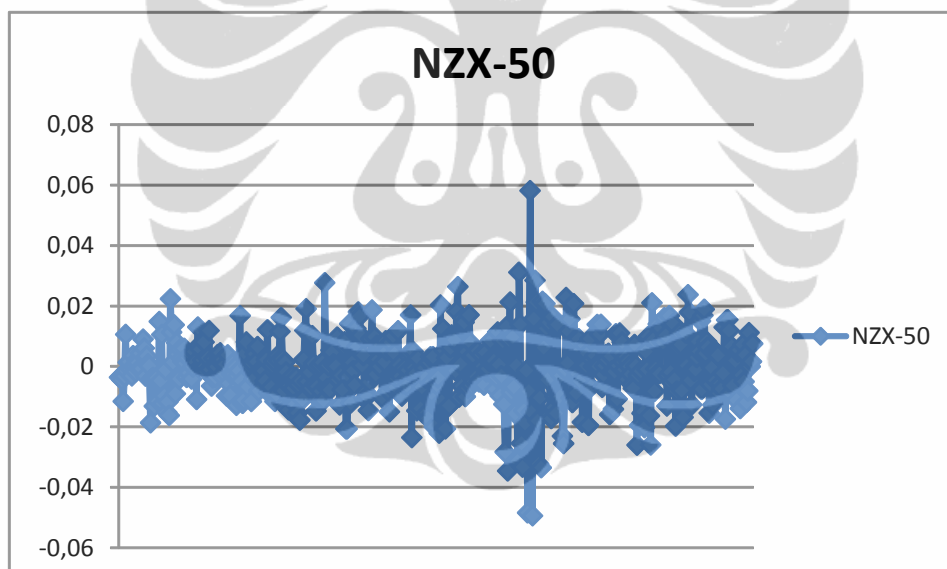


Sumber: Data *Yahoo Finance* , telah diolah kembali

## Lampiran 2 (lanjutan)

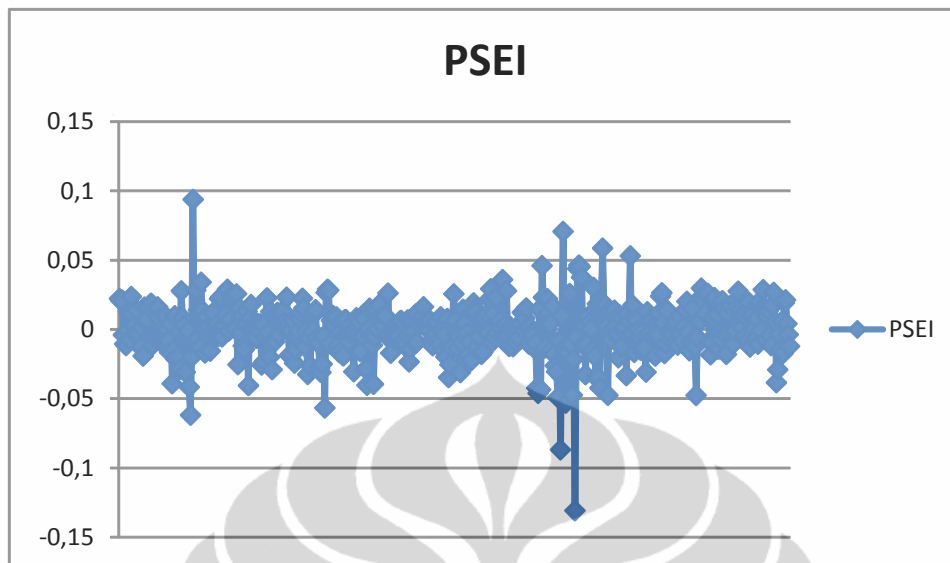


Sumber: Data *Yahoo Finance* , telah diolah kembali

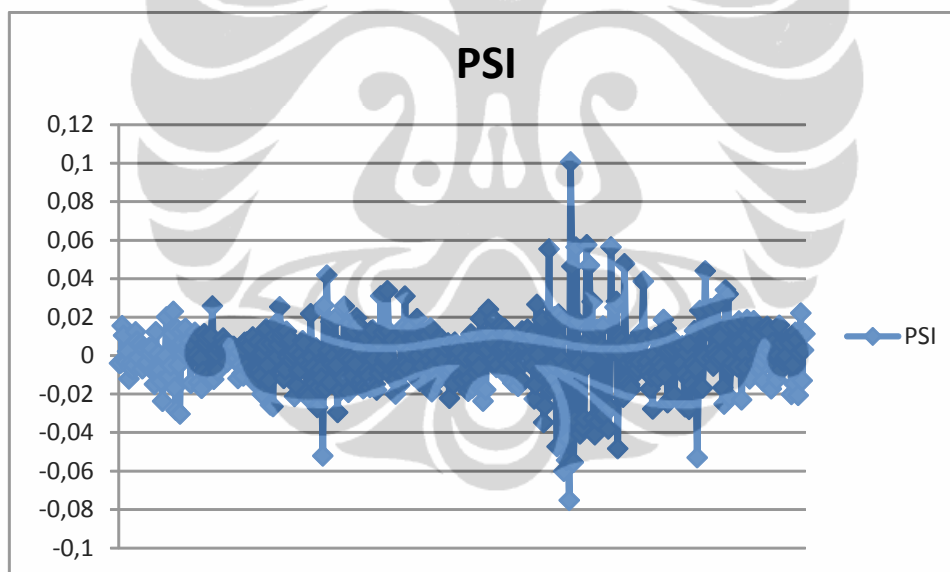


Sumber: Data *Yahoo Finance* , telah diolah kembali

## Lampiran 2 (lanjutan)

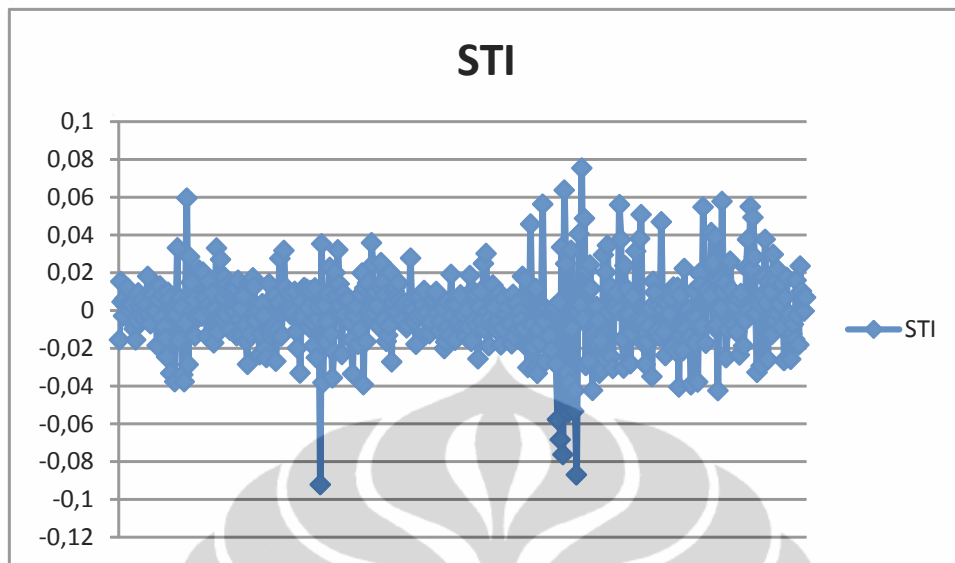


Sumber: Data *Yahoo Finance* , telah diolah kembali



Sumber: Data *Yahoo Finance* , telah diolah kembali

## Lampiran 2 (lanjutan)



Sumber: Data *Yahoo Finance*, telah diolah kembali

Lampiran 3 Hasil Uji *Augmented Dickey-Fuller* dengan EViews 4.1

<b>Augmented Dickey-Fuller Unit Root Test on CAC40</b>		
Null Hypothesis: CAC40 has a unit root		
Exogenous: Constant, Linear Trend		
Lag Length: 0 (Automatic based on SIC, MAXLAG=18)		
	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-24.90390	0.0000
Test critical values:	1% level	-3.976188
	5% level	-3.418674
	10% level	-3.131859

\*MacKinnon (1996) one-sided p-values.

Sumber: Data *Yahoo Finance*, telah diolah kembali

<b>Augmented Dickey-Fuller Unit Root Test on DAX</b>		
Null Hypothesis: DAX has a unit root		
Exogenous: Constant, Linear Trend		
Lag Length: 0 (Automatic based on SIC, MAXLAG=18)		
	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-23.57706	0.0000
Test critical values:	1% level	-3.976188
	5% level	-3.418674
	10% level	-3.131859

Sumber: Data *Yahoo Finance*, telah diolah kembali

<b>Augmented Dickey-Fuller Unit Root Test on DJIA</b>		
Null Hypothesis: DJIA has a unit root		
Exogenous: Constant, Linear Trend		
Lag Length: 1 (Automatic based on SIC, MAXLAG=18)		
	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-19.98449	0.0000
Test critical values:	1% level	-3.976224
	5% level	-3.418691
	10% level	-3.131870

\*MacKinnon (1996) one-sided p-values.

Sumber: Data *Yahoo Finance*, telah diolah kembali

## Lampiran 3 (lanjutan)

**Augmented Dickey-Fuller Unit Root Test on FTSE100**

Null Hypothesis: FTSE100 has a unit root  
 Exogenous: Constant, Linear Trend  
 Lag Length: 3 (Automatic based on SIC, MAXLAG=18)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-11.15103	0.0000
Test critical values: 1% level	-3.976297	
5% level	-3.418727	
10% level	-3.131891	

\*MacKinnon (1996) one-sided p-values.

Sumber: Data *Yahoo Finance*, telah diolah kembali

**Augmented Dickey-Fuller Unit Root Test on HANGSENG**

Null Hypothesis: HANGSENG has a unit root  
 Exogenous: Constant, Linear Trend  
 Lag Length: 0 (Automatic based on SIC, MAXLAG=18)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-23.76854	0.0000
Test critical values: 1% level	-3.976188	
5% level	-3.418674	
10% level	-3.131859	

\*MacKinnon (1996) one-sided p-values.

Sumber: Data *Yahoo Finance*, telah diolah kembali

**Augmented Dickey-Fuller Unit Root Test on IBOVESPA**

Null Hypothesis: IBOVESPA has a unit root  
 Exogenous: Constant, Linear Trend  
 Lag Length: 0 (Automatic based on SIC, MAXLAG=18)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-23.02126	0.0000
Test critical values: 1% level	-3.976188	
5% level	-3.418674	
10% level	-3.131859	

\*MacKinnon (1996) one-sided p-values.

Sumber: Data *Yahoo Finance*, telah diolah kembali

## Lampiran 3 (lanjutan)

**Augmented Dickey-Fuller Unit Root Test on IHSG**

Null Hypothesis: IHSG has a unit root  
 Exogenous: Constant, Linear Trend  
 Lag Length: 0 (Automatic based on SIC, MAXLAG=18)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-18.97675	0.0000
Test critical values: 1% level	-3.976188	
5% level	-3.418674	
10% level	-3.131859	

\*MacKinnon (1996) one-sided p-values.

Sumber: Data *Yahoo Finance*, telah diolah kembali

**Augmented Dickey-Fuller Unit Root Test on KLSE**

Null Hypothesis: KLSE has a unit root  
 Exogenous: Constant, Linear Trend  
 Lag Length: 0 (Automatic based on SIC, MAXLAG=18)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-20.71344	0.0000
Test critical values: 1% level	-3.976188	
5% level	-3.418674	
10% level	-3.131859	

\*MacKinnon (1996) one-sided p-values.

Sumber: Data *Yahoo Finance*, telah diolah kembali

**Augmented Dickey-Fuller Unit Root Test on KOSPI**

Null Hypothesis: KOSPI has a unit root  
 Exogenous: Constant, Linear Trend  
 Lag Length: 0 (Automatic based on SIC, MAXLAG=18)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-22.26682	0.0000
Test critical values: 1% level	-3.976188	
5% level	-3.418674	
10% level	-3.131859	

\*MacKinnon (1996) one-sided p-values.

Sumber: Data *Yahoo Finance*, telah diolah kembali



## Lampiran 3 (lanjutan)

**Augmented Dickey-Fuller Unit Root Test on NASDAQ**

Null Hypothesis: NASDAQ has a unit root  
 Exogenous: Constant, Linear Trend  
 Lag Length: 1 (Automatic based on SIC, MAXLAG=18)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-19.24839	0.0000
Test critical values: 1% level	-3.976224	
5% level	-3.418691	
10% level	-3.131870	

\*MacKinnon (1996) one-sided p-values.

Sumber: Data *Yahoo Finance*, telah diolah kembali

**Augmented Dickey-Fuller Unit Root Test on NIKKEI225**

Null Hypothesis: NIKKEI225 has a unit root  
 Exogenous: Constant, Linear Trend  
 Lag Length: 0 (Automatic based on SIC, MAXLAG=18)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-23.88792	0.0000
Test critical values: 1% level	-3.976188	
5% level	-3.418674	
10% level	-3.131859	

\*MacKinnon (1996) one-sided p-values.

Sumber: Data *Yahoo Finance*, telah diolah kembali

**Augmented Dickey-Fuller Unit Root Test on NZX50**

Null Hypothesis: NZX50 has a unit root  
 Exogenous: Constant, Linear Trend  
 Lag Length: 0 (Automatic based on SIC, MAXLAG=18)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-21.48943	0.0000
Test critical values: 1% level	-3.976188	
5% level	-3.418674	
10% level	-3.131859	

\*MacKinnon (1996) one-sided p-values.

Sumber: Data *Yahoo Finance*, telah diolah kembali

## Lampiran 3 (lanjutan)

**Augmented Dickey-Fuller Unit Root Test on PSEI**

Null Hypothesis: PSEI has a unit root  
 Exogenous: Constant, Linear Trend  
 Lag Length: 0 (Automatic based on SIC, MAXLAG=18)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-19.37273	0.0000
Test critical values: 1% level	-3.976188	
5% level	-3.418674	
10% level	-3.131859	

\*MacKinnon (1996) one-sided p-values.

Sumber: Data *Yahoo Finance*, telah diolah kembali

**Augmented Dickey-Fuller Unit Root Test on PSI**

Null Hypothesis: PSI has a unit root  
 Exogenous: Constant, Linear Trend  
 Lag Length: 4 (Automatic based on SIC, MAXLAG=18)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-11.73786	0.0000
Test critical values: 1% level	-3.976333	
5% level	-3.418744	
10% level	-3.131901	

\*MacKinnon (1996) one-sided p-values.

Sumber: Data *Yahoo Finance*, telah diolah kembali

**Augmented Dickey-Fuller Unit Root Test on STI**

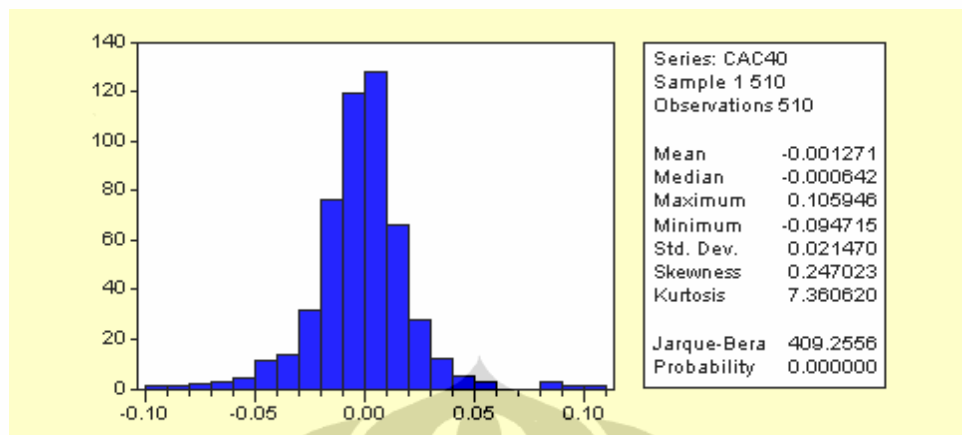
Null Hypothesis: STI has a unit root  
 Exogenous: Constant, Linear Trend  
 Lag Length: 0 (Automatic based on SIC, MAXLAG=18)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-22.91896	0.0000
Test critical values: 1% level	-3.976188	
5% level	-3.418674	
10% level	-3.131859	

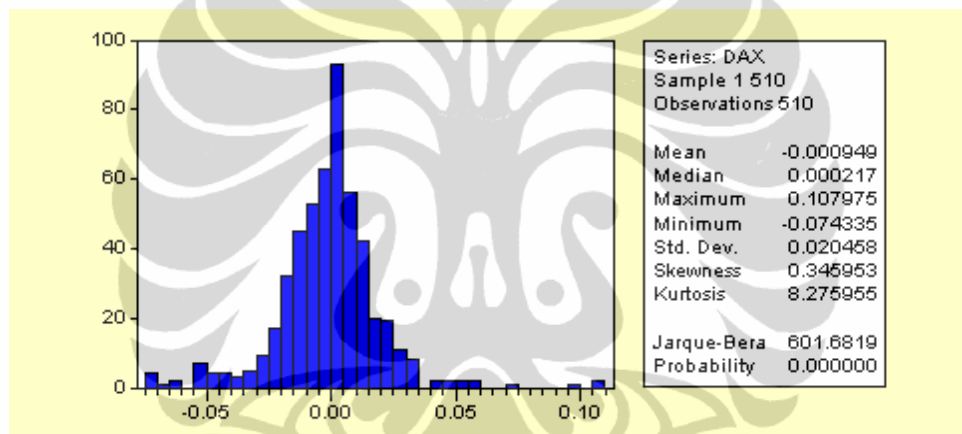
\*MacKinnon (1996) one-sided p-values.

