ANALISIS RISIKO SAHAM SYARI'AH MENGGUNAKAN METODE VaR-*TIME INVARIANT FUZZY TIME SERIES*

(Studi Kasus: Harga Penutupan Indeks Harga Saham Harian *Jakarta Islamic Index* (JII) Periode 2 Januari 2014 – 29 Juli 2016)

Skripsi

Untuk memenuhi sebagian persyaratan

mencapai derajat Sarjana S-1

Program Studi Matematika

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Assalamu'alaikum wr. wb.

Setelah membaca, meneliti, memberikan petunjuk dan mengoreksi serta mengadakan perbaikan seperlunya, maka kami selaku pembimbing berpendapat bahwa skripsi Saudara:

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sudah dapat diajukan kembali kepada Program Studi Matematika Fakultas Sains dan Teknologi UIN Sunan Kalijaga Yogyakarta sebagai salah satu syarat untuk memperoleh gelar Sarjana Strata Satu dalam bidang matematika.

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Dengan ini saya menyatakan bahwa skripsi ini tidak terdapat karya yang serupa yang diajukan untuk memperoleh gelar kesarjanaan di suatu perguruan tinggi lain, dan sepanjang pengetahuaan saya juga belum terdapat karya yang pernah ditulis atau diterbitkan orang lain, kecuali yang secara tertulis dalam naskah ini dan disebutkan dalam daftar pustaka.

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(Q.S. At-Taubah, 9 : 129)

“Lakukanlah apa yang paling mungkin untuk dilakukan,
Tuhan akan melakukan yang terbaik”
(Midorima Shintaro)

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Penulis

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ANALISIS RISIKO SAHAM SYARI'AH MENGGUNAKAN METODE VaR-*TIME INVARIANT FUZZY TIME SERIES*

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ABSTRAK

Para investor mulai melakukan investasi dengan harapan bahwa dari investasi tersebut akan diperoleh *return* (keuntungan) yang maksimal namun tetap memiliki risiko yang mampu diturunkan hingga tingkat paling rendah. Peramalan keuntungan model *time series* tidak hanya dengan metode *time series* konvensional saat ini, akan tetapi dapat diaplikasikan dengan metode *fuzzy time series. Time Invariant Fuzzy Time Series* merupakan salah satu aplikasi dari *fuzzy time series.* Alat yang sering digunakan untuk mengukur risiko terbesar adalah *Value at Risk* (VaR). *Value at Risk* (VaR) merupakan kerugian terbesar yang mungkin terjadi dalam rentang periode waktu tertentu diprediksi dengan tingkat kepercayaan tertentu.

Pada penelitian ini, VaR akan diimplementasikan pada indeks saham *Jakarta Islamic index* (JII) dengan pendekatan *Time Invariant Fuzzy Time Series.* Pada definisi *fuzzy time series* andaikan $F(t)$ disebabkan oleh $F(t-1)$ dinotasikan dengan $F(t-1) \rightarrow F(t)$ maka relasinya dinyatakan dengan

$$F(t) = F(t-1) \circ R(t, t-1)$$

dengan simbol "$\circ$" merupakan *max-min* operator komposisi, $R(t, t-1)$ disebut sebagai model order pertama dari $F(t)$. Jika $R(t_1, t_1 - 1) = R(t_2, t_2 - 1)$ untuk sembarang waktu t, maka $F(t)$ disebut *time invariant fuzzy time series*.

Pada penelitian ini data yang digunakan adalah indeks penutupan harga saham *Jakarta Islamic Index* (JII) periode 2 Januari 2014 sampai 29 Juli 2016. Perhitungan VaR-*Time Invariant Fuzzy Time Series* diperoleh bahwa jika diasumsikan dana investasi awal Rp10.000.000,00, model valid untuk meramalkan risiko 1 hari dan 5 hari ke depan, dengan besar risiko berturut-turut Rp 204.660,00 dan Rp 457.634,00.

Kata kunci: *Return, Risiko, Value at Risk* (VaR), *Fuzzy Time Series, Time Invariant Fuzzy Time Series,* VaR-*Time Invariant Fuzzy Time Series, Jakarta Islamic Index* (JII).

BAB I

PENDAHULUAN

1.1 Latar Belakang Masalah

Pada setiap investasi termasuk investasi pasar modal syari'ah, terdapat 2 (dua) hal mendasar yang selalu menyertainya, yaitu tingkat keuntungan (*return*) dan risiko yang akan dihadapi, sehingga diperlukan manajemen risiko untuk mengidentifikasi risiko agar kemungkinan kerugian yang akan dihadapi dapat diketahui (Qudratullah, 2012: 1).

Peramalan merupakan alat penting dalam pengambilan keputusan. Kualitas suatu ramalan berkaitan erat dengan informasi yang dapat diserap dari data di masa lampau. Analisis deret berkala adalah suatu metode kuantitatif untuk menentukan pola data masa lampau yang telah dikumpulkan secara teratur. Apabila anda telah menemukan pola data masa lampau, maka anda dapat menggunakan untuk mengadakan peramalan di masa yang akan datang. Langkah penting dalam memilih suatu metode runtun waktu yang tepat adalah dengan mempertimbangkan jenis pola data, sehingga metode yang paling tepat dengan pola tersebut dapat diuji (Makridakis, 1995: 9).

Dalam penyusunan peramalan tersebut banyak didasarkan atas data yang relevan pada masa lalu. Sebelum melakukan peramalan harus diketahui terlebih dahulu apa persoalan yang akan dihadapi dan kaputusan apa yang akan diambil. Peramalan yang baik mempunyai beberapa kriteria yang penting, antara lain akurasi, biaya, dan kemudahan. Dua metode yang sering

digunakan untuk meramalkan suatu data yaitu analisis regresi dan metode runtun waktu (*time series*). Analisis regresi selain dapat melakukan peramalan dapat pula digunakan untuk menentukan hubungan sebab akibat. Sedangkan metode *time series* digunakan untuk meramalkan data, yang berdasarkan data masa lalu dalam jangka waktu yang panjang. Dari kedua metode tersebut yang sering di gunakan adalah metode *time series*. Beberapa teknik didalam pemodelan *time series*, dibahas dalam metode Box-Jenkins seperti *Autoregresive* (AR), *Moving Average* (MA), *Autoregressive Moving Average* ARMA, *Autoregressive Integrated Moving Average* ARIMA, dan sebagainya. Metode *time series* ini dapat disebut sebagai metode *time series* klasik (Wendy Andrytiarandy, 2013: 1).

Selain peramalanan menggunakan metode *time series* klasik, ada banyak metode yang diajukan untuk peramalan yang berdasarkan data *time series*. Salah satu metode yang dapat digunakan dalam proses peramalan adalah metode *fuzzy time series*. *Fuzzy time series* merupakan model peramalan *time series* karena menggunakan data waktu secara berurutan. Pada dasarnya *fuzzy time series* adalah model pengaplikasian himpunan *fuzzy* yang diterapkan pada data historis yang akan digunakan (Arisandy Nasution, 2013: 26).

Model *fuzzy time series* pertama kali dipromosikan oleh Song dan Chissom yang menggunakan konsep *fuzzy logic*, untuk membangun pondasi *fuzzy time series* menggunakan *time invarian* dan model *time varian* , *fuzzy time series* adalah suatu teknik baru untuk peramalan yang dikembangkan dari konsep teori *fuzzy*. Beberapa penelitian mengenai *fuzzy time series* telah

dikembangkan diantaranya yaitu, penerimaan mahasiswa baru menggunakan metode *fuzzy time series* menggunakan *first order* dan *time variant* dengan data histori penerimaan mahasiswa baru di Universitas Alabama (Marufah Hayati, 2015: 2).

Selain *return*, pengukuran risiko merupakan hal yang sangat penting. Telah dikembangkan penghitungan nilai risiko untuk mengurangi risiko dalam berinvestasi sehingga para investor dapat mengetahui nilai risiko tersebut lebih dini. Dalam perkembangannya menghitung nilai risiko telah mengalami banyak perubahan, dan salah satu bentuk pengukuran risiko yang sering digunakan adalah *Value at Risk* (VaR). *Value at Risk* (VaR) merupakan salah satu alat statistik yang digunakan untuk mengukur kerugian maksimum dari suatu aset atau investasi selama periode tertentu dengan tingkat kepercayaan tertentu (Djohan Putra, 2004: 49).

Berdasarkan latar belakang di atas maka peneliti mengambil judul tentang **"Analisis Risiko Saham Syari'ah Menggunakan Metode VaR-*Time Invariant Fuzzy Time Series*".**

1.2 Batasan Masalah

Pembatasan masalah perlu dilakukan dengan tujuan agar pokok permasalahan yang diteliti tidak terlalu melebar dari yang sudah ditentukan. Peneliti dalam hal ini menggunakan 1 (satu) buah nilai himpunan *fuzzy* yaitu 6 himpunan *fuzzy* dengan data saham *Jakarta Islamic Index* (JII) harian yang sebelumnya diuji terlebih dahulu dengan ARIMA. Untuk analisis risiko peneliti menggunakan *Value at Risk* (VaR).

Penelitian yang dilakukan oleh Nurmalitasari (2014) menjelaskan bahwa untuk kesalahan peramalan dapat diperkecil dengan cara memperbanyak himpunan *fuzzy*. Berdasarkan penelitian sebelumnya, dapat disimpulkan bahwa untuk pengambilan himpunan *fuzzy* yang lebih banyak akan mendapatkan kesalahan yang lebih kecil, sehingga pada penelitian ini penulis menggunakan 6 himpunan *fuzzy* untuk melakukan analisis risiko.

1.3 Rumusan Masalah

Berdasarkan latar belakang yang telah diuraikan, maka masalah yang akan dikaji pada penelitian ini adalah:

1. Bagaimana langkah-langkah analisis risiko investasi dengan menggunakan metode VaR-*Time Invariant Fuzzy Time Series*?
2. Berapa besar risiko investasi pada indeks harga saham *Jakarta Islamic Index* (JII) periode 2 Januari 2014 sampai 29 Juli 2016?