Sumber: Data *Yahoo Finance*, telah diolah kembali

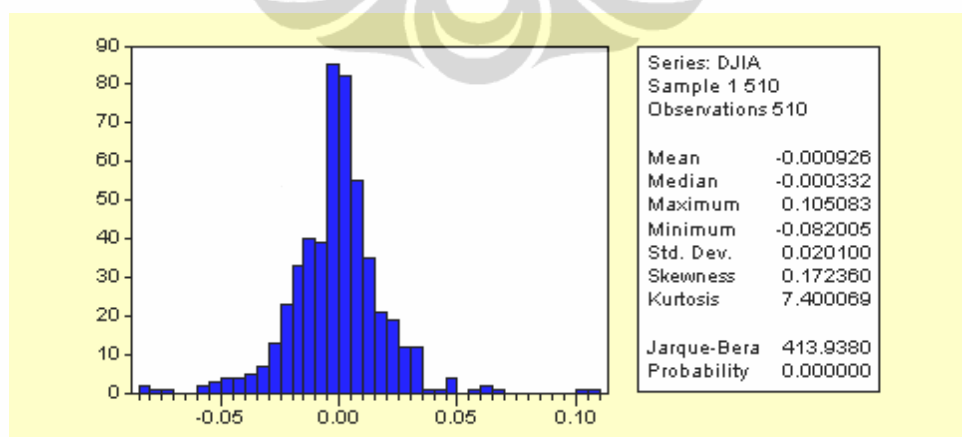
## Lampiran 4 Histogram dan Statistik dengan EViews 4.1



Sumber: Data *Yahoo Finance*, telah diolah kembali

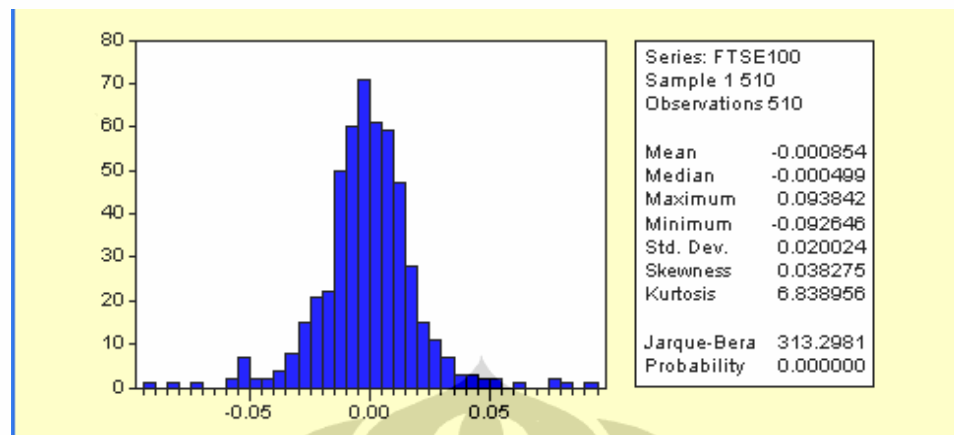


Sumber: Data *Yahoo Finance*, telah diolah kembali

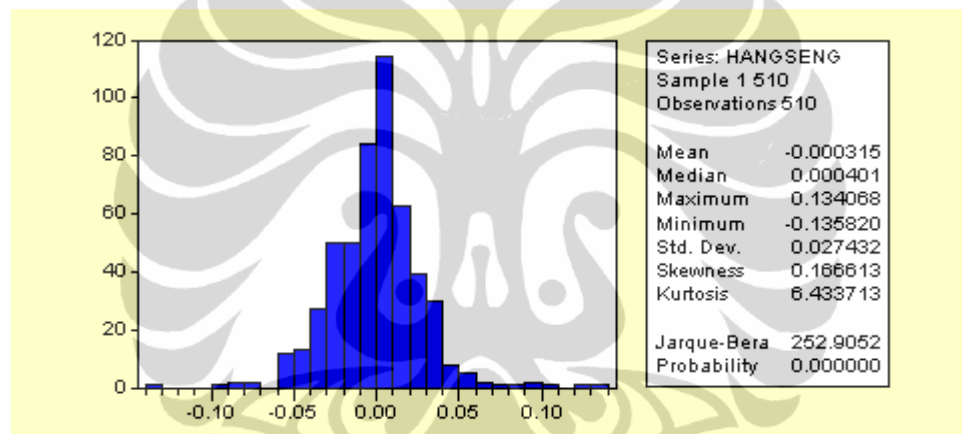


Sumber: Data *Yahoo Finance*, telah diolah kembali

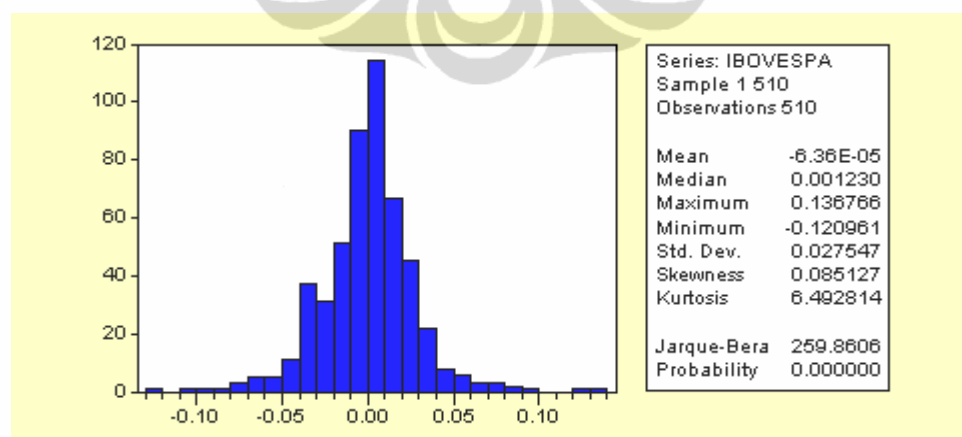
## Lampiran 4 (lanjutan)



Sumber: Data *Yahoo Finance*, telah diolah kembali

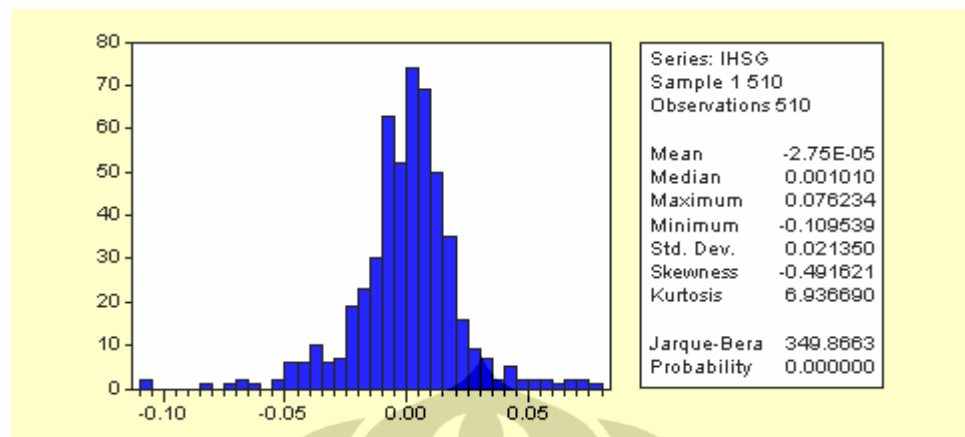


Sumber: Data *Yahoo Finance*, telah diolah kembali

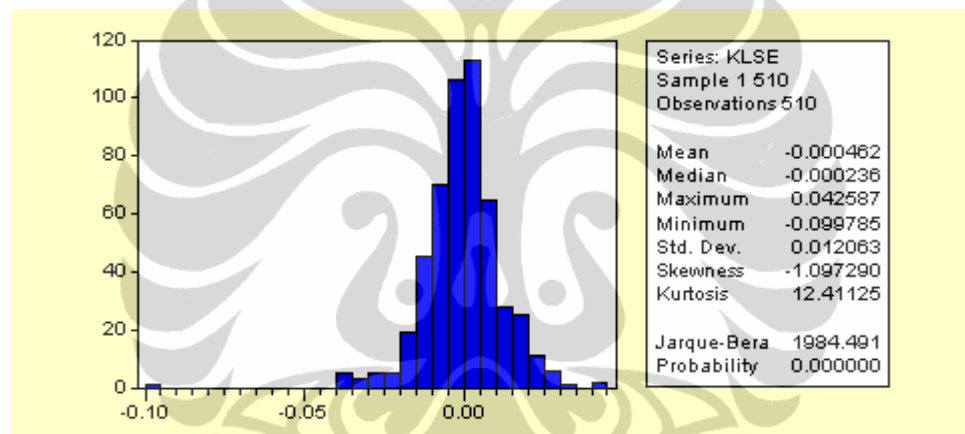


Sumber: Data *Yahoo Finance*, telah diolah kembali

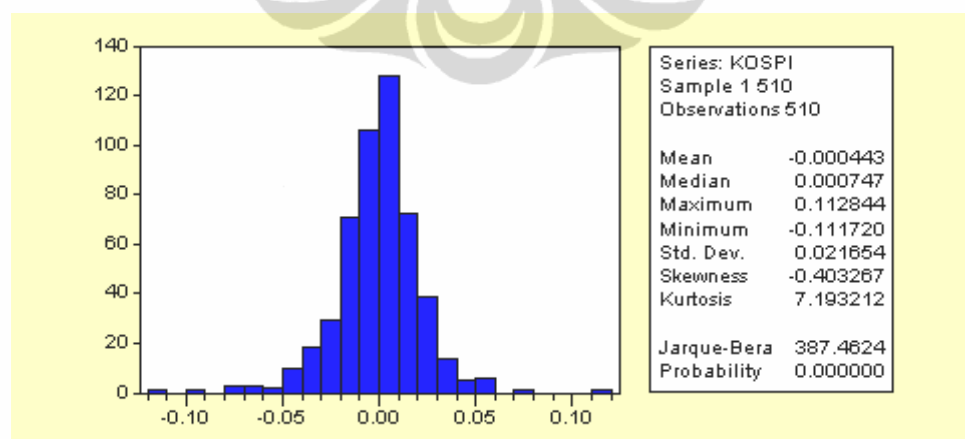
## Lampiran 4 (lanjutan)



Sumber: Data *Yahoo Finance*, telah diolah kembali

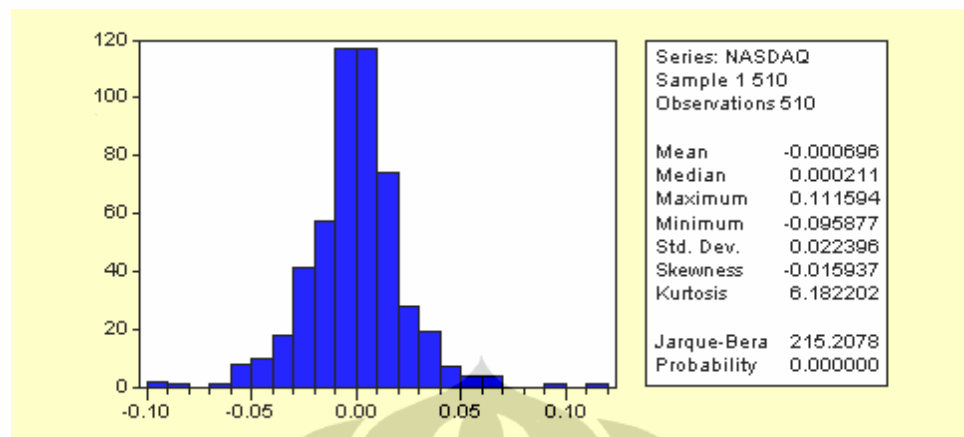


Sumber: Data *Yahoo Finance*, telah diolah kembali

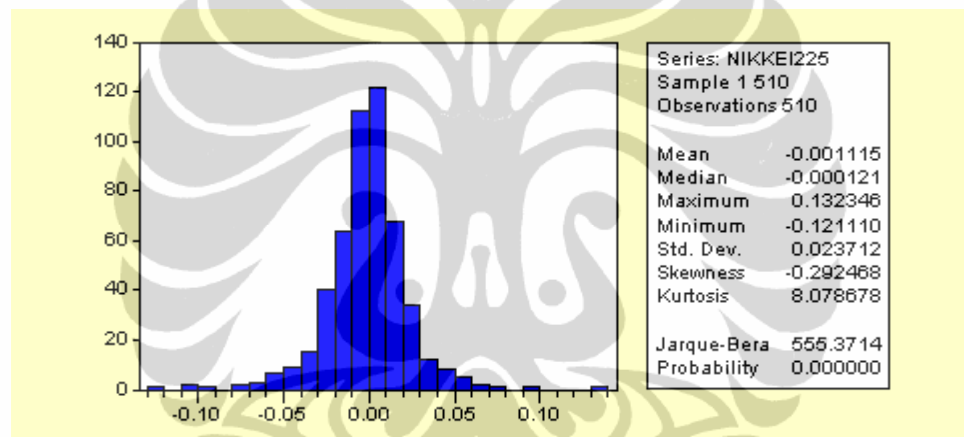


Sumber: Data *Yahoo Finance*, telah diolah kembali

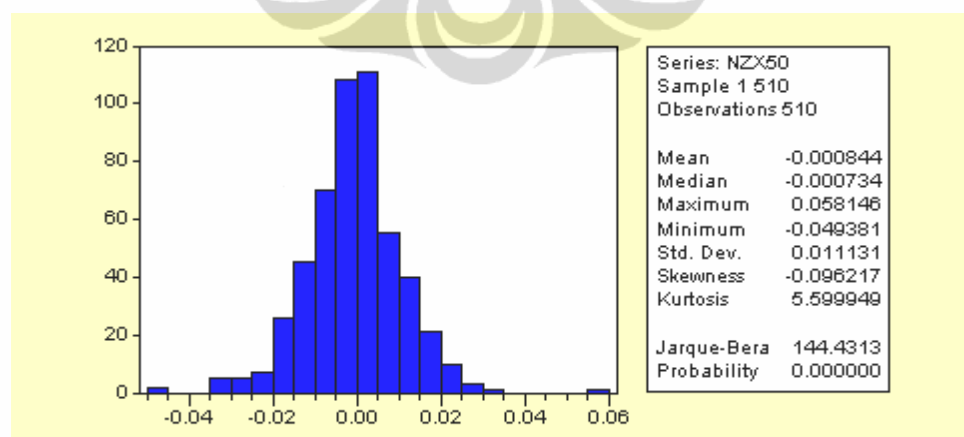
## Lampiran 4 (lanjutan)



Sumber: Data *Yahoo Finance*, telah diolah kembali

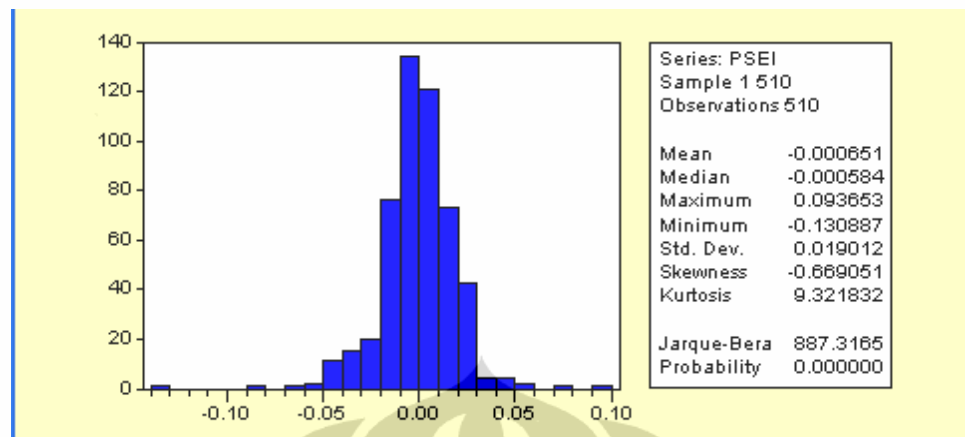


Sumber: Data *Yahoo Finance*, telah diolah kembali

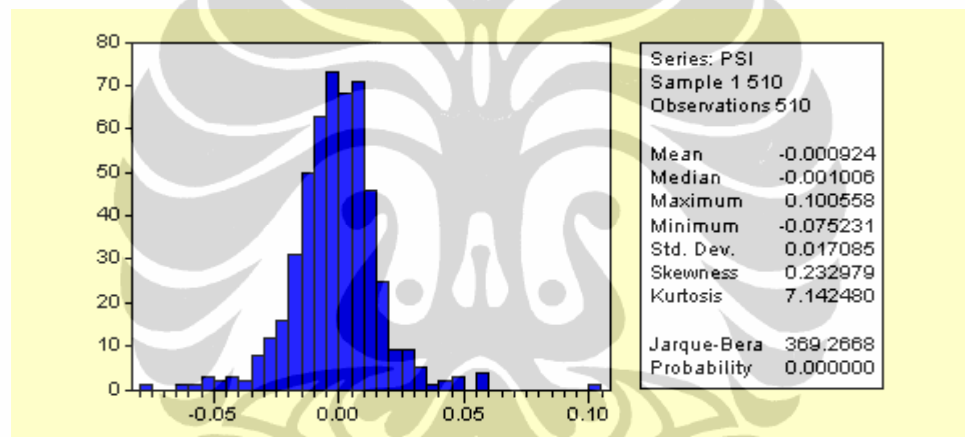


Sumber: Data *Yahoo Finance*, telah diolah kembali

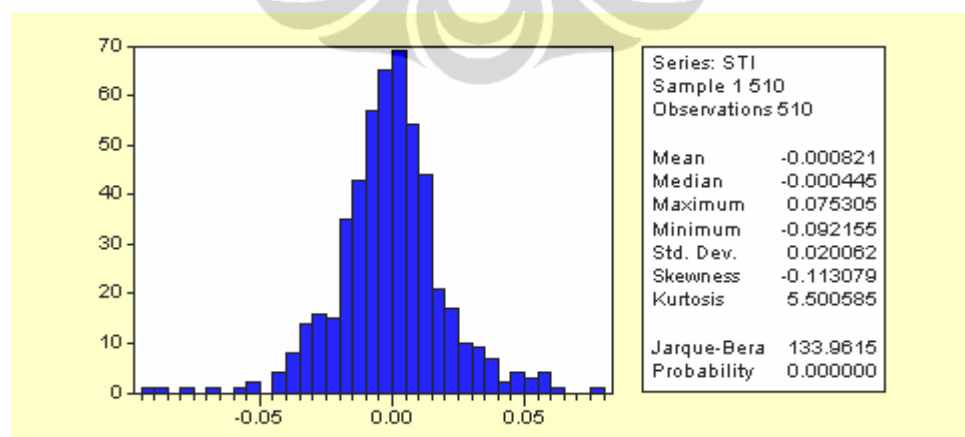
## Lampiran 4 (lanjutan)



Sumber: Data *Yahoo Finance*, telah diolah kembali



Sumber: Data *Yahoo Finance*, telah diolah kembali



Sumber: Data *Yahoo Finance*, telah diolah kembali

Lampiran 5 Hasil Uji *White Heteroskedasticity* dengan EViews 4.1

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White Heteroskedasticity Test:

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F-statistic	14.05329	Probability	0.000001
Obs*R-squared	26.78539	Probability	0.000002

---

Test Equation:  
 Dependent Variable: RESID^2  
 Method: Least Squares  
 Date: 07/02/09 Time: 14:32  
 Sample: 2 510  
 Included observations: 509

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Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000364	5.20E-05	7.009633	0.0000
CAC40(-1)	-0.007516	0.002247	-3.345539	0.0009
CAC40(-1)^2	0.178202	0.041659	4.277689	0.0000

---

Sumber: Data *Yahoo Finance*, telah diolah kembali

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White Heteroskedasticity Test:

---

F-statistic	10.56327	Probability	0.000032
Obs*R-squared	20.40005	Probability	0.000037

---

Test Equation:  
 Dependent Variable: RESID^2  
 Method: Least Squares  
 Date: 07/02/09 Time: 14:34  
 Sample: 2 510  
 Included observations: 509

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Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000350	5.18E-05	6.750351	0.0000
DAX(-1)	-0.008318	0.002378	-3.498358	0.0005
DAX(-1)^2	0.142667	0.043271	3.297025	0.0010