1.4 Tujuan Penelitian

Berdasarkan rumusan masalah di atas, maka tujuan dari penelitian ini adalah :

1. Untuk mengetahui langkah-langkah analisis risiko pada indeks harga saham *Jakarta Islamic Index* (JII) dengan menggunakan metode VaR-*Time Invariant Fuzzy Time Series.*
2. Untuk mengetahui besar risiko investasi pada indeks harga saham *Jakarta Islamic Index* (JII) periode 2 Januari 2014 sampai 29 Juli 2016 dengan menggunakan metode VaR-*Time Invariant Fuzzy Time Series.*

1.5 Manfaat Penelitian

Manfaat penelitian ini ada dua yaitu manfaat bagi investor dan manfaat bagi peneliti, lebih jelasnya seperti di bawah ini :

1. Bagi investor

   Hasil dari penelitian ini diharapkan dapat dijadikan masukan terhadap investor dalam mengambil keputusan investasi dalam saham-saham *Jakarta Islamic Index* (JII) di pasar modal.

2. Bagi peneliti

   Menambah pengetahuan mengenai analisis risiko saham syariah menggunakan metode VaR-*Time Invariant Fuzzy Time Series.*

1.6 Tinjauan Pustaka

Tinjauan pustaka yang digunakan oleh peneliti adalah beberapa penelitian sebelumnya yang relevan dengan tema yang diambil peneliti. Pada penelitian ini peneliti menggunakan 3 (tiga) tinjauan pustaka yang relevan dengan tema yang diambil peneliti, antara lain disajikan pada tabel 1.1 kajian pustaka.

Terdapat kesamaan dan perbedaan antara 3 (tiga) penelitian sebelumnya dengan penelitian yang sekarang, baik dari segi objek yang diteliti maupun model yang digunakan. Pada penelitian yang dilakukan oleh Yunita Hernasary objek yang diteliti berbeda, model yang digunakan sama yaitu model *Time-Invariant Fuzzy Time Series*, akan tetapi digunakan untuk peramalan bukan mencari besar risiko. Pada penelitian Taufan Wahyudi objek yang diteliti sama yaitu JII, model yang digunakan ada kesamaan yaitu

VaR, digunakan untuk mencari besar risiko. Pada penelitian Muh Ferry Irawan objek yang diteliti sama yaitu JII dengan periode waktu yang diambil berbeda, model yang digunakan sama yaitu model *Time-Invariant Fuzzy Time Series*, akan tetapi digunakan untuk peramalan bukan mencari besar risiko.

Tabel 1.1 Kajian Pustaka

NO	Nama Peneliti	Judul Penelitian	Model	Objek
1	Yunita Hernasary	Metode *Time Invariant Fuzzy Time Series* Untuk Peramalan Pendaftaran Calon Mahasiswa	*Time Invariant Fuzzy Time Series*	Data Pendaftaran Calon Mahasiswa Jalur SPMB USU
2	Taufan Wahyudi	Analisis Risiko Investasi Saham Syari'ah Dengan Model VaR-TARCH	VaR-TARCH	Indeks Harga Saham JII
3	Muh Ferry Irawan	Peramalan Dengan Menggunakan Metode *Time Invariant Fuzzy Time Series*	*Time Invariant Fuzzy Time Series*	Indeks Harga Saham JII

1.7 Sistematika Penulisan

Secara garis besar gambaran mengenai sistematika penulisan analisis risiko saham syari'ah menggunakan metode VaR-*Time Invariant Fuzzy Time Series* yaitu sebagai berikut:

BAB I : PENDAHULUAN

Berisi latar belakang masalah, batasan masalah, rumusan masalah, tujuan penelitian, manfaat penelitian, tinjauan pustaka, dan sistematika penulisan.

BAB II : LANDASAN TEORI

Berisi tentang teori penunjang yang digunakan dalam analisis risiko saham syari'ah menggunakan metode VaR-*Time Invariant Fuzzy Time Series.*

BAB III : METODE PENELITIAN

Berisi tentang penjelasan mengenai proses pelaksanaan penelitian ini, mulai jenis dan sumber data, metode pengumpulan data, variabel penelitian, metodologi penelitian, metode analisis data, dan alat pengolahan data.

BAB IV : PEMBAHASAN

Berisi tentang pembahasan mengenai analisis risiko pada saham *Jakarta Islamic Index* menggunakan metode VaR-*Time Invariant Fuzzy Time Series.*

BAB V : STUDI KASUS

Berisi tentang penerapan analisis risiko saham syari'ah menggunakan metode VaR-*Time Invariant Fuzzy Time Series* pada data indeks saham *Jakarta Islamic Index* dan memberikan intepretasi terhadap hasil yang diperoleh.

BAB VI : KESIMPULAN DAN SARAN

Berisi tentang kesimpulan yang diambil dari pembahasan permasalahan dan pemecahan masalah yang ada dan saran-saran yang berkaitan dengan penelitian sejenis untuk penelitian berikutnya.

BAB VI

PENUTUP

6.1. Kesimpulan

Berdasarkan pada permasalahan yang dikemukakan dalam penelitian ini, dapat diambil kesimpulan sebagai berikut:

1. Ada beberapa langkah-langkah dalam analisis risiko investasi menggunakan VaR-*Time Invariant Fuzzy Time Series* yaitu mengumpulkan data ideks saham JII, menentukan *return*, statistik deskriptif, menguji kestasioneran data, menguji kenormalan data, menentukan model yang sesuai untuk persamaan *mean* (ARIMA), pemeriksaan diagnose model ARIMA (analisis residual), memodelkan residual kuadrat ARIMA dengan *Time Invariant Fuzzy Time Series*, menghitung nilai VaR-*Time Invariant Fuzzy Time Series* dan menguji validasi VaR-*Time Invariant Fuzzy Time Series.*
2. Berdasarkan pemeriksaan diagnose model, diperoleh model terbaik yaitu model ARIMA (0,0,(3)), model tersebut dipilih berdasarkan nilai probalitas dari parameter model kurang dari 0,05 dan memiliki nilai SIC terkecil. Persamaan model ARIMA (0,0,(3)) sebagai berikut:

$$Y_t = -0,097409\theta_{t-3}$$

3. Pengukuran besar risiko investasi dengan menggunakan VaR-*Time Invariant Fuzzy Time Series*, dengan nilai investasi awal diasumsikan

sebesar Rp 10.000.000,00 menghasilkan besar nilai risiko untuk harga saham harian JII dengan tingkat kepercayaan 95% sebagai berikut:

a. Dalam periode waktu 1 hari kedepan sebesar Rp 204.660,00
b. Dalam periode waktu 5 hari kedepan sebesar Rp 457.634,00

6.2. Saran

Berdasarkan pengalaman dan petimbangan dalam studi literature, saran-saran yang dapat disampaikan peneliti adalah:

1. Berdasarkan hasil penelitian, disarankan bagi investor yang akan berinvestasi untuk mengukur risiko harga saham dengan *Value at Risk* terlebih dahulu, sehingga meminimalisir terjadinya risiko.
2. Untuk penelitian selanjutnya dapat dilakukan dengan model lain seperti *Time Variant Fuzzy Time Series, Fuzzy Time Series Markov-Chain,* atau membandingkan dua metode dalam menentukan VaR.

Demikian saran dari penelitian semoga dapat menjadi masukan para peneliti pada bidang ststistik khususnya analisis risiko investasi dengan VaR-*Time Invariant Fuzzy Time Series*, untuk melanjutkan dan mengembangkan penelitian ini.

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LAMPIRAN 1: Data Harian Penutupan Harga Saham JII

Date	*Close*	*Return*
1/2/2014	596.15	0
1/3/2014	585.64	-0.01763
1/6/2014	579.93	-0.00975
1/7/2014	572.29	-0.01317
1/8/2014	576.41	0.007199
1/9/2014	574.28	-0.0037
1/10/2014	582.38	0.014105
1/13/2014	601.81	0.033363
1/15/2014	609.9	0.013443
1/16/2014	606.82	-0.00505
1/17/2014	603.06	-0.0062
1/20/2014	608.32	0.008722
1/21/2014	609.11	0.001299
1/22/2014	614.41	0.008701
1/23/2014	614.97	0.000911
1/24/2014	604.37	-0.01724
1/27/2014	583.88	-0.0339
1/28/2014	588.27	0.007519
1/29/2014	601.54	0.022558
1/30/2014	602.87	0.002211

2/3/2014	595.62	-0.01203
2/4/2014	587.49	-0.01365
2/5/2014	594.5	0.011932
2/6/2014	601.06	0.011034
2/7/2014	606.22	0.008585
2/10/2014	603.33	-0.00477
2/11/2014	604.7	0.002271
2/12/2014	609.08	0.007243
2/13/2014	607.22	-0.00305
2/14/2014	608.97	0.002882
2/17/2014	615.61	0.010904
2/18/2014	615.1	-0.00083
2/19/2014	621.73	0.010779
2/20/2014	622.16	0.000692
2/21/2014	626.97	0.007731
2/24/2014	621.94	-0.00802
2/25/2014	614.48	-0.01199
2/26/2014	606.03	-0.01375
2/27/2014	612.84	0.011237
2/28/2014	626.86	0.022877
3/3/2014	618.98	-0.01257
3/4/2014	620.05	0.001729

3/5/2014	628	0.012822
3/6/2014	631	0.004777
3/7/2014	631.74	0.001173
3/10/2014	632.91	0.001852
3/11/2014	635.35	0.003855
3/12/2014	633.17	-0.00343
3/13/2014	641.31	0.012856
3/14/2014	661.74	0.031857
3/17/2014	663.86	0.003204
3/18/2014	651.32	-0.01889
3/19/2014	655.45	0.006341
3/20/2014	634.17	-0.03247
3/21/2014	636.55	0.003753
3/24/2014	637.79	0.001948
3/25/2014	632.44	-0.00839
3/26/2014	636.48	0.006388
3/27/2014	635.02	-0.00229
3/28/2014	640.41	0.008488
4/1/2014	657.09	0.026046
4/2/2014	655.27	-0.00277
4/3/2014	658.53	0.004975
4/4/2014	653.27	-0.00799

4/7/2014	667.22	0.021354
4/8/2014	666.52	-0.00105
4/9/2014	666.52	0
4/10/2014	643.15	-0.03506
4/11/2014	653.28	0.015751
4/14/2014	659.71	0.009843
4/15/2014	659.78	0.000106
4/16/2014	657.86	-0.00291
4/17/2014	663.59	0.00871
4/21/2014	663.52	-0.00011
4/22/2014	664.13	0.000919
4/23/2014	664.14	1.51E-05
4/24/2014	663.18	-0.00145
4/25/2014	663.21	4.53E-05
4/28/2014	650.32	-0.01944
4/29/2014	645.25	-0.0078
4/30/2014	647.67	0.00375
5/2/2014	646.25	-0.00219
5/5/2014	648.25	0.003095
5/6/2014	647.04	-0.00187
5/7/2014	651.73	0.007248
5/8/2014	652.8	0.001642