---

Sumber: Data *Yahoo Finance*, telah diolah kembali



## Lampiran 5 (lanjutan)

## White Heteroskedasticity Test:

F-statistic	7.563085	Probability	0.000580
Obs*R-squared	14.77420	Probability	0.000619

## Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 07/02/09 Time: 14:37

Sample: 2 510

Included observations: 509

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000344	4.69E-05	7.324510	0.0000
DJIA(-1)	-0.006476	0.002169	-2.986184	0.0030
DJIA(-1)^2	0.110524	0.042764	2.584528	0.0100

Sumber: Data *Yahoo Finance*, telah diolah kembali

## White Heteroskedasticity Test:

F-statistic	11.59302	Probability	0.000012
Obs*R-squared	22.30159	Probability	0.000014

## Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 07/02/09 Time: 14:45

Sample: 2 510

Included observations: 509

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000323	4.47E-05	7.221015	0.0000
FTSE100(-1)	-0.004911	0.002063	-2.380752	0.0176
FTSE100(-1)^2	0.176547	0.042669	4.137567	0.0000

Sumber: Data *Yahoo Finance*, telah diolah kembali

## Lampiran 5 (lanjutan)

White Heteroskedasticity Test:

F-statistic	57.00047	Probability	0.000000
Obs*R-squared	93.59096	Probability	0.000000

Test Equation:  
 Dependent Variable: RESID^2  
 Method: Least Squares  
 Date: 07/02/09 Time: 14:47  
 Sample: 2 510  
 Included observations: 509

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000488	7.59E-05	6.424128	0.0000
HANGSENG(-1)	-0.017481	0.002545	-6.868647	0.0000
HANGSENG(-1)^2	0.342123	0.039869	8.581118	0.0000

Sumber: Data *Yahoo Finance*, telah diolah kembali

White Heteroskedasticity Test:

F-statistic	9.294061	Probability	0.000109
Obs*R-squared	18.03578	Probability	0.000121

Test Equation:  
 Dependent Variable: RESID^2  
 Method: Least Squares  
 Date: 07/02/09 Time: 14:49  
 Sample: 2 510  
 Included observations: 509

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000656	8.38E-05	7.825067	0.0000
IBOVESPA(-1)	-0.008711	0.002799	-3.112061	0.0020
IBOVESPA(-1)^2	0.134007	0.043395	3.088078	0.0021

Sumber: Data *Yahoo Finance*, telah diolah kembali

## Lampiran 5 (lanjutan)

## White Heteroskedasticity Test:

F-statistic	21.84022	Probability	0.000000
Obs*R-squared	40.44777	Probability	0.000000

## Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 07/02/09 Time: 14:55

Sample: 2 510

Included observations: 509

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000356	4.97E-05	7.163444	0.0000
IHSG(-1)	-0.008471	0.002194	-3.861189	0.0001
IHSG(-1)^2	0.188642	0.042214	4.468681	0.0000

Sumber: Data *Yahoo Finance*, telah diolah kembali

## White Heteroskedasticity Test:

F-statistic	3.759554	Probability	0.023947
Obs*R-squared	7.452937	Probability	0.024078

## Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 07/02/09 Time: 14:57

Sample: 2 510

Included observations: 509

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000130	2.26E-05	5.754409	0.0000
KLSE(-1)	-0.001970	0.001907	-1.033078	0.3021
KLSE(-1)^2	0.094287	0.046496	2.027849	0.0431

Sumber: Data *Yahoo Finance*, telah diolah kembali

## Lampiran 5 (lanjutan)

## White Heteroskedasticity Test:

F-statistic	13.50499	Probability	0.000002
Obs*R-squared	25.79329	Probability	0.000003

## Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 07/02/09 Time: 14:59

Sample: 2 510

Included observations: 509

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000398	5.43E-05	7.334033	0.0000
KOSPI(-1)	-0.008077	0.002364	-3.417128	0.0007
KOSPI(-1)^2	0.142109	0.043791	3.245130	0.0013

Sumber: Data *Yahoo Finance*, telah diolah kembali

## White Heteroskedasticity Test:

F-statistic	6.448887	Probability	0.001715
Obs*R-squared	12.65175	Probability	0.001789

## Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 07/02/09 Time: 15:03

Sample: 2 510

Included observations: 509

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000431	5.44E-05	7.911566	0.0000
NASDAQ(-1)	-0.005173	0.002226	-2.323742	0.0205
NASDAQ(-1)^2	0.116067	0.043692	2.656517	0.0081

Sumber: Data *Yahoo Finance*, telah diolah kembali

## Lampiran 5 (lanjutan)

White Heteroskedasticity Test:				
F-statistic	23.52325	Probability	0.000000	
Obs*R-squared	43.29956	Probability	0.000000	
Test Equation:				
Dependent Variable: RESID^2				
Method: Least Squares				
Date: 07/02/09 Time: 15:08				
Sample: 2 510				
Included observations: 509				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000401	6.71E-05	5.973699	0.0000
NIKKEI225(-1)	-0.003333	0.002681	-1.243264	0.2143
NIKKEI225(-1)^2	0.274901	0.042325	6.494977	0.0000

Sumber: Data *Yahoo Finance*, telah diolah kembali

White Heteroskedasticity Test:				
F-statistic	5.650282	Probability	0.003742	
Obs*R-squared	11.11924	Probability	0.003850	
Test Equation:				
Dependent Variable: RESID^2				
Method: Least Squares				
Date: 07/02/09 Time: 15:10				
Sample: 2 510				
Included observations: 509				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000107	1.29E-05	8.307709	0.0000
NZX50(-1)	-0.001610	0.001055	-1.526354	0.1275
NZX50(-1)^2	0.123122	0.043967	2.800301	0.0053

Sumber: Data *Yahoo Finance*, telah diolah kembali

## Lampiran 5 (lanjutan)

## White Heteroskedasticity Test:

F-statistic	1.897743	Probability	0.150972
Obs*R-squared	3.789564	Probability	0.150351

## Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 07/02/09 Time: 15:13

Sample: 2 510

Included observations: 509

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000343	4.72E-05	7.254528	0.0000
PSEI(-1)	-0.004181	0.002426	-1.723396	0.0854
PSEI(-1)^2	0.019356	0.044008	0.439841	0.6602

Sumber: Data *Yahoo Finance*, telah diolah kembali

## White Heteroskedasticity Test:

F-statistic	56.39911	Probability	0.000000
Obs*R-squared	92.78355	Probability	0.000000

## Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 07/02/09 Time: 15:17

Sample: 2 510

Included observations: 509

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000169	3.18E-05	5.317723	0.0000
PSI(-1)	-0.008692	0.001722	-5.047025	0.0000
PSI(-1)^2	0.391466	0.040823	9.589276	0.0000

Sumber: Data *Yahoo Finance*, telah diolah kembali

## Lampiran 5 (lanjutan)

## White Heteroskedasticity Test:

F-statistic	4.959219	Probability	0.007363
Obs*R-squared	9.785432	Probability	0.007501

## Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 07/02/09 Time: 15:20

Sample: 2 510

Included observations: 509

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000352	4.16E-05	8.477669	0.0000
STI(-1)	-0.002690	0.001882	-1.429195	0.1536
STI(-1)^2	0.117581	0.044136	2.664055	0.0080

Sumber: Data *Yahoo Finance*, telah diolah kembali

Lampiran 6 Contoh Perhitungan EWMA atas Data *Return*

A	B	C	D	E
Hari	<i>Return</i>	EWMA	<i>Actual Variance</i>	SE
	CAC-40	$(\lambda^{(t-1)}(\text{Return} - \mu)^2)$	$(\text{Return}^2)$	$((D-C)^2)$
510	0,008062233	1,16042E-08	6,49996E-05	4,22344E-09
509	-0,004631738	1,14404E-09	2,1453E-05	4,60182E-10
508	0,007091167	1,08423E-08	5,02847E-05	2,52746E-09
507	0,004641722	8,17531E-09	2,15456E-05	4,6386E-10
506	-0,006341728	5,97867E-10	4,02175E-05	1,6174E-09
505	0,007097418	1,1528E-08	5,03733E-05	2,53631E-09
504	0,000322756	4,40394E-09	1,04172E-07	9,9536E-15
503	-0,014094731	5,50427E-10	0,000198661	3,94662E-08
502	-0,003016563	2,16626E-09	9,09965E-06	8,27643E-11
501	0,016847527	3,03614E-08	0,000283839	8,05474E-08
500	0,002440061	6,85542E-09	5,9539E-06	3,53673E-11
499	0,001248003	5,75279E-09	1,55751E-06	2,40796E-12
498	-0,004317456	1,58991E-09	1,86404E-05	3,47406E-10
497	-0,017071678	2,0053E-09	0,000291442	8,49374E-08
496	0,011529402	2,17399E-08	0,000132927	1,76638E-08
495	-0,018023122	2,72163E-09	0,000324833	1,05515E-07
494	0,008691114	1,71459E-08	7,55355E-05	5,70302E-09
493	-0,01706732	2,17126E-09	0,000291293	8,48506E-08
492	-0,01198184	1,299E-10	0,000143565	2,06107E-08
491	-0,028156437	1,5907E-08	0,000792785	6,28483E-07
490	-0,005493427	1,2119E-09	3,01777E-05	9,10623E-10
489	0,000425143	6,07767E-09	1,80747E-07	3,05092E-14
488	0,018376574	4,40432E-08	0,000337698	1,14011E-07
487	-0,016971346	2,38146E-09	0,000288027	8,29579E-08
486	0,004899285	1,29284E-08	2,4003E-05	5,75523E-10
485	-0,014925862	1,18313E-09	0,000222781	4,9631E-08
484	-0,011661384	9,83982E-11	0,000135988	1,84927E-08
483	0,015674479	3,99914E-08	0,000245689	6,03436E-08
482	0,022673533	6,57014E-08	0,000514089	2,6422E-07
481	-0,021894533	8,17975E-09	0,000479371	2,29788E-07
480	-0,031817635	2,88785E-08	0,001012362	1,02482E-06
479	0,021901581	6,65818E-08	0,000479679	2,30028E-07
478	-0,016405236	2,38831E-09	0,000269132	7,24306E-08
477	-0,00658161	9,49603E-10	4,33176E-05	1,87633E-09
476	-0,033108526	3,51889E-08	0,001096174	1,20152E-06
475	0,018470574	5,7647E-08	0,000341162	1,16352E-07
474	0,006643147	2,04569E-08	4,41314E-05	1,94578E-09



## Lampiran 6 (lanjutan)

A	B	C	D	E
Hari	Return	EWMA	Actual Variance	SE
	CAC-40	$(\lambda^{(t-1)}(\text{Return} - \mu)^2)$	$(\text{Return}^2)$	$((D-C)^2)$
473	0,003586566	1,40429E-08	1,28635E-05	1,65107E-10
472	0,018175586	6,00019E-08	0,000330352	1,09093E-07
471	0,000934656	9,58899E-09	8,73581E-07	7,46483E-13
470	0,008302798	2,67205E-08	6,89365E-05	4,74855E-09
469	0,003792146	1,56771E-08	1,43804E-05	2,06345E-10
468	-0,021035218	9,11114E-09	0,00044248	1,95781E-07
467	0,008340817	2,85059E-08	6,95692E-05	4,83591E-09
466	0,013050295	4,55857E-08	0,00017031	2,899E-08
465	0,012469032	4,42345E-08	0,000155477	2,41593E-08
464	-0,002020512	6,02063E-09	4,08247E-06	1,66174E-11
463	0,003788422	1,76881E-08	1,43521E-05	2,05477E-10
462	-0,021591552	1,13849E-08	0,000466195	2,17327E-07
461	0,00450569	2,03325E-08	2,03012E-05	4,11315E-10
460	-0,026625308	2,48572E-08	0,000708907	5,02514E-07
459	-0,008074722	4,99218E-10	6,52011E-05	4,25112E-09
458	0,017028824	7,33448E-08	0,000289981	8,40464E-08
457	0,005291745	2,44372E-08	2,80026E-05	7,82776E-10
456	0,010467877	4,41601E-08	0,000109576	1,19973E-08
455	-0,004871737	3,12635E-09	2,37338E-05	5,63146E-10
454	-0,018136291	6,41637E-09	0,000328925	1,08187E-07
453	0,020017558	9,98176E-08	0,000400703	1,60483E-07
452	0,032177823	1,99733E-07	0,001035412	1,07167E-06
451	-0,007366329	1,00758E-09	5,42628E-05	2,94434E-09
450	0,002087905	1,7803E-08	4,35935E-06	1,8849E-11
449	-0,001432441	9,34239E-09	2,05189E-06	4,17199E-12
448	-0,008981822	2,26356E-10	8,06731E-05	6,50812E-09
447	0,008679623	4,42599E-08	7,53359E-05	5,66883E-09
446	0,007457926	3,95524E-08	5,56207E-05	3,08926E-09
445	-0,003088466	6,71854E-09	9,53862E-06	9,08571E-11
444	0,010021887	5,38907E-08	0,000100438	1,0077E-08
443	0,004495135	2,92082E-08	2,02062E-05	4,07113E-10
442	0,00119082	1,80178E-08	1,41805E-06	1,9601E-12
441	-0,00030834	1,39217E-08	9,50734E-08	6,5856E-15
440	0,00667091	4,07917E-08	4,4501E-05	1,97671E-09
439	-0,002371358	9,15469E-09	5,62334E-06	3,15191E-11
438	0,005564822	3,71349E-08	3,09672E-05	9,56671E-10
437	-0,004006699	6,02784E-09	1,60536E-05	2,57526E-10

## Lampiran 6 (lanjutan)

A	B	C	D	E
Hari	Return	EWMA	Actual Variance	SE
	CAC-40	$(\lambda^{(t-1)}(\text{Return} - \mu)^2)$	$(\text{Return}^2)$	$((D-C)^2)$
436	0,00416022	3,21449E-08	1,73074E-05	2,98436E-10
435	-0,003225484	7,9156E-09	1,04037E-05	1,08073E-10
434	-0,006267084	2,6566E-09	3,92763E-05	1,54242E-09
433	-0,005712426	3,49592E-09	3,26318E-05	1,06461E-09
432	0,007666627	5,37186E-08	5,87772E-05	3,44844E-09
431	-0,008900425	3,5801E-10	7,92176E-05	6,27537E-09
430	-0,004650799	5,60641E-09	2,16299E-05	4,67612E-10
429	-0,013894582	2,1987E-09	0,000193059	3,72711E-08
428	0,007703499	5,84784E-08	5,93439E-05	3,51476E-09
427	-0,005339336	4,60592E-09	2,85085E-05	8,12472E-10
426	0,014977145	1,19811E-07	0,000224315	5,02634E-08
425	0,005983487	5,08613E-08	3,58021E-05	1,27815E-09
424	0,007105143	5,92689E-08	5,04831E-05	2,54256E-09
423	-0,005542912	4,5966E-09	3,07239E-05	9,43674E-10
422	0,007555898	6,49398E-08	5,70916E-05	3,25204E-09
421	-0,020215096	2,00694E-08	0,00040865	1,66979E-07
420	-0,001833847	1,53084E-08	3,36299E-06	1,1207E-11
419	-0,006277947	3,57787E-09	3,94126E-05	1,55307E-09
418	0,00435316	4,74799E-08	1,895E-05	3,57305E-10
417	-0,004599469	7,42206E-09	2,11551E-05	4,47225E-10
416	-0,009119053	3,50143E-10	8,31571E-05	6,91505E-09
415	-0,019264101	1,84955E-08	0,000371106	1,37706E-07
414	0,002057915	3,66656E-08	4,23502E-06	1,76261E-11
413	0,000604995	2,91692E-08	3,66019E-07	1,13468E-13
412	0,013394494	1,39733E-07	0,000179412	3,21387E-08
411	-0,0093909	2,35918E-10	8,8189E-05	7,77726E-09
410	-0,006766072	3,32572E-09	4,57797E-05	2,09548E-09
409	-0,016622934	1,03325E-08	0,000276322	7,63481E-08
408	0,013549582	1,53479E-07	0,000183591	3,36494E-08
407	-0,02303192	4,40226E-08	0,000530469	2,81351E-07
406	0,006446019	7,89472E-08	4,15512E-05	1,71994E-09
405	0,019213795	2,49495E-07	0,00036917	1,36102E-07
404	-0,01143592	3,38894E-10	0,00013078	1,71034E-08
403	-0,004447079	1,03765E-08	1,97765E-05	3,907E-10
402	0,023108915	3,39518E-07	0,000534022	2,84817E-07
401	0,00661333	8,90866E-08	4,37361E-05	1,90507E-09
400	0,012860601	1,70153E-07	0,000165395	2,72993E-08

## Lampiran 6 (lanjutan)

A	B	C	D	E
Hari	Return	EWMA	Actual Variance	SE
	CAC-40	$(\lambda^{(t-1)}(\text{Return} - \mu)^2)$	$(\text{Return}^2)$	$((D-C)^2)$
399	-0,007276119	3,05729E-09	5,29419E-05	2,80252E-09
398	-0,014718424	6,25177E-09	0,000216632	4,69267E-08
397	0,019964469	3,08338E-07	0,00039858	1,5862E-07
396	0,00259247	5,7386E-08	6,7209E-06	4,44024E-11
395	0,007898213	1,16372E-07	6,23818E-05	3,87698E-09
394	0,005609592	9,08393E-08	3,14675E-05	9,84496E-10
393	-0,004559215	1,22222E-08	2,07864E-05	4,31568E-10
392	0,003236813	6,85615E-08	1,0477E-05	1,08335E-10
391	-0,026895376	1,03551E-07	0,000723361	5,23102E-07
390	0,002581218	6,46687E-08	6,66269E-06	4,35339E-11
389	-0,016273389	1,37983E-08	0,000264823	7,0124E-08
388	-0,000999615	3,52211E-08	9,99229E-07	9,29312E-13
387	-0,002171388	2,75024E-08	4,71492E-06	2,19719E-11
386	0,002548855	6,97613E-08	6,49666E-06	4,13051E-11
385	0,016433372	3,06741E-07	0,000270056	7,27645E-08
384	0,002052234	6,71551E-08	4,21166E-06	1,71769E-11
383	0,002348388	7,18354E-08	5,51493E-06	2,96272E-11
382	-4,08717E-05	4,83249E-08	1,6705E-09	2,17663E-15
381	-0,00234314	2,97574E-08	5,49031E-06	2,98176E-11
380	-0,011414937	5,29151E-10	0,000130301	1,69782E-08
379	-0,000771419	4,43298E-08	5,95087E-07	3,03333E-13
378	-0,018064928	2,92484E-08	0,000326342	1,0648E-07
377	0,001108296	6,60354E-08	1,22832E-06	1,3509E-12
376	0,007825769	1,69473E-07	6,12427E-05	3,72994E-09
375	-0,011023715	2,32485E-10	0,000121522	1,47676E-08
374	-0,006458214	8,11318E-09	4,17085E-05	1,73893E-09
373	-0,005388136	1,34468E-08	2,9032E-05	8,42077E-10
372	0,005958299	1,47933E-07	3,55013E-05	1,24986E-09
371	-0,028664488	1,90066E-07	0,000821653	6,74801E-07
370	-0,004854819	1,75185E-08	2,35693E-05	5,54685E-10
369	-0,013156969	4,62907E-09	0,000173106	2,9964E-08
368	-0,012623235	3,09434E-09	0,000159346	2,53902E-08
367	-0,070773718	2,24418E-06	0,005008919	2,50668E-05
366	0,020463863	5,95948E-07	0,00041877	1,74869E-07
365	-0,04342353	6,99952E-07	0,001885603	3,55286E-06
364	0,058334908	3,08231E-06	0,003402962	1,15592E-05
363	-0,007590855	5,10033E-09	5,76211E-05	3,3196E-09

## Lampiran 6 (lanjutan)

A	B	C	D	E
Hari	Return	EWMA	Actual Variance	SE
	CAC-40	$(\lambda^{(t-1)}(\text{Return} - \mu)^2)$	$(\text{Return}^2)$	$((D-C)^2)$
362	-0,006131772	1,21428E-08	3,75986E-05	1,41274E-09
361	0,019030682	5,99403E-07	0,000362167	1,30731E-07
360	-0,013832082	8,55233E-09	0,000191327	3,66026E-08
359	-0,000775913	6,63387E-08	6,02041E-07	2,86977E-13
358	0,021989442	7,71548E-07	0,000483536	2,33061E-07
357	-0,000888291	6,74632E-08	7,8906E-07	5,20702E-13
356	-0,04036854	6,91564E-07	0,001629619	2,6534E-06
355	0,008249563	2,71247E-07	6,80553E-05	4,59468E-09
354	-0,019419429	6,56585E-08	0,000377114	1,42166E-07
353	-0,002999965	4,41558E-08	8,99979E-06	8,02034E-11
352	-0,005738729	1,77548E-08	3,2933E-05	1,08341E-09
351	0,033186538	1,61055E-06	0,001101346	1,20942E-06
350	0,003030083	1,55337E-07	9,18141E-06	8,14699E-11
349	0,000669134	1,07528E-07	4,4774E-07	1,15744E-13
348	-0,018039125	5,32608E-08	0,00032541	1,05857E-07
347	0,023617682	1,063E-06	0,000557795	3,0995E-07
346	-0,015058066	2,07675E-08	0,000226745	5,1404E-08
345	0,009520671	3,78881E-07	9,06432E-05	8,14764E-09
344	-0,007084318	1,04799E-08	5,01876E-05	2,51774E-09
343	0,019440646	8,86508E-07	0,000377939	1,42168E-07
342	0,010879243	4,59461E-07	0,000118358	1,39E-08
341	-0,000854968	9,38645E-08	7,30971E-07	4,05904E-13
340	-0,021068396	1,21711E-07	0,000443877	1,96919E-07
339	-0,015445802	2,80311E-08	0,000238573	5,69036E-08
338	-0,010070029	9,09805E-11	0,000101405	1,02831E-08
337	-0,014174364	1,64241E-08	0,000200913	4,03593E-08
336	0,017071488	8,65247E-07	0,000291436	8,44312E-08
335	-0,016613928	4,59439E-08	0,000276023	7,61631E-08
334	-0,012711785	6,64011E-09	0,000161589	2,6109E-08
333	-0,011315227	1,12194E-09	0,000128034	1,63925E-08
332	0,013203479	6,9215E-07	0,000174332	3,01507E-08
331	0,014887473	8,10846E-07	0,000221637	4,87641E-08
330	-0,014347393	2,0673E-08	0,000205848	4,23648E-08
329	-0,00824958	5,88392E-09	6,80556E-05	4,63076E-09
328	-0,035714005	8,69204E-07	0,00127549	1,62466E-06
327	0,033630021	2,66901E-06	0,001130978	1,27308E-06
326	-0,005830269	2,88436E-08	3,3992E-05	1,1535E-09

## Lampiran 6 (lanjutan)

A	B	C	D	E
Hari	Return	EWMA	Actual Variance	SE
	CAC-40	$(\lambda^{(t-1)}(\text{Return} - \mu)^2)$	$(\text{Return}^2)$	$((D-C)^2)$
325	-0,004891276	4,2909E-08	2,39246E-05	5,70334E-10
324	0,034316136	2,92493E-06	0,001177597	1,37985E-06
323	-0,003270474	7,51046E-08	1,0696E-05	1,12803E-10
322	0,009120762	5,78961E-07	8,31883E-05	6,8243E-09
321	-0,005015172	4,44354E-08	2,51519E-05	6,30387E-10
320	0,002371587	2,57443E-07	5,62443E-06	2,88045E-11
319	0,033206611	3,07709E-06	0,001102679	1,20912E-06
318	0,009402839	6,46002E-07	8,84134E-05	7,70311E-09
317	-0,004918458	4,99355E-08	2,41912E-05	5,82802E-10
316	0,002658155	2,9182E-07	7,06579E-06	4,58867E-11
315	0,008881291	6,50612E-07	7,88773E-05	6,11942E-09
314	-0,006474419	2,70402E-08	4,19181E-05	1,75486E-09
313	-0,007707703	1,28471E-08	5,94087E-05	3,52787E-09
312	-0,003194861	9,58073E-08	1,02071E-05	1,02239E-10
311	-0,012734514	1,07726E-08	0,000162168	2,62949E-08
310	-0,00657439	2,78258E-08	4,32226E-05	1,86579E-09
309	0,002972611	3,52588E-07	8,83642E-06	7,19753E-11
308	0,015446903	1,34827E-06	0,000238607	5,62916E-08
307	0,001448971	2,87995E-07	2,09952E-06	3,28162E-12
306	0,020267738	1,97742E-06	0,000410781	1,67121E-07
305	-0,010401186	4,19511E-12	0,000108185	1,17039E-08
304	-0,007709338	1,53899E-08	5,94339E-05	3,53056E-09
303	0,014670299	1,40315E-06	0,000215218	4,57167E-08
302	-0,003058478	1,21765E-07	9,35429E-06	8,52395E-11
301	0,009822683	9,49845E-07	9,64851E-05	9,12698E-09
300	0,006914278	7,09981E-07	4,78072E-05	2,21815E-09
299	-0,007137275	2,51777E-08	5,09407E-05	2,59239E-09
298	0,003898281	5,03614E-07	1,51966E-05	2,15884E-10
297	0,014537944	1,56726E-06	0,000211352	4,40096E-08
296	-0,001253322	2,1386E-07	1,57082E-06	1,84133E-12
295	-0,004441689	9,21352E-08	1,97286E-05	3,85591E-10
294	0,006799002	7,90813E-07	4,62264E-05	2,06439E-09
293	-0,003895023	1,14485E-07	1,51712E-05	2,26705E-10
292	-0,018973946	2,07727E-07	0,000360011	1,29458E-07
291	0,00314992	5,20806E-07	9,92199E-06	8,83823E-11
290	0,00450332	6,43271E-07	2,02799E-05	3,85597E-10
289	0,011253452	1,38816E-06	0,00012664	1,56881E-08

## Lampiran 6 (lanjutan)

A	B	C	D	E
Hari	Return	EWMA	Actual Variance	SE
	CAC-40	$(\lambda^{(t-1)}(\text{Return} - \mu)^2)$	$(\text{Return}^2)$	$((D-C)^2)$
288	0,000448938	3,54169E-07	2,01546E-07	2,3294E-14
287	0,004051093	6,42499E-07	1,64114E-05	2,48657E-10
286	0,012536196	1,65518E-06	0,000157156	2,41806E-08
285	-0,017107443	1,46847E-07	0,000292665	8,55666E-08
284	-0,005421325	8,01083E-08	2,93908E-05	8,59115E-10
283	0,000236668	3,76572E-07	5,60116E-08	1,02759E-13
282	-0,019066054	2,59697E-07	0,000363514	1,31954E-07
281	0,000824587	4,36828E-07	6,79944E-07	5,91053E-14
280	-0,006354903	5,71027E-08	4,03848E-05	1,62632E-09
279	0,01307007	1,99658E-06	0,000170827	2,85036E-08
278	0,000963104	4,75692E-07	9,27568E-07	2,04192E-13
277	0,007683583	1,23282E-06	5,90374E-05	3,34138E-09
276	-0,015894617	1,18526E-07	0,000252639	6,37665E-08
275	0,009779368	1,59922E-06	9,5636E-05	8,84292E-09
274	-0,013868598	4,96274E-08	0,000192338	3,69748E-08
273	-0,001631011	3,12698E-07	2,6602E-06	5,51075E-12
272	-0,023034542	6,73496E-07	0,00053059	2,80812E-07
271	0,000846301	5,36704E-07	7,16225E-07	3,22278E-14
270	-0,00801221	2,39901E-08	6,41955E-05	4,11798E-09
269	-0,021263825	5,29642E-07	0,00045215	2,03961E-07
268	0,002440748	7,441E-07	5,95725E-06	2,71769E-11
267	0,002137986	7,23785E-07	4,57099E-06	1,4801E-11
266	-0,00525909	1,22942E-07	2,7658E-05	7,58181E-10
265	0,006119408	1,31042E-06	3,74472E-05	1,30586E-09
264	-0,014525654	8,55941E-08	0,000210995	4,44826E-08
263	-0,005941295	9,80026E-08	3,5299E-05	1,23911E-09
262	-0,018047533	3,0333E-07	0,000325713	1,05892E-07
261	0,000465599	6,12978E-07	2,16782E-07	1,56971E-13
260	-0,008371658	2,10492E-08	7,00847E-05	4,90891E-09
259	0,013880279	3,20108E-06	0,000192662	3,58955E-08
258	-0,024570329	1,12329E-06	0,000603701	3,631E-07
257	-0,006543904	8,24968E-08	4,28227E-05	1,82672E-09
256	0,008498529	2,05839E-06	7,2225E-05	4,92335E-09
255	-0,021340682	7,12717E-07	0,000455425	2,06763E-07
254	-0,010357028	0	0,000107268	1,15064E-08
253	0,010997198	2,80504E-06	0,000120938	1,39555E-08
252	-0,018116661	3,77944E-07	0,000328213	1,07476E-07

## Lampiran 6 (lanjutan)

A	B	C	D	E
Hari	Return	EWMA	Actual Variance	SE
	CAC-40	$(\lambda^{(t-1)}(\text{Return} - \mu)^2)$	$(\text{Return}^2)$	$((D-C)^2)$
251	0,017794324	5,07595E-06	0,000316638	9,70709E-08
250	-0,015544162	1,75852E-07	0,000241621	5,82957E-08
249	0,014869222	4,24397E-06	0,000221094	4,70238E-08
248	-0,025225285	1,50439E-06	0,000636315	4,02984E-07
247	-0,03142766	3,08297E-06	0,000987698	9,69466E-07
246	0,010163653	2,98382E-06	0,0001033	1,00633E-08
245	-0,019840528	6,50279E-07	0,000393647	1,54446E-07
244	0,012552773	3,87239E-06	0,000157572	2,36236E-08
243	0,027234595	1,06388E-05	0,000741723	5,34484E-07
242	0,017212622	5,83911E-06	0,000296274	8,43526E-08
241	0,006440641	2,21185E-06	4,14819E-05	1,54213E-09
240	2,77316E-05	8,62631E-07	7,69039E-10	7,42806E-13
239	0,018654387	6,8698E-06	0,000347986	1,1636E-07
238	-0,013875265	1,03093E-07	0,000192523	3,70254E-08
237	0,006691012	2,47003E-06	4,47696E-05	1,78926E-09
236	-0,012119717	2,6945E-08	0,000146888	2,1568E-08
235	-0,000916143	7,88728E-07	8,39318E-07	2,55935E-15
234	0,018360711	7,44691E-06	0,000337116	1,08682E-07
233	-0,001862865	6,648E-07	3,47027E-06	7,87064E-12
232	-0,01792231	5,38113E-07	0,000321209	1,0283E-07
231	-0,007844163	6,05809E-08	6,15309E-05	3,7786E-09
230	0,024397251	1,18246E-05	0,000595226	3,40357E-07
229	0,014031299	5,94168E-06	0,000196877	3,64564E-08
228	0,002043622	1,5675E-06	4,17639E-06	6,8063E-12
227	0,007692277	3,38855E-06	5,91711E-05	3,1117E-09
226	0,010329714	4,54204E-06	0,000106703	1,04369E-08
225	-0,004418704	3,81917E-07	1,95249E-05	3,66455E-10
224	-0,025896341	2,66857E-06	0,00067062	4,4616E-07
223	0,004066244	2,34594E-06	1,65343E-05	2,01311E-10
222	0,007371691	3,61674E-06	5,43418E-05	2,57303E-09
221	-0,001073861	1,01188E-06	1,15318E-06	1,99647E-14
220	-0,026431712	3,09596E-06	0,000698635	4,83775E-07
219	0,007605806	3,94488E-06	5,78483E-05	2,90558E-09
218	-0,014130941	1,77681E-07	0,000199683	3,98026E-08
217	0,022020267	1,33448E-05	0,000484892	2,22357E-07
216	-0,010182448	3,95912E-10	0,000103682	1,07499E-08
215	0,002906786	2,33194E-06	8,4494E-06	3,74234E-11

## Lampiran 6 (lanjutan)

A	B	C	D	E
Hari	Return	EWMA	Actual Variance	SE
	CAC-40	$(\lambda^{(t-1)}(\text{Return} - \mu)^2)$	$(\text{Return}^2)$	$((D-C)^2)$
214	0,00103642	1,75576E-06	1,07417E-06	4,64566E-13
213	0,020015225	1,27316E-05	0,000400609	1,50449E-07
212	0,004720444	3,20154E-06	2,22826E-05	3,64087E-10
211	-0,00233843	9,24002E-07	5,46826E-06	2,06502E-11
210	0,01485734	9,32279E-06	0,000220741	4,46975E-08
209	-0,020463201	1,52826E-06	0,000418743	1,74068E-07
208	-0,032711798	7,63024E-06	0,001070062	1,12876E-06
207	-0,025258175	3,45948E-06	0,000637975	4,0261E-07
206	0,033626851	3,07562E-05	0,001130765	1,21002E-06
205	-0,010850837	3,95583E-09	0,000117741	1,38619E-08
204	-0,0022572	1,08604E-06	5,09495E-06	1,60714E-11
203	-0,008107649	8,54659E-08	6,5734E-05	4,30973E-09
202	0,019481537	1,53461E-05	0,00037953	1,3263E-07
201	-0,038512669	1,39427E-05	0,001483226	2,15879E-06
200	-0,019759932	1,58677E-06	0,000390455	1,51218E-07
199	-0,02158721	2,3096E-06	0,000466008	2,15016E-07
198	-0,010618386	1,27646E-09	0,00011275	1,27123E-08
197	0,088678607	0,000187022	0,007863895	5,89344E-05
196	-0,023715546	3,47217E-06	0,000562427	3,12431E-07
195	-0,020014227	1,85166E-06	0,000400569	1,58976E-07
194	-0,006125267	3,62806E-07	3,75189E-05	1,38057E-09
193	0,02692053	2,87277E-05	0,000724715	4,84398E-07
192	-0,015120327	4,78626E-07	0,000228624	5,20504E-08
191	-0,051731041	3,68476E-05	0,002676101	6,96566E-06
190	0,019691128	1,98319E-05	0,000387741	1,35357E-07
189	0,005549909	5,67121E-06	3,08015E-05	6,31531E-10
188	-0,022765276	3,52125E-06	0,000518258	2,64954E-07
187	0,02920883	3,65335E-05	0,000853156	6,66872E-07
186	-0,094715368	0,000169465	0,008971001	7,7467E-05
185	0,005437804	6,06217E-06	2,95697E-05	5,52605E-10
184	-0,065129229	7,43862E-05	0,004241816	1,73675E-05
183	-0,015617955	7,00278E-07	0,000243921	5,91561E-08
182	-0,080479234	0,000126949	0,006476907	4,0322E-05
181	0,105945896	0,000356348	0,011224533	0,000118117
180	0,027102142	3,77211E-05	0,000734526	4,85537E-07
179	-0,070632624	9,96608E-05	0,004988968	2,39053E-05
178	-0,060996615	7,17787E-05	0,003720587	1,33138E-05



## Lampiran 6 (lanjutan)

A	B	C	D	E
Hari	Return	EWMA	Actual Variance	SE
	CAC-40	$(\lambda^{(t-1)}(\text{Return} - \mu)^2)$	$(\text{Return}^2)$	$((D-C)^2)$
177	0,045752667	8,99218E-05	0,002093307	4,01355E-06
176	0,034993974	5,99428E-05	0,001224578	1,35638E-06
175	0,007767327	9,76927E-06	6,03314E-05	2,55652E-09
174	-0,052338779	5,3485E-05	0,002739348	7,21386E-06
173	0,003840194	6,24154E-06	1,47471E-05	7,23443E-11
172	-0,036002695	2,0782E-05	0,001296194	1,62668E-06
171	-0,040394303	2,90907E-05	0,0016317	2,56836E-06
170	0,015389473	2,18094E-05	0,000236836	4,62364E-08
169	0,088327559	0,000326949	0,007801758	5,58728E-05
168	0,001541762	4,85021E-06	2,37703E-06	6,1166E-12
167	0,022989051	3,88703E-05	0,000528496	2,39734E-07
166	0,011660793	1,72922E-05	0,000135974	1,40854E-08
165	0,045199173	0,000112342	0,002042965	3,72731E-06
164	-0,019970017	3,43216E-06	0,000398802	1,56317E-07
163	-0,065933407	0,000117059	0,004347214	1,78942E-05
162	0,023882577	4,53373E-05	0,000570377	2,75667E-07
161	0,010503518	1,71721E-05	0,000110324	8,67726E-09
160	-0,049509099	6,17242E-05	0,002451151	5,70936E-06
159	-0,031187986	1,78295E-05	0,00097269	9,1176E-07
158	0,010917441	1,89763E-05	0,000119191	1,00429E-08
157	0,00670944	1,24611E-05	4,50166E-05	1,05986E-09
156	-0,033814916	2,40226E-05	0,001143449	1,25311E-06
155	0,011054222	2,04221E-05	0,000122196	1,03579E-08
154	-0,04108557	4,29214E-05	0,001688024	2,70636E-06
153	-0,03542378	2,91447E-05	0,001254844	1,50234E-06
152	-0,033836532	2,60925E-05	0,001144911	1,25175E-06
151	0,096169283	0,000548056	0,009248531	7,56983E-05
150	0,011736874	2,40564E-05	0,000137754	1,29272E-08
149	-0,012449588	2,20199E-07	0,000154992	2,39544E-08
148	0,025090721	6,44778E-05	0,000629544	3,193E-07
147	0,003773954	1,04557E-05	1,42427E-05	1,43419E-11
146	-0,057479746	0,000118643	0,003303921	1,0146E-05
145	0,023253467	6,15892E-05	0,000540724	2,2957E-07
144	0,004351583	1,20357E-05	1,89363E-05	4,76176E-11
143	-0,001735198	4,2199E-06	3,01091E-06	1,46164E-12
142	-0,056331435	0,000122436	0,003173231	9,30735E-06
141	0,083271697	0,000518166	0,006934176	4,11652E-05