5/9/2014	655.95	0.004825
5/12/2014	662.47	0.00994
5/13/2014	661.05	-0.00214
5/14/2014	672.6	0.017472
5/16/2014	680.63	0.011939
5/19/2014	678.08	-0.00375
5/20/2014	660.08	-0.02655
5/21/2014	664.78	0.00712
5/22/2014	672.51	0.011628
5/23/2014	672.11	-0.00059
5/26/2014	671.82	-0.00043
5/28/2014	673.96	0.003185
5/30/2014	656.83	-0.02542
6/2/2014	658.9	0.003152
6/3/2014	662.61	0.005631
6/4/2014	661.62	-0.00149
6/5/2014	663.03	0.002131
6/6/2014	666.4	0.005083
6/9/2014	658.99	-0.01112
6/10/2014	669.18	0.015463
6/11/2014	672.99	0.005694
6/12/2014	666.65	-0.00942

6/13/2014	665.27	-0.00207
6/16/2014	655.9	-0.01408
6/17/2014	661.51	0.008553
6/18/2014	658.05	-0.00523
6/19/2014	654.36	-0.00561
6/20/2014	652.97	-0.00212
6/23/2014	653.44	0.00072
6/24/2014	654.65	0.001852
6/25/2014	651.63	-0.00461
6/26/2014	656.69	0.007765
6/27/2014	651.89	-0.00731
6/30/2014	655	0.004771
7/1/2014	656.35	0.002061
7/2/2014	663.86	0.011442
7/3/2014	661.79	-0.00312
7/4/2014	663.63	0.00278
7/7/2014	679.41	0.023778
7/8/2014	683.29	0.005711
7/10/2014	692.85	0.013991
7/11/2014	679.85	-0.01876
7/14/2014	679.71	-0.00021
7/15/2014	688.2	0.012491

7/16/2014	694.49	0.00914
7/17/2014	685.93	-0.01233
7/18/2014	689.79	0.005627
7/21/2014	697.11	0.010612
7/22/2014	692.33	-0.00686
7/23/2014	692.14	-0.00027
7/24/2014	692.46	0.000462
7/25/2014	690.4	-0.00297
8/4/2014	701.23	0.015686
8/5/2014	697.15	-0.00582
8/6/2014	687.88	-0.0133
8/7/2014	690.39	0.003649
8/8/2014	686.73	-0.0053
8/11/2014	697.35	0.015465
8/12/2014	700.19	0.004073
8/13/2014	707.38	0.010269
8/14/2014	703.81	-0.00505
8/15/2014	701.44	-0.00337
8/18/2014	702.47	0.001468
8/19/2014	701.37	-0.00157
8/20/2014	706.22	0.006915
8/21/2014	707.44	0.001728

8/22/2014	704.21	-0.00457
8/25/2014	701.09	-0.00443
8/26/2014	696	-0.00726
8/27/2014	698.91	0.004181
8/28/2014	701.52	0.003734
8/29/2014	691.13	-0.01481
9/1/2014	699.5	0.012111
9/2/2014	703.05	0.005075
9/3/2014	707.22	0.005931
9/4/2014	702.23	-0.00706
9/5/2014	702.85	0.000883
9/8/2014	707.98	0.007299
9/9/2014	698.21	-0.0138
9/10/2014	688.65	-0.01369
9/11/2014	683.32	-0.00774
9/12/2014	688.68	0.007844
9/15/2014	691.6	0.00424
9/16/2014	691	-0.00087
9/17/2014	699.09	0.011708
9/18/2014	702.72	0.005192
9/19/2014	704.71	0.002832
9/22/2014	702.42	-0.00325

9/23/2014	696.19	-0.00887
9/24/2014	692.53	-0.00526
9/25/2014	695	0.003567
9/26/2014	687.63	-0.0106
9/29/2014	689.48	0.00269
9/30/2014	687.62	-0.0027
10/1/2014	682.39	-0.00761
10/2/2014	661.7	-0.03032
10/3/2014	658.99	-0.0041
10/6/2014	665.12	0.009302
10/7/2014	671.01	0.008856
10/8/2014	659.35	-0.01738
10/9/2014	662.82	0.005263
10/10/2014	655.99	-0.0103
10/13/2014	647.24	-0.01334
10/14/2014	650.34	0.00479
10/15/2014	652.77	0.003736
10/16/2014	651.98	-0.00121
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10/20/2014	662.62	-0.00143
10/21/2014	661.88	-0.00112
10/22/2014	668.13	0.009443

10/23/2014	671.07	0.0044
10/24/2014	666.41	-0.00694
10/27/2014	658.7	-0.01157
10/28/2014	652.62	-0.00923
10/29/2014	667.8	0.02326
10/30/2014	666.81	-0.00148
10/31/2014	670.44	0.005444
11/3/2014	670.19	-0.00037
11/4/2014	664.45	-0.00856
11/5/2014	665.43	0.001475
11/6/2014	662.14	-0.00494
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11/10/2014	649.65	-0.00668
11/11/2014	661.68	0.018518
11/12/2014	663.92	0.003385
11/13/2014	665.7	0.002681
11/14/2014	665.84	0.00021
11/17/2014	668.51	0.00401
11/18/2014	675.76	0.010845
11/19/2014	678.64	0.004262
11/20/2014	672.59	-0.00891
11/21/2014	677.52	0.00733