## Lampiran 6 (lanjutan)

A	B	C	D	E
Hari	Return	EWMA	Actual Variance	SE
	CAC-40	$(\lambda^{(t-1)}(\text{Return} - \mu)^2)$	$(\text{Return}^2)$	$((D-C)^2)$
140	0,015376269	3,99407E-05	0,00023643	3,86079E-08
139	0,006802573	1,81223E-05	4,6275E-05	7,92575E-10
138	-0,004279831	2,31942E-06	1,8317E-05	2,55921E-10
137	-0,028386517	2,08311E-05	0,000805794	6,16167E-07
136	-0,008732315	1,72613E-07	7,62533E-05	5,78828E-09
135	0,020506146	6,35587E-05	0,000420502	1,27409E-07
134	-0,002999888	3,68541E-06	8,99933E-06	2,82377E-11
133	-0,002399605	4,39933E-06	5,7581E-06	1,84625E-12
132	-0,002554161	4,31643E-06	6,52374E-06	4,87223E-12
131	-0,023377875	1,2265E-05	0,000546525	2,85434E-07
130	-0,007309217	6,85709E-07	5,34247E-05	2,7814E-09
129	-0,003907368	3,13337E-06	1,52675E-05	1,47238E-10
128	0,00464549	1,72998E-05	2,15806E-05	1,83255E-11
127	0,027226648	0,000110786	0,00074129	3,97536E-07
126	0,000261068	9,02304E-06	6,81566E-08	8,01899E-11
125	0,040117078	0,000208051	0,00160938	1,96372E-06
124	0,00304936	1,49772E-05	9,2986E-06	3,22466E-11
123	0,010745884	3,78674E-05	0,000115474	6,02278E-09
122	-0,014870548	1,76761E-06	0,000221133	4,81213E-08
121	-0,00652435	1,30057E-06	4,25671E-05	1,70293E-09
120	-0,007497208	7,38891E-07	5,62081E-05	3,07684E-09
119	-0,016310505	3,26752E-06	0,000266033	6,90455E-08
118	-0,01496922	2,00108E-06	0,000224078	4,9318E-08
117	-0,046694104	0,000126743	0,002180339	4,21726E-06
116	-0,018559102	6,5894E-06	0,00034444	1,14143E-07
115	0,006942082	2,99103E-05	4,81925E-05	3,3424E-10
114	-0,00901039	1,84948E-07	8,11871E-05	6,56135E-09
113	-0,0217795	1,35782E-05	0,000474347	2,12308E-07
112	-0,006760618	1,37351E-06	4,5706E-05	1,96537E-09
111	-0,012449968	4,74659E-07	0,000155002	2,38786E-08
110	-0,007162422	1,12844E-06	5,13003E-05	2,51722E-09
109	0,03660666	0,000248852	0,001340048	1,19071E-06
108	-0,000284269	1,16812E-05	8,08087E-08	1,34569E-10
107	0,040293717	0,000301395	0,001623584	1,74818E-06
106	-0,021776284	1,5632E-05	0,000474207	2,10291E-07
105	-0,011976071	3,20648E-07	0,000143426	2,04792E-08
104	-0,01486146	2,5326E-06	0,000220863	4,76682E-08

## Lampiran 6 (lanjutan)

A	B	C	D	E
Hari	Return	EWMA	Actual Variance	SE
	CAC-40	$(\lambda^{(t-1)}(\text{Return} - \mu)^2)$	$(\text{Return}^2)$	$((D-C)^2)$
103	0,017705505	0,000100303	0,000313485	4,54466E-08
102	0,028623525	0,000197483	0,000819306	3,86664E-07
101	-0,000880155	1,19107E-05	7,74674E-07	1,24011E-10
100	0,018258471	0,000110811	0,000333372	4,95332E-08
99	0,003860873	2,79143E-05	1,49063E-05	1,69206E-10
98	-0,037082561	0,000100643	0,001375116	1,62428E-06
97	0,002304716	2,3051E-05	5,31172E-06	3,14683E-10
96	-0,02115545	1,71079E-05	0,000447553	1,85283E-07
95	0,01124429	6,98573E-05	0,000126434	3,20093E-09
94	-0,011959714	3,92393E-07	0,000143035	2,03468E-08
93	-0,029806316	5,89666E-05	0,000888416	6,87987E-07
92	-0,000403527	1,57589E-05	1,62834E-07	2,43236E-10
91	-0,000511601	1,57332E-05	2,61735E-07	2,39365E-10
90	-0,043416651	0,000181016	0,001885006	2,90358E-06
89	-0,008279807	7,29223E-07	6,85552E-05	4,60036E-09
88	-0,007292266	1,6198E-06	5,31771E-05	2,65816E-09
87	-0,004118438	6,84882E-06	1,69615E-05	1,02267E-10
86	0,017612404	0,00014047	0,000310197	2,88072E-08
85	-0,015552916	4,94663E-06	0,000241893	5,61437E-08
84	-0,04581474	0,000235064	0,00209899	3,47422E-06
83	-0,010479047	2,8405E-09	0,00010981	1,20577E-08
82	0,046327471	0,000625519	0,002146235	2,31257E-06
81	-0,040441634	0,000179794	0,001635526	2,11916E-06
80	-0,013785269	2,38233E-06	0,000190034	3,5213E-08
79	-0,005999535	3,92742E-06	3,59944E-05	1,02829E-09
78	0,05573151	0,00092185	0,003106001	4,77052E-06
77	0,003941645	4,40325E-05	1,55366E-05	8,12018E-10
76	0,007469602	6,98384E-05	5,5795E-05	1,97218E-10
75	0,004214915	4,76173E-05	1,77655E-05	8,91128E-10
74	0,031301614	0,000397113	0,000979791	3,39514E-07
73	-0,008771513	5,86974E-07	7,69394E-05	5,8297E-09
72	-0,002511028	1,46672E-05	6,30526E-06	6,99225E-11
71	0,006013747	6,51574E-05	3,61652E-05	8,40551E-10
70	0,005082507	5,91381E-05	2,58319E-05	1,10931E-09
69	0,027712078	0,000366875	0,000767959	1,60868E-07
68	0,001678285	3,74164E-05	2,81664E-06	1,19714E-09
67	0,006609084	7,58727E-05	4,368E-05	1,03637E-09

## Lampiran 6 (lanjutan)

A	B	C	D	E
Hari	Return	EWMA	Actual Variance	SE
	CAC-40	$(\lambda^{(t-1)}(\text{Return} - \mu)^2)$	$(\text{Return}^2)$	$((D-C)^2)$
66	-0,000477053	2,62547E-05	2,2758E-07	6,7741E-10
65	-0,017950171	1,58238E-05	0,000322209	9,38716E-08
64	-0,043633134	0,000310104	0,00190385	2,54003E-06
63	0,031848212	0,000509037	0,001014309	2,55299E-07
62	0,011429303	0,000138407	0,000130629	6,05016E-11
61	0,052295395	0,001167993	0,002734808	2,45491E-06
60	-0,011198611	2,15047E-07	0,000125409	1,56735E-08
59	-0,009846407	8,07812E-08	9,69517E-05	9,38398E-09
58	-0,009410124	2,83465E-07	8,85504E-05	7,79106E-09
57	0,006439592	9,10131E-05	4,14684E-05	2,45469E-09
56	0,018021807	0,000265108	0,000324786	3,56137E-09
55	0,008717249	0,000122209	7,59904E-05	2,13618E-09
54	-0,004837997	1,04402E-05	2,34062E-05	1,68118E-10
53	0,01741103	0,000269679	0,000303144	1,11991E-09
52	0,017546542	0,000277875	0,000307881	9,00371E-10
51	-0,040445282	0,000329684	0,001635821	1,70599E-06
50	0,001527761	5,24881E-05	2,33405E-06	2,51543E-09
49	0,017102754	0,000285921	0,000292504	4,33406E-11
48	-0,005508925	9,0943E-06	3,03483E-05	4,51731E-10
47	0,030839542	0,000670072	0,000951077	7,89639E-08
46	-0,000135369	4,20936E-05	1,83247E-08	1,77033E-09
45	-0,016709714	1,65906E-05	0,000279215	6,89713E-08
44	0,02137579	0,000422414	0,000456924	1,19095E-09
43	0,013672807	0,000247171	0,000186946	3,62704E-09
42	0,024422032	0,000528329	0,000596436	4,63846E-09
41	-0,00401364	1,79343E-05	1,61093E-05	3,33078E-12
40	0,017980022	0,000365196	0,000323281	1,75687E-09
39	-0,009790393	1,49004E-07	9,58518E-05	9,15902E-09
38	0,018607781	0,000397289	0,00034625	2,60499E-09
37	-0,019484679	4,02584E-05	0,000379653	1,15188E-07
36	-0,005423045	1,20035E-05	2,94094E-05	3,02966E-10
35	-0,024499972	0,000100639	0,000600249	2,4961E-07
34	0,001074623	6,70932E-05	1,15481E-06	4,34787E-09
33	0,004034571	0,000108506	1,62778E-05	8,50599E-09
32	0,023803669	0,000623824	0,000566615	3,27286E-09
31	0,009070127	0,000205874	8,22672E-05	1,52785E-08
30	0,008637504	0,000200823	7,46065E-05	1,59306E-08

## Lampiran 6 (lanjutan)

A	B	C	D	E
Hari	Return	EWMA	Actual Variance	SE
	CAC-40	$(\lambda^{(t-1)}(\text{Return} - \mu)^2)$	$(\text{Return}^2)$	$((D-C)^2)$
29	-0,026366471	0,000145574	0,000695191	3,02079E-07
28	0,003276769	0,00010773	1,07372E-05	9,40765E-09
27	0,002533985	9,8277E-05	6,42108E-06	8,43752E-09
26	0,010430066	0,000260759	0,000108786	2,30957E-08
25	0,007546171	0,000197373	5,69447E-05	1,972E-08
24	-0,009502157	4,59199E-07	9,0291E-05	8,06975E-09
23	0,004265181	0,000137088	1,81918E-05	1,41363E-08
22	0,030598108	0,001097398	0,000936244	2,59707E-08
21	-0,000429151	6,58013E-05	1,8417E-07	4,3056E-09
20	-0,020453216	6,94401E-05	0,000418334	1,21727E-07
19	0,000718851	8,52758E-05	5,16747E-07	7,1841E-09
18	0,008125041	0,000242295	6,60163E-05	3,10742E-08
17	-0,014902119	1,49521E-05	0,000222073	4,28991E-08
16	0,002146852	0,000115473	4,60897E-06	1,22909E-08
15	0,005608	0,00019209	3,14497E-05	2,58053E-08
14	0,00591562	0,000203636	3,49946E-05	2,84401E-08
13	-0,002642216	4,6705E-05	6,9813E-06	1,57797E-09
12	-0,032561556	0,000394793	0,001060255	4,42839E-07
11	-0,001750206	6,05266E-05	3,06322E-06	3,30204E-09
10	-0,016567988	3,21627E-05	0,000274498	5,87265E-08
9	0,010360113	0,000365147	0,000107332	6,64688E-08
8	0,008482857	0,000308134	7,19589E-05	5,57785E-08
7	-0,030901565	0,000373895	0,000954907	3,37575E-07
6	-0,002060875	6,22134E-05	4,24721E-06	3,36008E-09
5	0,021563682	0,00093983	0,000464992	2,25471E-07
4	-0,006824374	1,17457E-05	4,65721E-05	1,21287E-09
3	-0,010605821	5,94464E-08	0,000112483	1,26392E-08
2	0,020227118	0,000916682	0,000409136	2,57603E-07
1	-0,016810939	4,1653E-05	0,000282608	5,80592E-08

Sumber: Data *Yahoo Finance*, telah diolah kembali

<i>Sum</i>	0,02438817
<i>Variance</i> ( $\sigma^2 = (1-\lambda)*\Sigma$ )	0,000487763
<i>Standard deviation</i> ( $\sigma$ )	0,022085366
RMSE (SQRT( $\Sigma$ SE/n))	0,001187397

## Lampiran 7 Uji Signifikansi Koefisien Model ARCH/GARCH

No.	Indeks	Model	Koefisien	Prob. z-Statistic	Signifikan
1	CAC-40	ARCH (1)	$\alpha_1$	0,0000	Ya
		ARCH (2)	$\alpha_1$	0,0001	Ya
			$\alpha_2$	0,0000	Ya
		ARCH (3)	$\alpha_1$	0,0008	Ya
			$\alpha_2$	0,0000	Ya
			$\alpha_3$	0,0153	Tidak
		GARCH (1,1)	$\alpha_1$	0,0001	Ya
			$\beta_1$	0,0000	Ya
		GARCH (1,2)	$\alpha_1$	0,0120	Tidak
			$\beta_1$	0,0000	Ya
			$\beta_2$	0,0000	Ya
		GARCH (2,1)	$\alpha_1$	0,4819	Tidak
			$\alpha_2$	0,0000	Ya
			$\beta_1$	0,0000	Ya
2	DAX	ARCH (1)	$\alpha_1$	0,0001	Ya
		ARCH (2)	$\alpha_1$	0,0006	Ya
			$\alpha_2$	0,0000	Ya
		ARCH (3)	$\alpha_1$	0,0019	Ya
			$\alpha_2$	0,0000	Ya
			$\alpha_3$	0,0006	Ya
		ARCH (4)	$\alpha_1$	0,0439	Tidak
			$\alpha_2$	0,0000	Ya
			$\alpha_3$	0,0029	Ya
			$\alpha_4$	0,0101	Tidak
		GARCH (1,1)	$\alpha_1$	0,0000	Ya
			$\beta_1$	0,0000	Ya
		GARCH (1,2)	$\alpha_1$	0,0327	Tidak
			$\beta_1$	0,0000	Ya
			$\beta_2$	0,0978	Tidak
		GARCH (2,1)	$\alpha_1$	0,5204	Tidak
			$\alpha_2$	0,0000	Ya
	$\beta_1$	0,0000	Ya		
3	DJIA	ARCH (1)	$\alpha_1$	0,0000	Ya
		ARCH (2)	$\alpha_1$	0,0015	Ya
			$\alpha_2$	0,0000	Ya
		ARCH (3)	$\alpha_1$	0,0531	Tidak
			$\alpha_2$	0,0000	Ya
		$\alpha_3$	0,0007	Ya	

## Lampiran 7 (lanjutan)

No.	Indeks	Model	Koefisien	Prob. z-Statistic	Signifikan
3	DJIA	GARCH (1,1)	$\alpha_1$	0,0001	Ya
			$\beta_1$	0,0000	Ya
		GARCH (1,2)	$\alpha_1$	0,0062	Ya
			$\beta_1$	0,0000	Ya
			$\beta_2$	0,0000	Ya
		GARCH (1,3)	$\alpha_1$	0,0000	Ya
			$\beta_1$	0,0000	Ya
			$\beta_2$	0,0000	Ya
			$\beta_3$	0,0000	Ya
		GARCH (1,4)	$\alpha_1$	0,0001	Ya
			$\beta_1$	0,0000	Ya
			$\beta_2$	0,0000	Ya
			$\beta_3$	0,0000	Ya
			$\beta_4$	0,0000	Ya
		GARCH (1,5)	$\alpha_1$	0,0001	Ya
			$\beta_1$	0,0000	Ya
			$\beta_2$	0,0000	Ya
			$\beta_3$	0,0000	Ya
			$\beta_4$	0,0000	Ya
			$\beta_5$	0,0000	Ya
		GARCH (1,6)	$\alpha_1$	0,0001	Ya
			$\beta_1$	0,0000	Ya
			$\beta_2$	0,0000	Ya
			$\beta_3$	0,0056	Ya
			$\beta_4$	0,2384	Tidak
			$\beta_5$	0,4967	Tidak
			$\beta_6$	0,0000	Ya
		GARCH (2,1)	$\alpha_1$	0,0090	Ya
			$\alpha_2$	0,0000	Ya
			$\beta_1$	0,0000	Ya
		GARCH (2,2)	$\alpha_1$	0,0000	Ya
			$\alpha_2$	0,0000	Ya
			$\beta_1$	0,0000	Ya
			$\beta_2$	0,0000	Ya
		GARCH (2,3)	$\alpha_1$	0,0000	Ya
			$\alpha_2$	0,0000	Ya
			$\beta_1$	0,0000	Ya
			$\beta_2$	0,6357	Tidak
			$\beta_3$	0,0240	Tidak

## Lampiran 7 (lanjutan)

No.	Indeks	Model	Koefisien	Prob. z-Statistic	Signifikan
3	DJIA	GARCH (3,1)	$\alpha_1$	0,0001	Ya
			$\alpha_2$	0,0189	Tidak
			$\alpha_3$	0,0294	Tidak
			$\beta_1$	0,0000	Ya
4	FTSE-100	ARCH (1)	$\alpha_1$	0,0000	Ya
		ARCH (2)	$\alpha_1$	0,0460	Tidak
			$\alpha_2$	0,0000	Ya
		GARCH (1,1)	$\alpha_1$	0,0000	Ya
			$\beta_1$	0,0000	Ya
		GARCH (1,2)	$\alpha_1$	0,0454	Tidak
			$\beta_1$	0,0000	Ya
		GARCH (2,1)	$\beta_2$	0,0472	Tidak
			$\alpha_1$	0,4680	Tidak
		$\alpha_2$	0,0332	Tidak	
5	HANGSENG	ARCH (1)	$\alpha_1$	0,0000	Ya
		ARCH (2)	$\alpha_1$	0,0000	Ya
			$\alpha_2$	0,0000	Ya
		ARCH (3)	$\alpha_1$	0,0042	Ya
			$\alpha_2$	0,0012	Ya
		ARCH (4)	$\alpha_3$	0,0006	Ya
			$\alpha_1$	0,0197	Tidak
		$\alpha_2$	0,0038	Ya	
		GARCH (1,1)	$\alpha_3$	0,0002	Ya
			$\beta_1$	0,0000	Ya
		GARCH (1,2)	$\alpha_1$	0,0147	Tidak
			$\beta_1$	0,0000	Ya
		GARCH (2,1)	$\beta_2$	0,0660	Tidak
			$\alpha_1$	0,2225	Tidak
		$\alpha_2$	0,0295	Tidak	
		$\beta_1$	0,0000	Ya	
		6	IBOVESPA	ARCH (1)	$\alpha_1$
ARCH (2)	$\alpha_1$			0,1054	Tidak
	$\alpha_2$			0,0000	Ya
GARCH (1,1)	$\alpha_1$			0,0001	Ya
		$\beta_1$	0,0000	Ya	



## Lampiran 7 (lanjutan)

No.	Indeks	Model	Koefisien	Prob. z-Statistic	Signifikan	
6	IBOVESPA	GARCH (1,2)	$\alpha_1$	0,1420	Tidak	
			$\beta_1$	0,0005	Ya	
			$\beta_2$	0,2028	Tidak	
		GARCH (2,1)	$\alpha_1$	0,7000	Tidak	
			$\alpha_2$	0,0030	Ya	
			$\beta_1$	0,0000	Ya	
7	IHSG	ARCH (1)	$\alpha_1$	0,0000	Ya	
		ARCH (2)	$\alpha_1$	0,0000	Ya	
			$\alpha_2$	0,0009	Ya	
			$\alpha_3$	0,0414	Tidak	
		ARCH (3)	$\alpha_1$	0,0001	Ya	
			$\alpha_2$	0,0015	Ya	
			$\alpha_3$	0,0414	Tidak	
		GARCH (1,1)	$\alpha_1$	0,0000	Ya	
			$\beta_1$	0,0000	Ya	
			$\beta_2$	0,0337	Tidak	
		GARCH (1,2)	$\alpha_1$	0,0002	Ya	
			$\beta_1$	0,0337	Tidak	
			$\beta_2$	0,6076	Tidak	
			GARCH (2,1)	$\alpha_1$	0,0007	Ya
				$\alpha_2$	0,4987	Tidak
$\beta_1$	0,0000			Ya		
8	KOSPI	ARCH (1)	$\alpha_1$	0,0000	Ya	
		ARCH (2)	$\alpha_1$	0,0007	Ya	
			$\alpha_2$	0,0000	Ya	
			$\alpha_3$	0,0232	Tidak	
		ARCH (3)	$\alpha_1$	0,0016	Ya	
			$\alpha_2$	0,0000	Ya	
			$\alpha_3$	0,0232	Tidak	
		GARCH (1,1)	$\alpha_1$	0,0000	Ya	
			$\beta_1$	0,0000	Ya	
			$\beta_2$	0,1143	Tidak	
		GARCH (1,2)	$\alpha_1$	0,1143	Tidak	
			$\beta_1$	0,0001	Ya	
			$\beta_2$	0,1195	Tidak	
			GARCH (2,1)	$\alpha_1$	0,5501	Tidak
				$\alpha_2$	0,0017	Ya
$\beta_1$	0,0000			Ya		
9	NASDAQ	ARCH (1)	$\alpha_1$	0,0009	Ya	
		ARCH (2)	$\alpha_1$	0,0104	Tidak	
			$\alpha_2$	0,0000	Ya	
		GARCH (1,1)	$\alpha_1$	0,0002	Ya	
			$\beta_1$	0,0000	Ya	

## Lampiran 7 (lanjutan)

No.	Indeks	Model	Koefisien	Prob. z-Statistic	Signifikan	
9	NASDAQ	GARCH (1,2)	$\alpha_1$	0,0242	Tidak	
			$\beta_1$	0,0000	Ya	
			$\beta_2$	0,0000	Ya	
		GARCH (2,1)	$\alpha_1$	0,5342	Tidak	
			$\alpha_2$	0,0014	Ya	
			$\beta_1$	0,0000	Ya	
10	NIKKEI -225	ARCH (1)	$\alpha_1$	0,0000	Ya	
		ARCH (2)	$\alpha_1$	0,0001	Ya	
			$\alpha_2$	0,0000	Ya	
			$\alpha_3$	0,0129	Tidak	
		ARCH (3)	$\alpha_1$	0,0612	Tidak	
			$\alpha_2$	0,0000	Ya	
			$\alpha_3$	0,0129	Tidak	
		GARCH (1,1)	$\alpha_1$	0,0000	Ya	
			$\beta_1$	0,0000	Ya	
			$\beta_2$	0,1589	Tidak	
		GARCH (1,2)	$\alpha_1$	0,0082	Ya	
			$\beta_1$	0,0001	Ya	
			$\beta_2$	0,1589	Tidak	
			GARCH (2,1)	$\alpha_1$	0,7219	Tidak
				$\alpha_2$	0,0060	Ya
$\beta_1$	0,0000			Ya		
11	NZX-50	ARCH (1)	$\alpha_1$	0,0005	Ya	
		ARCH (2)	$\alpha_1$	0,0013	Ya	
			$\alpha_2$	0,0000	Ya	
			$\alpha_3$	0,2624	Tidak	
		ARCH (3)	$\alpha_1$	0,0030	Ya	
			$\alpha_2$	0,0000	Ya	
			$\alpha_3$	0,2624	Tidak	
		GARCH (1,1)	$\alpha_1$	0,0002	Ya	
			$\beta_1$	0,0000	Ya	
			$\beta_2$	0,0231	Tidak	
		GARCH (1,2)	$\alpha_1$	0,0086	Ya	
			$\beta_1$	0,0231	Tidak	
			$\beta_2$	0,7824	Tidak	
			GARCH (2,1)	$\alpha_1$	0,0120	Tidak
				$\alpha_2$	0,5834	Tidak
$\beta_1$	0,0000			Ya		
12	PSI	ARCH (1)	$\alpha_1$	0,0000	Ya	
		ARCH (2)	$\alpha_1$	0,0016	Ya	
		$\alpha_2$	0,0000	Ya		

## Lampiran 7 (lanjutan)

No.	Indeks	Model	Koefisien	Prob. z-Statistic	Signifikan
12	PSI	ARCH (3)	$\alpha_1$	0,0097	Ya
			$\alpha_2$	0,0003	Ya
			$\alpha_3$	0,0033	Ya
		ARCH (4)	$\alpha_1$	0,0127	Tidak
			$\alpha_2$	0,0006	Ya
			$\alpha_3$	0,0352	Tidak
			$\alpha_4$	0,0007	Ya
		GARCH (1,1)	$\alpha_1$	0,0000	Ya
			$\beta_1$	0,0000	Ya
		GARCH (1,2)	$\alpha_1$	0,0317	Tidak
			$\beta_1$	0,0000	Ya
			$\beta_2$	0,0059	Ya
		GARCH (2,1)	$\alpha_1$	0,5859	Tidak
			$\alpha_2$	0,0271	Tidak
			$\beta_1$	0,0000	Ya
13	STI	ARCH (1)	$\alpha_1$	0,0019	Ya
		ARCH (2)	$\alpha_1$	0,0888	Tidak
			$\alpha_2$	0,0000	Ya
		GARCH (1,1)	$\alpha_1$	0,0001	Ya
			$\beta_1$	0,0000	Ya
		GARCH (1,2)	$\alpha_1$	0,0605	Tidak
			$\beta_1$	0,0004	Ya
			$\beta_2$	0,2529	Tidak
		GARCH (2,1)	$\alpha_1$	0,5492	Tidak
			$\alpha_2$	0,0024	Ya
			$\beta_1$	0,0000	Ya

Sumber: Data *Yahoo Finance* , telah diolah kembali

## Lampiran 8 Model ARCH/GARCH yang Signifikan

No.	Indeks	Model	Koef.	Nilai	Jumlah Koefisien	
1	CAC-40	ARCH (1)	$\alpha_1$	0,251156	0,251156	
		ARCH (2)	$\alpha_1$	0,121382	0,655043	
			$\alpha_2$	0,533661		
		GARCH (1,1)	$\alpha_1$	0,113530	0,986341	
			$\beta_1$	0,872811		
2	DAX	ARCH (1)	$\alpha_1$	0,229253	0,229253	
		ARCH (2)	$\alpha_1$	0,116665	0,748063	
			$\alpha_2$	0,631398		
		ARCH (3)	$\alpha_1$	0,092189	0,852778	
			$\alpha_2$	0,539736		
			$\alpha_3$	0,220853		
			GARCH (1,1)	$\alpha_1$	0,117361	0,995878
				$\beta_1$	0,878517	
		3	DJIA	ARCH (1)	$\alpha_1$	0,519250
ARCH (2)	$\alpha_1$			0,168152	0,544924	
	$\alpha_2$			0,376772		
GARCH (1,1)	$\alpha_1$			0,089690	0,983056	
	$\beta_1$			0,893366		
GARCH (1,2)	$\alpha_1$			0,034581	0,994128	
	$\beta_1$			1,702714		
	$\beta_2$			-0,743167		
GARCH (1,3)	$\alpha_1$			0,015798	0,997271	
	$\beta_1$			2,543529		
	$\beta_2$			-2,222063		
	$\beta_3$			0,660007		
GARCH (1,4)	$\alpha_1$			0,016340	0,997407	
	$\beta_1$			1,996515		
	$\beta_2$			-0,610768		
	$\beta_3$			-0,948145		
	$\beta_4$			0,543465		
GARCH (1,5)	$\alpha_1$	0,019918	0,996839			
	$\beta_1$	1,799759				
	$\beta_2$	-0,416696				
	$\beta_3$	-0,498176				
	$\beta_4$	-0,198823				
	GARCH (2,1)	$\alpha_1$	-0,058070	0,979420		
		$\alpha_2$	0,178208			
		$\beta_1$	0,859282			

## Lampiran 8 (lanjutan)

No.	Indeks	Model	Koef.	Nilai	Jumlah Koefisien	
3	DJIA	GARCH (2,2)	$\alpha_1$	-0,103427	0,990163	
			$\alpha_2$	0,164656		
			$\beta_1$	1,619663		
			$\beta_2$	-0,690729		
4	FTSE-100	ARCH (1)	$\alpha_1$	0,345239	0,345239	
			GARCH (1,1)	$\alpha_1$	0,108326	0,980870
				$\beta_1$	0,872544	
5	HANGSENG	ARCH (1)	$\alpha_1$	0,180063	0,180063	
			ARCH (2)	$\alpha_1$	0,156819	0,448410
		$\alpha_2$		0,291591		
		ARCH (3)		$\alpha_1$	0,129076	
			$\alpha_2$	0,196657		
		GARCH (1,1)	$\alpha_1$	0,129623	0,979187	
			$\beta_1$	0,849564		
6	IBOVESPA	ARCH (1)	$\alpha_1$	0,253895	0,253895	
			GARCH (1,1)	$\alpha_1$	0,080347	0,977734
				$\beta_1$	0,897387	
7	IHSG	ARCH (1)	$\alpha_1$	0,253768	0,253768	
			ARCH (2)	$\alpha_1$	0,240691	0,443660
		$\alpha_2$		0,202969		
		GARCH (1,1)		$\alpha_1$	0,158622	
			$\beta_1$	0,804103		
8	KOSPI	ARCH (1)	$\alpha_1$	0,475902	0,475902	
			ARCH (2)	$\alpha_1$	0,200614	0,490989
		$\alpha_2$		0,290375		
		GARCH (1,1)		$\alpha_1$	0,093473	
$\beta_1$	0,886396					
9	NASDAQ	ARCH (1)	$\alpha_1$	0,169920	0,169920	
			GARCH (1,1)	$\alpha_1$	0,088124	0,987738
				$\beta_1$	0,899614	
10	NIKKEI-225	ARCH (1)	$\alpha_1$	0,531869	0,531869	
			ARCH (2)	$\alpha_1$	0,170298	0,597049
		$\alpha_2$		0,426751		
		GARCH (1,1)		$\alpha_1$	0,136343	
$\beta_1$	0,855452					
11	NZX-50	ARCH (1)	$\alpha_1$	0,225517	0,225517	
			ARCH (2)	$\alpha_1$	0,197486	0,527115
				$\alpha_2$	0,329629	

## Lampiran 8 (lanjutan)

No.	Indeks	Model	Koef.	Nilai	Jumlah Koefisien
11	NZX-50	GARCH (1,1)	$\alpha_1$	0,155345	0,944037
			$\beta_1$	0,788692	
12	PSI	ARCH (1)	$\alpha_1$	0,293561	0,293561
		ARCH (2)	$\alpha_1$	0,173503	0,474971
			$\alpha_2$	0,301468	
		ARCH (3)	$\alpha_1$	0,144653	0,591911
			$\alpha_2$	0,246189	
			$\alpha_3$	0,201069	
		GARCH (1,1)	$\alpha_1$	0,131415	0,983564
			$\beta_1$	0,852149	
13	STI	ARCH (1)	$\alpha_1$	0,114274	0,114274
		GARCH (1,1)	$\alpha_1$	0,096541	0,980171
			$\beta_1$	0,883630	

Sumber: Data *Yahoo Finance*, telah diolah kembali

## Lampiran 9 Uji Signifikansi Koefisien Model IGARCH

No.	Indeks	Model	Koefisien	Prob. <i>Chi-Square</i>	Signifikan	
1	CAC-40	IGARCH (1,1)	$\alpha_1$	0,000	Ya	
			$\beta_1$	0,000	Ya	
2	DAX	IGARCH (1,1)	$\alpha_1$	0,000	Ya	
			$\beta_1$	0,000	Ya	
3	DJIA	IGARCH (1,1)	$\alpha_1$	0,000	Ya	
			$\beta_1$	0,000	Ya	
		IGARCH (1,2)	$\alpha_1$	0,000	Ya	
			$\beta_1$	0,000	Ya	
				$\beta_2$	0,369	Tidak
		IGARCH (1,3)	$\alpha_1$	0,000	Ya	
			$\beta_1$	0,000	Ya	
			$\beta_2$	0,363	Tidak	
		IGARCH (1,4)	$\alpha_1$	0,000	Ya	
			$\beta_1$	0,000	Ya	
$\beta_2$	0,361		Tidak			
$\beta_3$	N/A		Tidak			
$\beta_4$	N/A		Tidak			
IGARCH (1,5)	$\alpha_1$		0,000	Ya		
	$\beta_1$		0,000	Ya		
	$\beta_2$	0,353	Tidak			
	$\beta_3$	N/A	Tidak			
IGARCH (2,2)	$\beta_4$	N/A	Tidak			
	$\beta_5$	N/A	Tidak			
	$\alpha_1$	N/A	Tidak			
	$\alpha_2$	0,000	Ya			
	$\beta_1$	0,000	Ya			
4	FTSE-100	IGARCH (1,1)	$\beta_2$	N/A	Tidak	
			$\alpha_1$	0,000	Ya	
5	NASDAQ	IGARCH (1,1)	$\beta_1$	0,000	Ya	
			$\alpha_1$	0,000	Ya	
6	NIKKEI-225	IGARCH (1,1)	$\beta_1$	0,000	Ya	
			$\alpha_1$	0,000	Ya	
7	PSI	IGARCH (1,1)	$\beta_1$	0,000	Ya	
			$\alpha_1$	0,000	Ya	
8	STI	IGARCH (1,1)	$\beta_1$	0,000	Ya	
			$\alpha_1$	0,000	Ya	

Sumber: Data *Yahoo Finance*, telah diolah kembali

## Lampiran 10 Nilai AIC dan SIC

No.	Indeks	Model	AIC	SIC
1	CAC-40	ARCH (1)	-4,905254	-4,871994
		ARCH (2)	-5,031501	-4,989924
		IGARCH (1,1)	-5,137700	-5,113510
2	DAX	ARCH (1)	-4,989999	-4,948738
		ARCH (2)	-5,156004	-5,114428
		ARCH (3)	-5,200451	-5,150560
		IGARCH (1,1)	-5,257780	-5,243260
3	DJIA	ARCH (1)	-5,098402	-5,065141
		ARCH (2)	-5,207657	-5,166081
		IGARCH (1,1)	-5,356180	-5,341670
		GARCH (2,1)	-5,430793	-5,380902
4	FTSE-100	ARCH (1)	-5,042751	-5,009490
		IGARCH (1,1)	-5,253050	-5,238540
5	HANGSENG	ARCH (1)	-4,419858	-4,386597
		ARCH (2)	-4,518761	-4,177185
		ARCH (3)	-4,555128	-4,505237
		GARCH (1,1)	-4,608216	-4,566640
6	IBOVESPA	ARCH (1)	-4,391021	-4,357760
		GARCH (1,1)	-4,628169	-4,586593
7	IHSG	ARCH (1)	-4,952252	-4,918991
		ARCH (2)	-5,022501	-4,980925
		GARCH (1,1)	-5,096738	-5,055162
8	KOSPI	ARCH (1)	-4,901360	-4,868099
		ARCH (2)	-4,960612	-4,919035
		GARCH (1,1)	-5,063050	-5,021474
9	NASDAQ	ARCH (1)	-4,793260	-4,759999
		IGARCH (1,1)	-5,063570	-5,049050
10	NIKKEI-225	ARCH (1)	-4,831708	-4,798447
		ARCH (2)	-4,969936	-4,928359
		IGARCH (1,1)	-5,076640	-5,062130
11	NZX-50	ARCH (1)	-6,189234	-6,155974
		ARCH (2)	-6,340702	-6,299126
		GARCH (1,1)	-6,375404	-6,333828
12	PSI	ARCH (1)	-5,412404	-5,379143
		ARCH (2)	-5,486326	-5,444750
		ARCH (3)	-5,512956	-5,463065
		IGARCH (1,1)	-5,607240	-5,592720
13	STI	ARCH (1)	-4,986657	-4,953396
		IGARCH (1,1)	-5,134760	-5,120240



Lampiran 11 Contoh *Backtesting* VaR dengan Distribusi Normal

Hari	Posisi	Actual Loss	VaR	Indikator
	<b>KLSE</b>			
	100.000.000			
1	100.855.581	0	2.518.834	0
2	99.910.032	945.549	2.541.573	0
3	100.316.230	0	2.517.951	0
4	101.051.517	0	2.525.444	0
5	100.614.310	437.207	2.541.084	0
6	99.492.361	1.121.950	2.525.637	0
7	99.160.037	332.324	2.492.858	0
8	98.174.055	985.982	2.479.756	0
9	96.392.266	1.781.789	2.450.382	0
10	96.392.266	0	2.407.693	0
11	94.744.005	1.648.261	2.417.818	0
12	94.167.512	576.493	2.390.070	0
13	93.664.114	503.398	2.371.312	0
14	95.201.840	0	2.354.538	0
15	94.840.329	361.511	2.392.066	0
16	96.076.738	0	2.383.145	0
17	95.541.579	535.159	2.409.787	0
18	94.162.014	1.379.564	2.395.308	0
19	93.476.441	685.573	2.356.401	0
20	93.622.459	0	2.334.932	0
21	92.265.753	1.356.706	2.334.354	0
22	92.135.408	130.345	2.296.462	0
23	92.642.496	0	2.289.584	0
24	95.101.046	0	2.300.875	0
25	95.282.826	0	2.358.702	0
26	95.296.180	0	2.359.961	0
27	96.320.612	0	2.356.123	0
28	96.045.636	274.976	2.377.816	0
29	96.805.446	0	2.368.245	0
30	97.067.980	0	2.383.376	0
31	96.734.414	333.566	2.386.307	0
32	95.860.865	873.549	2.376.666	0
33	94.192.389	1.668.476	2.351.152	0
34	94.586.237	0	2.306.465	0
35	94.249.376	336.861	2.313.176	0
36	93.474.388	774.988	2.301.091	0
37	94.069.061	0	2.280.390	0
38	93.342.047	727.014	2.292.128	0