11/24/2014	686.49	0.013239
11/25/2014	680.1	-0.00931
11/26/2014	681.6	0.002206
11/27/2014	684.71	0.004563
11/28/2014	683.02	-0.00247
12/1/2014	685.4	0.003485
12/2/2014	685.92	0.000759
12/3/2014	681.74	-0.00609
12/4/2014	686.69	0.007261
12/5/2014	688.28	0.002315
12/8/2014	680.77	-0.01091
12/9/2014	678.71	-0.00303
12/10/2014	682.72	0.005908
12/11/2014	679.66	-0.00448
12/12/2014	680.39	0.001074
12/15/2014	674.28	-0.00898
12/16/2014	663.39	-0.01615
12/17/2014	661.6	-0.0027
12/18/2014	675.49	0.020995
12/19/2014	679.18	0.005463
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1/6/2015	681.07	-0.01164
1/7/2015	687.51	0.009456
1/8/2015	688.14	0.000916
1/9/2015	688.95	0.001177
1/12/2015	683.78	-0.0075
1/13/2015	692.15	0.012241
1/14/2015	681.66	-0.01516
1/15/2015	687.57	0.00867
1/16/2015	681.69	-0.00855
1/19/2015	681.64	-7.33E-05
1/20/2015	688.62	0.01024
1/21/2015	702.1	0.019575
1/22/2015	708.84	0.0096
1/23/2015	716.73	0.011131
1/26/2015	705.43	-0.01577
1/27/2015	707.71	0.003232
1/28/2015	706.09	-0.00229
1/29/2015	703.1	-0.00423
1/30/2015	706.68	0.005092

2/2/2015	701.5	-0.00733
2/3/2015	704.64	0.004476
2/4/2015	708.72	0.00579
2/5/2015	700.4	-0.01174
2/6/2015	711.52	0.015877
2/9/2015	710.89	-0.00089
2/10/2015	707.01	-0.00546
2/11/2015	712.14	0.007256
2/12/2015	713.98	0.002584
2/13/2015	721.53	0.010575
2/16/2015	709.6	-0.01653
2/17/2015	714.34	0.00668
2/18/2015	718.68	0.006075
2/19/2015	718.68	0
2/20/2015	715.36	-0.00462
2/23/2015	718.39	0.004236
2/24/2015	720.43	0.00284
2/25/2015	727.44	0.00973
2/26/2015	727.37	-9.62E-05
2/27/2015	722.1	-0.00725
3/2/2015	728.61	0.009015
3/3/2015	730.2	0.002182

3/4/2015	723.39	-0.00933
3/5/2015	722.09	-0.0018
3/6/2015	734.85	0.017671
3/9/2015	724.65	-0.01388
3/10/2015	725.85	0.001656
3/11/2015	720.53	-0.00733
3/12/2015	723.77	0.004497
3/13/2015	723.68	-0.00012
3/16/2015	725.35	0.002308
3/17/2015	724.68	-0.00092
3/18/2015	718.32	-0.00878
3/19/2015	724.86	0.009105
3/20/2015	721.67	-0.0044
3/23/2015	721	-0.00093
3/24/2015	721.5	0.000693
3/25/2015	711.03	-0.01451
3/26/2015	703.48	-0.01062
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3/31/2015	728.2	0.010687
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4/2/2015	716.8	-0.00249

4/6/2015	720.87	0.005678
4/7/2015	727.56	0.00928
4/8/2015	719.99	-0.0104
4/9/2015	723.85	0.005361
4/10/2015	722.08	-0.00245
4/13/2015	717.43	-0.00644
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4/15/2015	711.09	-2.81E-05
4/16/2015	710.41	-0.00096
4/17/2015	709.33	-0.00152
4/20/2015	704.25	-0.00716
4/21/2015	717.98	0.019496
4/22/2015	716.12	-0.00259
4/23/2015	718.85	0.003812
4/24/2015	723.29	0.006177
4/27/2015	698.24	-0.03463
4/28/2015	701.08	0.004067
4/29/2015	674.87	-0.03739
4/30/2015	664.8	-0.01492
5/1/2015	664.8	0
5/4/2015	679.16	0.0216
5/5/2015	686.25	0.010439

5/6/2015	692.3	0.008816
5/7/2015	685.97	-0.00914
5/8/2015	696.7	0.015642
5/11/2015	696.16	-0.00078
5/12/2015	696.95	0.001135
5/13/2015	706.03	0.013028
5/15/2015	708.85	0.003994
5/18/2015	708.51	-0.00048
5/19/2015	711.75	0.004573
5/20/2015	714.8	0.004285
5/21/2015	712.28	-0.00353
5/22/2015	711.77	-0.00072
5/25/2015	711.27	-0.0007
5/26/2015	719.3	0.01129
5/27/2015	707.77	-0.01603
5/28/2015	707.16	-0.00086
5/29/2015	698.07	-0.01285
6/1/2015	700.65	0.003696
6/3/2015	692.4	-0.01177
6/4/2015	685.29	-0.01027
6/5/2015	684.75	-0.00079
6/8/2015	672.87	-0.01735