## Lampiran 11 (lanjutan)

Hari	Posisi	Actual Loss	VaR	Indikator
	<b>KLSE</b>			
39	92.819.136	522.912	2.270.812	0
40	92.560.139	258.996	2.254.808	0
41	91.352.568	1.207.572	2.246.372	0
42	90.456.392	896.175	2.213.279	0
43	89.201.445	1.254.947	2.190.948	0
44	89.517.014	0	2.159.420	0
45	89.368.420	148.594	2.163.629	0
46	90.542.598	0	2.158.278	0
47	89.967.797	574.801	2.185.420	0
48	89.278.770	689.027	2.170.983	0
49	89.040.766	238.004	2.150.774	0
50	89.274.809	0	2.149.696	0
51	91.745.592	0	2.151.899	0
52	90.612.331	1.133.261	2.208.323	0
53	90.478.021	134.310	2.177.458	0
54	90.451.342	26.679	2.170.845	0
55	89.232.773	1.218.569	2.170.100	0
56	89.680.919	0	2.139.251	0
57	89.063.662	617.257	2.146.723	0
58	88.574.724	488.937	2.130.376	0
59	86.753.291	1.821.434	2.115.702	0
60	86.999.600	0	2.070.336	0
61	85.960.116	1.039.484	2.077.434	0
62	84.340.115	1.620.001	2.064.921	0
63	83.555.028	785.087	2.025.556	0
64	82.605.801	949.228	2.003.666	0
65	85.393.769	0	1.978.622	0
66	85.636.526	0	2.042.324	0
67	85.433.146	203.381	2.050.241	0
68	85.617.769	0	2.042.838	0
69	85.312.518	305.251	2.060.615	0
70	84.961.302	351.216	2.062.178	0
71	84.893.841	67.461	2.070.746	0
72	84.807.214	86.626	2.300.107	0
73	84.642.215	164.999	2.294.302	0
74	82.972.470	1.669.745	2.291.784	0
75	83.004.925	0	2.257.264	0
76	80.723.161	2.281.764	2.257.768	1
77	80.614.924	108.237	2.200.137	0

## Lampiran 11 (lanjutan)

<b>Hari</b>	<b>Posisi</b>	<b>Actual Loss</b>	<b>VaR</b>	<b>Indikator</b>
	<b>KLSE</b>			
78	77.659.263	2.955.661	2.194.946	1
79	79.039.619	0	2.111.838	0
80	80.301.430	0	2.146.179	0
81	78.945.116	1.356.314	2.177.505	0
82	76.423.589	2.521.527	2.137.567	1
83	75.185.041	1.238.548	2.072.228	0
84	75.539.684	0	2.038.914	0
85	76.254.719	0	2.046.436	0
86	75.093.159	1.161.559	2.062.742	0
87	74.009.149	1.084.010	2.028.866	0
88	71.285.129	2.724.021	1.998.465	1
89	69.037.093	2.248.035	1.922.489	1
90	68.785.347	251.747	1.860.240	0
91	70.759.571	0	1.851.226	0
92	71.587.843	0	1.904.358	0
93	74.490.802	0	1.925.904	0
94	75.005.037	0	2.002.852	0
95	75.800.893	0	2.020.928	0
96	74.186.204	1.614.689	2.042.372	0
97	74.020.416	165.789	1.996.972	0
98	74.867.577	0	1.989.747	0
99	74.065.137	802.440	2.010.406	0
100	73.711.603	353.534	1.991.375	0
101	72.899.945	811.659	1.984.020	0
102	72.987.644	0	1.967.864	0
103	73.186.885	0	1.993.676	0
104	73.106.539	80.346	2.003.974	0
105	72.654.796	451.743	2.002.276	0
106	71.626.840	1.027.956	1.987.661	0
107	71.755.853	0	1.976.775	0
108	70.798.410	957.442	1.977.560	0
109	71.193.760	0	1.948.884	0
110	70.877.721	316.039	1.962.020	0
111	71.995.300	0	1.950.676	0
112	71.676.816	318.483	1.981.845	0
113	70.196.047	1.480.770	1.970.574	0
114	69.973.962	222.085	1.935.382	0
115	70.121.078	0	1.926.612	0
116	70.065.623	55.455	1.928.542	0

## Lampiran 11 (lanjutan)

Hari	Posisi	Actual Loss	VaR	Indikator
	<b>KLSE</b>			
117	69.352.129	713.494	1.924.388	0
118	69.094.356	257.773	1.903.021	0
119	70.688.254	0	1.895.096	0
120	71.184.418	0	1.936.212	0
121	70.485.430	698.988	1.950.671	0
122	70.004.112	481.318	1.931.396	0
123	70.689.646	0	1.915.688	0
124	71.323.564	0	1.932.079	0
125	72.796.737	0	1.947.770	0
126	72.456.971	339.766	1.985.663	0
127	72.211.007	245.964	1.974.966	0
128	72.023.090	187.917	1.966.351	0
129	71.895.658	127.432	1.959.450	0
130	71.707.741	187.917	1.953.888	0
131	72.878.720	0	1.946.431	0
132	72.474.201	404.519	1.977.113	0
133	73.915.458	0	1.964.921	0
134	76.057.708	0	2.001.431	0
135	76.187.298	0	2.061.422	0
136	76.631.281	0	2.067.156	0
137	75.205.456	1.425.825	2.077.177	0
138	75.908.358	0	2.035.945	0
139	76.279.118	0	2.052.343	0
140	75.459.552	819.566	2.060.951	0
141	75.439.728	19.823	2.037.138	0
142	74.105.790	1.333.939	2.036.013	0
143	74.024.823	80.966	1.998.518	0
144	73.511.919	512.904	1.994.256	0
145	72.689.046	822.874	1.978.211	0
146	72.112.099	576.946	1.953.640	0
147	72.573.801	0	1.936.011	0
148	72.049.292	524.509	1.945.985	0
149	72.619.992	0	1.929.523	0
150	72.910.837	0	1.945.307	0
151	73.017.257	0	1.951.560	0
152	72.621.566	395.691	1.957.265	0
153	72.384.245	237.322	1.944.461	0
154	72.643.827	0	1.936.833	0
155	74.008.758	0	1.942.289	0

## Lampiran 11 (lanjutan)

Hari	Posisi	Actual Loss	VaR	Indikator
	<b>KLSE</b>			
156	74.574.466	0	1.976.439	0
157	74.040.188	534.278	1.989.119	0
158	73.836.044	204.144	1.972.476	0
159	75.083.288	0	1.966.235	0
160	74.864.281	219.007	2.000.646	0
161	74.146.197	718.084	1.995.521	0
162	73.873.381	272.815	1.974.066	0
163	74.232.290	0	1.964.866	0
164	73.412.503	819.787	1.974.949	0
165	73.257.215	155.288	1.951.013	0
166	73.770.293	0	1.944.600	0
167	73.971.345	0	1.955.930	0
168	73.715.948	255.397	1.958.943	0
169	73.488.696	227.252	1.950.305	0
170	72.315.167	1.173.529	1.942.426	0
171	71.667.131	648.036	1.909.689	0
172	71.517.659	149.473	1.890.618	0
173	71.707.969	0	1.884.883	0
174	70.793.062	914.907	1.887.752	0
175	70.547.647	245.415	1.861.573	0
176	70.143.954	403.693	1.852.943	0
177	69.148.741	995.214	1.844.141	0
178	69.564.825	0	1.816.887	0
179	69.352.537	212.288	1.825.697	0
180	69.434.140	0	1.819.932	0
181	69.934.611	0	1.820.166	0
182	70.281.788	0	1.831.158	0
183	70.663.425	0	1.839.306	0
184	72.413.076	0	1.847.196	0
185	72.381.740	31.337	1.892.027	0
186	72.455.080	0	1.892.732	0
187	73.002.106	0	1.892.478	0
188	72.998.808	3.298	1.905.604	0
189	71.660.076	1.338.732	1.903.664	0
190	71.924.190	0	1.866.640	0
191	72.876.517	0	1.871.390	0
192	74.578.302	0	1.894.149	0
193	74.737.988	0	1.937.854	0
194	76.106.414	0	1.940.199	0

## Lampiran 11 (lanjutan)

Hari	Posisi	Actual Loss	VaR	Indikator
	<b>KLSE</b>			
195	75.781.944	324.471	1.973.517	0
196	74.789.311	992.633	1.964.874	0
197	75.610.225	0	1.936.962	0
198	77.520.844	0	1.957.095	0
199	77.523.315	0	2.006.549	0
200	78.529.637	0	2.005.476	0
201	78.773.810	0	2.031.367	0
202	79.151.670	0	2.035.431	0
203	79.471.326	0	2.043.191	0
204	79.734.375	0	2.050.066	0
205	79.588.502	145.873	2.062.665	0
206	79.751.366	0	2.062.631	0
207	80.575.419	0	2.065.943	0
208	81.723.176	0	2.113.912	0
209	80.682.566	1.040.609	2.144.413	0
210	79.486.707	1.195.860	2.134.543	0
211	79.631.440	0	2.112.839	0
212	81.524.921	0	2.114.911	0
213	81.524.921	0	2.163.650	0
214	83.042.883	0	2.167.079	0
215	83.002.560	40.323	2.205.464	0
216	84.234.863	0	2.204.879	0
217	84.194.544	40.319	2.235.207	0
218	84.466.398	0	2.249.400	0
219	84.361.035	105.363	2.254.312	0
220	84.156.775	204.260	2.249.368	0
221	84.141.967	14.809	2.251.072	0
222	83.244.644	897.322	2.252.323	0
223	83.427.058	0	2.225.981	0
224	83.245.893	181.165	2.233.789	0
225	84.184.899	0	2.226.631	0
226	85.744.678	0	2.250.471	0
227	85.161.269	583.409	2.290.812	0
228	85.955.254	0	2.272.834	0
229	86.600.823	0	2.291.987	0
230	86.476.565	124.258	2.307.303	0
231	86.151.141	325.424	2.302.062	0
232	85.619.943	531.198	2.291.099	0
233	85.855.615	0	2.274.654	0

## Lampiran 11 (lanjutan)

Hari	Posisi	Actual Loss	VaR	Indikator
	<b>KLSE</b>			
234	87.298.052	0	2.281.646	0
235	87.447.559	0	2.318.045	0
236	86.769.111	678.448	2.320.737	0
237	87.470.844	0	2.300.711	0
238	88.413.646	0	2.317.187	0
239	88.195.528	218.117	2.339.988	0
240	88.108.346	87.182	2.332.253	0
241	89.022.657	0	2.327.748	0
242	89.513.692	0	2.350.262	0
243	89.611.458	0	2.361.801	0
244	89.695.264	0	2.362.138	0
245	88.282.672	1.412.592	2.362.271	0
246	88.017.620	265.052	2.323.387	0
247	86.651.759	1.365.862	2.314.818	0
248	87.069.050	0	2.278.117	0
249	85.950.003	1.119.047	2.286.933	0
250	85.827.478	122.524	2.255.319	0
251	86.919.152	0	2.250.672	0
252	88.245.005	0	2.277.237	0
253	88.381.279	0	2.310.927	0
254	88.387.030	0	2.312.332	0
255	88.337.722	49.308	2.310.376	0

Sumber: Data *Yahoo Finance*, telah diolah kembali

*Failure* 5  
*Alpha* 1%  
*LR* 1,857299811  
*Critical value* 6,634896712

Lampiran 12 Contoh *Backtesting* VaR dengan EWMA

Hari	Posisi	Actual Loss	VaR	Indikator
	<b>CAC-40</b>			
	100.000.000			
1	97.865.932	2.134.068	8.645.531	0
2	96.852.332	1.013.600	8.461.651	0
3	97.917.436	0	8.377.348	0
4	96.143.499	1.773.937	8.467.961	0
5	97.854.307	0	8.315.402	0
6	96.333.244	1.521.063	8.463.157	0
7	97.765.645	0	8.333.846	0
8	95.299.478	2.466.166	8.458.327	0
9	92.304.439	2.995.040	8.246.706	0
10	93.242.589	0	7.986.702	0
11	91.392.607	1.849.982	8.068.329	0
12	92.539.838	0	7.907.849	0
13	95.060.123	0	8.006.682	0
14	96.696.356	0	8.227.460	0
15	97.319.143	0	8.369.917	0
16	97.321.842	0	8.423.529	0
17	99.137.321	0	8.426.916	0
18	97.761.765	1.375.557	8.584.114	0
19	98.415.890	0	8.466.748	0
20	97.223.117	1.192.773	8.522.000	0
21	97.134.047	89.070	8.420.746	0
22	98.917.497	0	8.411.880	0
23	98.733.227	184.270	8.565.991	0
24	96.963.699	1.769.528	8.548.331	0
25	96.203.100	760.599	8.395.730	0
26	98.550.192	0	8.329.578	0
27	99.932.979	0	8.535.246	0
28	100.137.204	0	8.654.760	0
29	100.907.487	0	8.672.949	0
30	101.949.833	0	8.741.901	0
31	101.499.346	450.486	8.830.427	0
32	98.870.885	2.628.462	8.790.681	0
33	99.272.918	0	8.562.771	0
34	100.004.727	0	8.596.097	0
35	99.897.336	107.391	8.658.743	0
36	97.256.879	2.640.458	8.648.889	0
37	97.996.595	0	8.422.528	0
38	96.611.811	1.384.784	8.486.865	0



## Lampiran 12 (lanjutan)

Hari	Posisi	Actual Loss	VaR	Indikator
	<b>CAC-40</b>			
39	98.739.229	0	8.365.981	0
40	97.733.822	1.005.407	8.550.546	0
41	98.017.914	0	8.463.438	0
42	98.119.501	0	8.486.304	0
43	100.083.385	0	8.494.495	0
44	100.555.823	0	8.665.177	0
45	100.320.680	235.143	8.705.143	0
46	101.811.179	0	8.683.581	0
47	99.727.796	2.083.383	8.812.772	0
48	96.465.521	3.262.276	8.630.823	0
49	94.028.978	2.436.543	8.349.155	0
50	97.190.876	0	8.139.214	0
51	96.136.274	1.054.602	8.410.884	0
52	95.919.275	216.999	8.319.338	0
53	95.141.595	777.680	8.299.062	0
54	96.995.100	0	8.231.382	0
55	93.259.559	3.735.540	8.392.247	0
56	91.416.757	1.842.803	8.070.138	0
57	89.443.324	1.973.433	7.910.838	0
58	88.493.580	949.744	7.740.646	0
59	96.341.068	0	7.658.916	0
60	94.056.287	2.284.781	8.337.137	0
61	92.173.823	1.882.464	8.139.045	0
62	91.609.234	564.589	7.976.472	0
63	94.075.403	0	7.926.691	0
64	92.652.952	1.422.451	8.137.501	0
65	87.859.918	4.793.034	8.014.168	0
66	89.589.979	0	7.599.880	0
67	90.087.195	0	7.748.760	0
68	88.036.336	2.050.860	7.791.922	0
69	90.607.774	0	7.612.361	0
70	82.025.825	8.581.949	7.834.978	1
71	82.471.866	0	7.093.191	0
72	77.100.537	5.371.329	7.129.924	0
73	75.896.384	1.204.153	6.667.836	0
74	69.788.301	6.108.083	6.564.133	0
75	77.182.085	0	6.036.633	0
76	79.273.885	0	6.675.251	0
77	73.674.562	5.599.323	6.855.337	0

## Lampiran 12 (lanjutan)

Hari	Posisi	Actual Loss	VaR	Indikator
	<b>CAC-40</b>			
78	69.180.664	4.493.899	6.371.718	0
79	72.345.863	0	5.983.714	0
80	74.877.533	0	6.258.428	0
81	75.459.131	0	6.476.404	0
82	71.509.692	3.949.439	6.527.517	0
83	71.784.303	0	6.186.402	0
84	69.199.875	2.584.428	6.211.041	0
85	66.404.594	2.795.281	5.988.670	0
86	67.426.526	0	5.746.733	0
87	73.382.146	0	5.834.484	0
88	73.495.284	0	6.348.639	0
89	75.184.871	0	6.358.781	0
90	76.061.586	0	6.504.329	0
91	79.499.507	0	6.581.052	0
92	77.911.900	1.587.607	6.877.043	0
93	72.774.903	5.136.997	6.740.781	0
94	74.512.955	0	6.296.228	0
95	75.295.604	0	6.446.350	0
96	71.567.786	3.727.817	6.512.288	0
97	69.335.731	2.232.055	6.190.110	0
98	70.092.700	0	5.997.146	0
99	70.562.983	0	6.063.609	0
100	68.176.901	2.386.081	6.103.806	0
101	68.930.544	0	5.899.645	0
102	66.098.493	2.832.051	5.964.838	0
103	63.757.035	2.341.458	5.718.630	0
104	61.599.718	2.157.317	5.516.033	0
105	67.523.718	0	5.329.999	0
106	68.316.236	0	5.841.590	0
107	67.465.727	850.509	5.910.403	0
108	69.158.491	0	5.837.147	0
109	69.419.492	0	5.981.079	0
110	65.429.277	3.990.215	6.005.844	0
111	66.950.734	0	5.659.681	0
112	67.242.076	0	5.795.180	0
113	67.125.398	116.678	5.821.021	0
114	63.344.128	3.781.270	5.811.583	0
115	68.618.901	0	5.484.391	0
116	69.674.003	0	5.942.748	0

## Lampiran 12 (lanjutan)

Hari	Posisi	Actual Loss	VaR	Indikator
	<b>CAC-40</b>			
117	70.147.966	0	6.033.682	0
118	69.847.744	300.221	6.074.966	0
119	67.865.010	1.982.734	6.049.271	0
120	67.272.392	592.619	5.878.129	0
121	68.651.889	0	5.826.258	0
122	68.445.941	205.948	5.945.581	0
123	68.281.698	164.243	5.928.755	0
124	68.107.295	174.402	5.914.484	0
125	66.515.092	1.592.204	5.899.983	0
126	66.028.918	486.173	5.762.102	0
127	65.770.919	257.999	5.719.898	0
128	66.076.457	0	5.697.325	0
129	67.875.498	0	5.723.586	0
130	67.893.218	0	5.878.399	0
131	70.616.895	0	5.879.707	0
132	70.832.232	0	6.115.626	0
133	71.593.387	0	6.134.248	0
134	70.528.754	1.064.633	6.201.070	0
135	70.068.599	460.154	6.108.615	0
136	69.543.280	525.319	6.070.328	0
137	68.408.994	1.134.286	6.024.529	0
138	67.384.965	1.024.029	5.926.446	0
139	64.238.485	3.146.481	5.837.319	0
140	63.046.276	1.192.209	5.564.242	0
141	63.483.948	0	5.460.760	0
142	62.911.933	572.015	5.497.579	0
143	61.541.743	1.370.190	5.448.728	0
144	61.125.683	416.060	5.330.352	0
145	60.364.670	761.013	5.293.613	0
146	59.932.313	432.357	5.227.324	0
147	62.126.234	0	5.188.776	0
148	62.108.574	17.661	5.378.865	0
149	64.611.159	0	5.377.815	0
150	63.204.168	1.406.991	5.593.525	0
151	62.447.231	756.938	5.471.362	0
152	61.519.174	928.057	5.406.854	0
153	62.608.402	0	5.325.829	0
154	64.400.475	0	5.420.840	0
155	64.343.792	56.682	5.576.265	0