6/9/2015	655.7	-0.02552
6/10/2015	664.75	0.013802
6/11/2015	666.6	0.002783
6/12/2015	665.66	-0.00141
6/15/2015	648.04	-0.02647
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6/17/2015	660.82	0.011929
6/18/2015	665.06	0.006416
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6/22/2015	661.64	-0.00777
6/23/2015	657.11	-0.00685
6/24/2015	666.37	0.014092
6/25/2015	659.79	-0.00987
6/26/2015	658.85	-0.00142
6/29/2015	652.82	-0.00915
6/30/2015	656.99	0.006388
7/1/2015	654.81	-0.00332
7/2/2015	662.42	0.011622
7/3/2015	670.93	0.012847
7/6/2015	661.37	-0.01425
7/7/2015	657.72	-0.00552
7/8/2015	653.25	-0.0068

7/9/2015	645.59	-0.01173
7/10/2015	648.74	0.004879
7/13/2015	654.82	0.009372
7/14/2015	655.9	0.001649
7/15/2015	653.65	-0.00343
7/22/2015	658.39	0.007252
7/23/2015	656.34	-0.00311
7/24/2015	646.94	-0.01432
7/27/2015	632.14	-0.02288
7/28/2015	628.63	-0.00555
7/29/2015	629.1	0.000748
7/30/2015	628.9	-0.00032
7/31/2015	641.97	0.020782
8/3/2015	636.99	-0.00776
8/4/2015	634.22	-0.00435
8/5/2015	644.25	0.015815
8/6/2015	634.64	-0.01492
8/7/2015	631.77	-0.00452
8/10/2015	628.83	-0.00465
8/11/2015	607.75	-0.03352
8/12/2015	585.32	-0.03691
8/13/2015	605.3	0.034135

8/14/2015	606.41	0.001834
8/18/2015	597.19	-0.0152
8/19/2015	592.13	-0.00847
8/20/2015	587.99	-0.00699
8/21/2015	572.01	-0.02718
8/24/2015	544.39	-0.04829
8/25/2015	554.87	0.019251
8/26/2015	553.09	-0.00321
8/27/2015	585.17	0.058001
8/28/2015	586.09	0.001572
8/31/2015	598.28	0.020799
9/1/2015	584.1	-0.0237
9/2/2015	582.66	-0.00247
9/3/2015	590.89	0.014125
9/4/2015	589.14	-0.00296
9/7/2015	565.33	-0.04041
9/8/2015	567.34	0.003555
9/9/2015	574.99	0.013484
9/10/2015	577.06	0.0036
9/11/2015	584.9	0.013586
9/14/2015	591.68	0.011592
9/15/2015	580.28	-0.01927

9/16/2015	577.07	-0.00553
9/17/2015	584.43	0.012754
9/18/2015	584.84	0.000702
9/21/2015	583.28	-0.00267
9/22/2015	576.16	-0.01221
9/23/2015	561.53	-0.02539
9/25/2015	557.23	-0.00766
9/28/2015	542	-0.02733
9/29/2015	554.43	0.022934
9/30/2015	556.09	0.002994
10/1/2015	563.06	0.012534
10/2/2015	553.87	-0.01632
10/5/2015	576.34	0.040569
10/6/2015	596.68	0.035292
10/7/2015	602.55	0.009838
10/8/2015	601.15	-0.00232
10/9/2015	615.43	0.023754
10/12/2015	619.08	0.005931
10/13/2015	592.98	-0.04216
10/15/2015	599.48	0.010962
10/16/2015	602.01	0.00422
10/19/2015	612.11	0.016777

10/20/2015	612.84	0.001193
10/21/2015	616.93	0.006674
10/22/2015	611.34	-0.00906
10/23/2015	620.24	0.014558
10/26/2015	623.61	0.005433
10/27/2015	620.94	-0.00428
10/28/2015	610.9	-0.01617
10/29/2015	586.97	-0.03917
10/30/2015	586.1	-0.00148
11/2/2015	593.58	0.012762
11/3/2015	599.47	0.009923
11/4/2015	610.47	0.01835
11/5/2015	605.23	-0.00858
11/6/2015	603.79	-0.00238
11/9/2015	591.37	-0.02057
11/10/2015	582.21	-0.01549
11/11/2015	584.88	0.004586
11/12/2015	582.48	-0.0041
11/13/2015	587.55	0.008704
11/16/2015	581.53	-0.01025
11/17/2015	589.3	0.013361
11/18/2015	593.79	0.007619

11/19/2015	596.86	0.00517
11/20/2015	604.54	0.012867
11/23/2015	595.6	-0.01479
11/24/2015	594.88	-0.00121
11/25/2015	599.28	0.007396
11/26/2015	601.79	0.004188
11/27/2015	601.04	-0.00125
11/30/2015	579.8	-0.03534
12/1/2015	598.03	0.031442
12/2/2015	596.9	-0.00189
12/3/2015	596.57	-0.00055
12/4/2015	592.9	-0.00615
12/7/2015	595.72	0.004756
12/8/2015	582.21	-0.02268
12/10/2015	578.3	-0.00672
12/11/2015	565.09	-0.02284
12/14/2015	565.63	0.000956
12/15/2015	573.18	0.013348
12/16/2015	583.17	0.017429
12/17/2015	600.52	0.029751
12/18/2015	588.22	-0.02048
12/21/2015	591.69	0.005899