## Lampiran 12 (lanjutan)

Hari	Posisi	Actual Loss	VaR	Indikator
	<b>CAC-40</b>			
156	65.518.612	0	5.571.749	0
157	65.771.571	0	5.672.760	0
158	63.332.592	2.438.978	5.694.566	0
159	63.478.556	0	5.483.238	0
160	62.135.639	1.342.917	5.496.728	0
161	62.834.310	0	5.380.806	0
162	62.082.829	751.480	5.441.461	0
163	60.232.369	1.850.460	5.376.112	0
164	60.208.063	24.305	5.216.091	0
165	60.177.261	30.802	5.214.005	0
166	57.564.566	2.612.695	5.212.214	0
167	57.087.942	476.623	4.985.518	0
168	56.671.642	416.300	4.944.418	0
169	56.438.243	233.399	4.907.994	0
170	57.432.256	0	4.887.468	0
171	56.539.017	893.239	4.972.864	0
172	53.948.697	2.590.320	4.895.683	0
173	53.383.366	565.331	4.671.037	0
174	55.856.482	0	4.622.573	0
175	53.597.555	2.258.927	4.836.858	0
176	52.858.698	738.857	4.641.542	0
177	52.541.571	317.128	4.577.208	0
178	55.469.792	0	4.549.911	0
179	55.688.434	0	4.803.681	0
180	56.104.404	0	4.822.689	0
181	56.340.880	0	4.858.484	0
182	58.104.440	0	4.879.068	0
183	57.594.776	509.664	5.031.499	0
184	57.450.154	144.622	4.987.405	0
185	57.795.645	0	4.974.554	0
186	58.089.392	0	5.004.425	0
187	59.699.169	0	5.029.756	0
188	59.799.362	0	5.168.898	0
189	60.194.581	0	5.177.112	0
190	60.165.865	28.716	5.211.398	0
191	59.085.877	1.079.988	5.208.560	0
192	56.507.775	2.578.102	5.114.679	0
193	58.307.447	0	4.891.793	0
194	58.973.860	0	5.047.592	0

## Lampiran 12 (lanjutan)

Hari	Posisi	Actual Loss	VaR	Indikator
	<b>CAC-40</b>			
195	62.057.921	0	5.105.152	0
196	61.362.959	694.963	5.372.373	0
197	60.758.754	604.205	5.310.920	0
198	60.187.007	571.747	5.257.852	0
199	60.574.587	0	5.208.990	0
200	61.666.250	0	5.242.668	0
201	62.203.810	0	5.336.715	0
202	61.902.868	300.942	5.382.997	0
203	62.980.661	0	5.356.304	0
204	64.085.754	0	5.449.812	0
205	61.493.787	2.591.966	5.546.404	0
206	61.587.735	0	5.321.867	0
207	62.641.055	0	5.330.759	0
208	62.295.970	345.085	5.421.736	0
209	64.217.149	0	5.391.897	0
210	64.208.456	8.693	5.557.655	0
211	63.135.551	1.072.905	5.556.371	0
212	64.485.124	0	5.463.183	0
213	65.366.816	0	5.580.701	0
214	66.963.207	0	5.656.815	0
215	66.694.441	268.766	5.794.603	0
216	67.893.608	0	5.771.265	0
217	67.228.903	664.705	5.874.312	0
218	68.479.884	0	5.816.629	0
219	67.145.575	1.334.309	5.924.581	0
220	66.781.442	364.133	5.808.468	0
221	65.145.298	1.636.143	5.778.092	0
222	65.215.305	0	5.636.720	0
223	65.478.421	0	5.643.323	0
224	67.037.047	0	5.665.276	0
225	67.645.082	0	5.801.260	0
226	68.229.367	0	5.854.678	0
227	66.430.399	1.798.968	5.904.329	0
228	66.648.076	0	5.748.044	0
229	66.816.961	0	5.767.258	0
230	67.513.867	0	5.782.380	0
231	68.023.338	0	5.842.461	0
232	67.376.969	646.368	5.887.149	0
233	67.664.344	0	5.830.479	0

## Lampiran 12 (lanjutan)

Hari	Posisi	Actual Loss	VaR	Indikator
	<b>CAC-40</b>			
234	69.734.745	0	5.855.287	0
235	69.704.819	29.927	6.034.611	0
236	68.279.131	1.425.688	6.033.073	0
237	68.328.213	0	5.910.098	0
238	68.883.383	0	5.914.979	0
239	67.856.874	1.026.508	5.962.635	0
240	68.002.553	0	5.874.448	0
241	68.383.911	0	5.886.546	0
242	68.788.445	0	5.920.194	0
243	68.606.691	181.754	5.955.338	0
244	66.372.750	2.233.941	5.939.497	0
245	66.256.584	116.166	5.745.950	0
246	65.158.846	1.097.738	5.735.197	0
247	65.833.899	0	5.640.241	0
248	66.392.358	0	5.699.161	0
249	64.340.731	2.051.628	5.747.443	0
250	64.208.132	132.598	5.569.527	0
251	65.592.696	0	5.558.234	0
252	65.145.067	447.629	5.677.868	0
253	64.454.150	690.917	5.638.812	0
254	65.757.872	0	5.579.129	0
255	64.652.420	1.105.452	5.691.637	0

Sumber: Data *Yahoo Finance* , telah diolah kembali

*Failure* 1  
*Alpha* 1%  
*LR* 1,2373106  
*Critical value* 6,634896712

Lampiran 13 Contoh *Backtesting* VaR dengan ARCH/GARCH

Hari	Posisi	<i>Actual Loss</i>	VaR	Indikator
	<b>CAC-40</b>			
	100.000.000			
1	97.865.932	2.134.068	2.784.664	0
2	96.852.332	1.013.600	3.034.335	0
3	97.917.436	0	2.897.561	0
4	96.143.499	1.773.937	2.866.240	0
5	97.854.307	0	2.944.129	0
6	96.333.244	1.521.063	3.064.884	0
7	97.765.645	0	2.966.242	0
8	95.299.478	2.466.166	3.020.295	0
9	92.304.439	2.995.040	3.284.011	0
10	93.242.589	0	3.858.542	0
11	91.392.607	1.849.982	3.451.502	0
12	92.539.838	0	3.468.003	0
13	95.060.123	0	3.342.912	0
14	96.696.356	0	3.962.477	0
15	97.319.143	0	3.966.490	0
16	97.321.842	0	3.730.149	0
17	99.137.321	0	3.504.859	0
18	97.761.765	1.375.557	3.732.394	0
19	98.415.890	0	3.496.941	0
20	97.223.117	1.192.773	3.329.690	0
21	97.134.047	89.070	3.226.411	0
22	98.917.497	0	3.025.293	0
23	98.733.227	184.270	3.312.414	0
24	96.963.699	1.769.528	3.026.086	0
25	96.203.100	760.599	3.157.617	0
26	98.550.192	0	2.972.513	0
27	99.932.979	0	3.480.760	0
28	100.137.204	0	3.484.048	0
29	100.907.487	0	3.235.063	0
30	101.949.833	0	3.170.267	0
31	101.499.346	450.486	3.180.493	0
32	98.870.885	2.628.462	2.969.912	0
33	99.272.918	0	3.472.650	0
34	100.004.727	0	3.106.604	0
35	99.897.336	107.391	3.054.271	0
36	97.256.879	2.640.458	2.877.205	0
37	97.996.595	0	3.392.993	0
38	96.611.811	1.384.784	3.067.732	0

## Lampiran 13 (lanjutan)

Hari	Posisi	Actual Loss	VaR	Indikator
	<b>CAC-40</b>			
39	98.739.229	0	3.038.873	0
40	97.733.822	1.005.407	3.373.025	0
41	98.017.914	0	3.084.756	0
42	98.119.501	0	2.929.017	0
43	100.083.385	0	2.792.910	0
44	100.555.823	0	3.216.738	0
45	100.320.680	235.143	2.995.844	0
46	101.811.179	0	2.825.997	0
47	99.727.796	2.083.383	3.022.423	0
48	96.465.521	3.262.276	3.122.728	1
49	94.028.978	2.436.543	3.905.724	0
50	97.190.876	0	3.973.998	0
51	96.136.274	1.054.602	4.465.413	0
52	95.919.275	216.999	3.974.471	0
53	95.141.595	777.680	3.738.124	0
54	96.995.100	0	3.552.893	0
55	93.259.559	3.735.540	3.742.279	0
56	91.416.757	1.842.803	4.308.608	0
57	89.443.324	1.973.433	4.117.363	0
58	88.493.580	949.744	4.064.089	0
59	96.341.068	0	3.789.676	0
60	94.056.287	2.284.781	8.034.434	0
61	92.173.823	1.882.464	6.456.445	0
62	91.609.234	564.589	6.146.501	0
63	94.075.403	0	5.689.805	0
64	92.652.952	1.422.451	5.861.225	0
65	87.859.918	4.793.034	5.376.621	0
66	89.589.979	0	6.131.147	0
67	90.087.195	0	5.581.814	0
68	88.036.336	2.050.860	5.273.143	0
69	90.607.774	0	5.076.350	0
70	82.025.825	8.581.949	5.246.852	1
71	82.471.866	0	7.560.134	0
72	77.100.537	5.371.329	6.315.857	0
73	75.896.384	1.204.153	6.878.676	0
74	69.788.301	6.108.083	6.134.999	0
75	77.182.085	0	7.060.174	0
76	79.273.885	0	9.201.111	0
77	73.674.562	5.599.323	8.572.869	0



## Lampiran 13 (lanjutan)

Hari	Posisi	Actual Loss	VaR	Indikator
	<b>CAC-40</b>			
78	69.180.664	4.493.899	8.405.836	0
79	72.345.863	0	8.114.747	0
80	74.877.533	0	7.991.242	0
81	75.459.131	0	8.040.293	0
82	71.509.692	3.949.439	7.498.887	0
83	71.784.303	0	7.293.121	0
84	69.199.875	2.584.428	6.660.542	0
85	66.404.594	2.795.281	6.336.672	0
86	67.426.526	0	6.100.915	0
87	73.382.146	0	5.686.651	0
88	73.495.284	0	8.002.288	0
89	75.184.871	0	6.940.894	0
90	76.061.586	0	6.797.941	0
91	79.499.507	0	6.457.859	0
92	77.911.900	1.587.607	7.026.933	0
93	72.774.903	5.136.997	6.308.421	0
94	74.512.955	0	6.852.268	0
95	75.295.604	0	6.270.030	0
96	71.567.786	3.727.817	5.969.898	0
97	69.335.731	2.232.055	6.008.073	0
98	70.092.700	0	5.652.491	0
99	70.562.983	0	5.254.404	0
100	68.176.901	2.386.081	4.975.842	0
101	68.930.544	0	4.859.396	0
102	66.098.493	2.832.051	4.521.046	0
103	63.757.035	2.341.458	4.594.725	0
104	61.599.718	2.157.317	4.520.092	0
105	67.523.718	0	4.387.166	0
106	68.316.236	0	6.801.468	0
107	67.465.727	850.509	5.951.705	0
108	69.158.491	0	5.490.729	0
109	69.419.492	0	5.443.906	0
110	65.429.277	3.990.215	5.082.149	0
111	66.950.734	0	5.432.468	0
112	67.242.076	0	5.026.209	0
113	67.125.398	116.678	4.721.670	0
114	63.344.128	3.781.270	4.412.792	0
115	68.618.901	0	4.889.353	0
116	69.674.003	0	6.423.540	0

## Lampiran 13 (lanjutan)

Hari	Posisi	Actual Loss	VaR	Indikator
	<b>CAC-40</b>			
117	70.147.966	0	5.815.389	0
118	69.847.744	300.221	5.452.427	0
119	67.865.010	1.982.734	5.080.986	0
120	67.272.392	592.619	4.892.373	0
121	68.651.889	0	4.512.558	0
122	68.445.941	205.948	4.455.073	0
123	68.281.698	164.243	4.121.699	0
124	68.107.295	174.402	3.860.957	0
125	66.515.092	1.592.204	3.618.204	0
126	66.028.918	486.173	3.555.912	0
127	65.770.919	257.999	3.289.071	0
128	66.076.457	0	3.077.630	0
129	67.875.498	0	2.920.144	0
130	67.893.218	0	3.244.829	0
131	70.616.895	0	2.942.925	0
132	70.832.232	0	3.745.574	0
133	71.593.387	0	3.329.817	0
134	70.528.754	1.064.633	3.233.293	0
135	70.068.599	460.154	3.073.949	0
136	69.543.280	525.319	2.884.101	0
137	68.408.994	1.134.286	2.726.216	0
138	67.384.965	1.024.029	2.691.612	0
139	64.238.485	3.146.481	2.617.391	1
140	63.046.276	1.192.209	3.441.856	0
141	63.483.948	0	3.131.255	0
142	62.911.933	572.015	2.907.545	0
143	61.541.743	1.370.190	2.737.924	0
144	61.125.683	416.060	2.759.627	0
145	60.364.670	761.013	2.549.943	0
146	59.932.313	432.357	2.446.956	0
147	62.126.234	0	2.302.814	0
148	62.108.574	17.661	2.927.537	0
149	64.611.159	0	2.579.332	0
150	63.204.168	1.406.991	3.347.505	0
151	62.447.231	756.938	2.989.301	0
152	61.519.174	928.057	2.834.922	0
153	62.608.402	0	2.722.815	0
154	64.400.475	0	2.716.522	0
155	64.343.792	56.682	3.084.486	0

## Lampiran 13 (lanjutan)

Hari	Posisi	Actual Loss	VaR	Indikator
	<b>CAC-40</b>			
156	65.518.612	0	2.766.198	0
157	65.771.571	0	2.843.881	0
158	63.332.592	2.438.978	2.659.591	0
159	63.478.556	0	3.065.587	0
160	62.135.639	1.342.917	2.711.207	0
161	62.834.310	0	2.711.569	0
162	62.082.829	751.480	2.570.397	0
163	60.232.369	1.850.460	2.437.964	0
164	60.208.063	24.305	2.693.444	0
165	60.177.261	30.802	2.408.913	0
166	57.564.566	2.612.695	2.271.149	1
167	57.087.942	476.623	2.900.836	0
168	56.671.642	416.300	2.553.106	0
169	56.438.243	233.399	2.393.662	0
170	57.432.256	0	2.249.016	0
171	56.539.017	893.239	2.318.290	0
172	53.948.697	2.590.320	2.193.515	1
173	53.383.366	565.331	2.871.537	0
174	55.856.482	0	2.522.097	0
175	53.597.555	2.258.927	3.246.365	0
176	52.858.698	738.857	3.122.391	0
177	52.541.571	317.128	2.885.114	0
178	55.469.792	0	2.679.856	0
179	55.688.434	0	3.691.662	0
180	56.104.404	0	3.236.485	0
181	56.340.880	0	3.075.231	0
182	58.104.440	0	2.905.637	0
183	57.594.776	509.664	3.219.050	0
184	57.450.154	144.622	2.890.645	0
185	57.795.645	0	2.712.651	0
186	58.089.392	0	2.585.558	0
187	59.699.169	0	2.462.049	0
188	59.799.362	0	2.778.667	0
189	60.194.581	0	2.522.057	0
190	60.165.865	28.716	2.418.258	0
191	59.085.877	1.079.988	2.273.382	0
192	56.507.775	2.578.102	2.275.805	1
193	58.307.447	0	2.918.195	0
194	58.973.860	0	2.906.406	0

## Lampiran 13 (lanjutan)

Hari	Posisi	<i>Actual Loss</i>	VaR	Indikator
	<b>CAC-40</b>			
195	62.057.921	0	2.779.795	0
196	61.362.959	694.963	3.900.436	0
197	60.758.754	604.205	3.316.984	0
198	60.187.007	571.747	3.128.660	0
199	60.574.587	0	2.942.336	0
200	61.666.250	0	2.789.603	0
201	62.203.810	0	2.847.799	0
202	61.902.868	300.942	2.716.839	0
203	62.980.661	0	2.534.302	0
204	64.085.754	0	2.597.544	0
205	61.493.787	2.591.966	2.669.659	0
206	61.587.735	0	3.044.736	0
207	62.641.055	0	2.681.934	0
208	62.295.970	345.085	2.733.569	0
209	64.217.149	0	2.519.022	0
210	64.208.456	8.693	2.950.374	0
211	63.135.551	1.072.905	2.646.263	0
212	64.485.124	0	2.593.483	0
213	65.366.816	0	2.682.346	0
214	66.963.207	0	2.659.069	0
215	66.694.441	268.766	2.925.023	0
216	67.893.608	0	2.632.172	0
217	67.228.903	664.705	2.729.153	0
218	68.479.884	0	2.524.925	0
219	67.145.575	1.334.309	2.631.754	0
220	66.781.442	364.133	2.554.880	0
221	65.145.298	1.636.143	2.382.451	0
222	65.215.305	0	2.560.225	0
223	65.478.421	0	2.316.644	0
224	67.037.047	0	2.216.729	0
225	67.645.082	0	2.555.081	0
226	68.229.367	0	2.423.579	0
227	66.430.399	1.798.968	2.356.544	0
228	66.648.076	0	2.549.176	0
229	66.816.961	0	2.305.218	0
230	67.513.867	0	2.197.671	0
231	68.023.338	0	2.197.911	0
232	67.376.969	646.368	2.140.114	0
233	67.664.344	0	2.044.075	0

## Lampiran 13 (lanjutan)

Hari	Posisi	Actual Loss	VaR	Indikator
	<b>CAC-40</b>			
234	69.734.745	0	1.949.449	0
235	69.704.819	29.927	2.650.778	0
236	68.279.131	1.425.688	2.317.110	0
237	68.328.213	0	2.427.130	0
238	68.883.383	0	2.220.654	0
239	67.856.874	1.026.508	2.183.432	0
240	68.002.553	0	2.160.670	0
241	68.383.911	0	2.017.739	0
242	68.788.445	0	1.965.792	0
243	68.606.691	181.754	1.918.586	0
244	66.372.750	2.233.941	1.814.355	1
245	66.256.584	116.166	2.444.510	0
246	65.158.846	1.097.738	2.124.443	0
247	65.833.899	0	2.162.790	0
248	66.392.358	0	2.079.076	0
249	64.340.731	2.051.628	2.053.687	0
250	64.208.132	132.598	2.438.451	0
251	65.592.696	0	2.161.830	0
252	65.145.067	447.629	2.406.849	0
253	64.454.150	690.917	2.180.753	0
254	65.757.872	0	2.122.548	0
255	64.652.420	1.105.452	2.296.300	0

Sumber: Data *Yahoo Finance*, telah diolah kembali

<i>Failure</i>	7
<i>Alpha</i>	1%
<i>LR</i>	5,316341341
<i>Critical value</i>	6,634896712