12/22/2015	595.6	0.006608
12/23/2015	593.25	-0.00395
12/28/2015	597.28	0.006793
12/29/2015	599.44	0.003616
12/30/2015	603.35	0.006523
1/4/2016	592.11	-0.01863
1/5/2016	597.26	0.008698
1/6/2016	612.22	0.025048
1/7/2016	599.38	-0.02097
1/8/2016	600.48	0.001835
1/11/2016	586.71	-0.02293
1/12/2016	596.04	0.015902
1/13/2016	601.86	0.009764
1/14/2016	594.12	-0.01286
1/15/2016	594.64	0.000875
1/18/2016	587.5	-0.01201
1/19/2016	592.4	0.00834
1/20/2016	582.8	-0.01621
1/21/2016	581.78	-0.00175
1/22/2016	590.67	0.015281
1/25/2016	595.41	0.008025
1/26/2016	594.95	-0.00077

1/27/2016	605.23	0.017279
1/28/2016	607.75	0.004164
1/29/2016	612.75	0.008227
2/1/2016	611.1	-0.00269
2/2/2016	603.72	-0.01208
2/3/2016	610.23	0.010783
2/4/2016	621.98	0.019255
2/5/2016	642.55	0.033072
2/9/2016	636.13	-0.00999
2/10/2016	634.17	-0.00308
2/11/2016	643.98	0.015469
2/12/2016	630.49	-0.02095
2/15/2016	633.97	0.005519
2/16/2016	635.29	0.002082
2/17/2016	638.29	0.004722
2/18/2016	641.42	0.004904
2/19/2016	631.06	-0.01615
2/22/2016	631.76	0.001109
2/23/2016	623.53	-0.01303
2/24/2016	620.82	-0.00435
2/25/2016	623.93	0.005009
2/26/2016	636.62	0.020339

2/29/2016	641.86	0.008231
3/1/2016	648.92	0.010999
3/2/2016	660	0.017075
3/3/2016	657.37	-0.00398
3/4/2016	654.52	-0.00434
3/7/2016	650.56	-0.00605
3/8/2016	648.36	-0.00338
3/10/2016	649.18	0.001265
3/11/2016	653.01	0.0059
3/14/2016	665.47	0.019081
3/15/2016	658.03	-0.01118
3/16/2016	661.67	0.005532
3/17/2016	668.14	0.009778
3/18/2016	669.3	0.001736
3/21/2016	668.26	-0.00155
3/22/2016	664.19	-0.00609
3/23/2016	656.99	-0.01084
3/24/2016	653.18	-0.0058
3/28/2016	646.07	-0.01089
3/29/2016	645	-0.00166
3/30/2016	650.67	0.008791
3/31/2016	652.69	0.003105

4/1/2016	657.01	0.006619
4/4/2016	662.13	0.007793
4/5/2016	658.55	-0.00541
4/6/2016	660.39	0.002794
4/7/2016	661.06	0.001015
4/8/2016	660.43	-0.00095
4/11/2016	650.17	-0.01554
4/12/2016	658.74	0.013181
4/13/2016	661.89	0.004782
4/14/2016	654.91	-0.01055
4/15/2016	667.81	0.019697
4/18/2016	673.35	0.008296
4/19/2016	679.51	0.009148
4/20/2016	678.59	-0.00135
4/21/2016	682.56	0.00585
4/22/2016	683.12	0.00082
4/25/2016	678.81	-0.00631
4/26/2016	666.42	-0.01825
4/27/2016	663.19	-0.00485
4/28/2016	656.41	-0.01022
4/29/2016	653.26	-0.0048
5/2/2016	645.6	-0.01173

5/3/2016	645.72	0.000186
5/4/2016	650.48	0.007372
5/9/2016	640.73	-0.01499
5/10/2016	643.79	0.004776
5/11/2016	651.07	0.011308
5/12/2016	648.97	-0.00323
5/13/2016	640.13	-0.01362
5/16/2016	634.32	-0.00908
5/17/2016	636.48	0.003405
5/18/2016	639.12	0.004148
5/19/2016	632.16	-0.01089
5/20/2016	632.91	0.001186
5/23/2016	638.89	0.009448
5/24/2016	635.26	-0.00568
5/25/2016	648.49	0.020826
5/26/2016	649.36	0.001342
5/27/2016	655.65	0.009687
5/30/2016	653.94	-0.00261
5/31/2016	648.85	-0.00778
6/1/2016	654.67	0.00897
6/2/2016	653.49	-0.0018
6/3/2016	658	0.006901

6/6/2016	667.53	0.014483
6/7/2016	674.03	0.009737
6/8/2016	669.12	-0.00728
6/9/2016	663.7	-0.0081
6/10/2016	657.7	-0.00904
6/13/2016	652.91	-0.00728
6/14/2016	655.59	0.004105
6/15/2016	660.36	0.007276
6/16/2016	657.04	-0.00503
6/17/2016	662.55	0.008386
6/20/2016	666.91	0.006581
6/21/2016	668.64	0.002594
6/22/2016	672.99	0.006506
6/23/2016	670	-0.00444
6/24/2016	663.94	-0.00904
6/27/2016	665.57	0.002455
6/28/2016	671.02	0.008188
6/29/2016	688.85	0.026571
6/30/2016	694.34	0.00797
7/1/2016	686.84	-0.0108
7/11/2016	701.66	0.021577
7/12/2016	703.06	0.001995

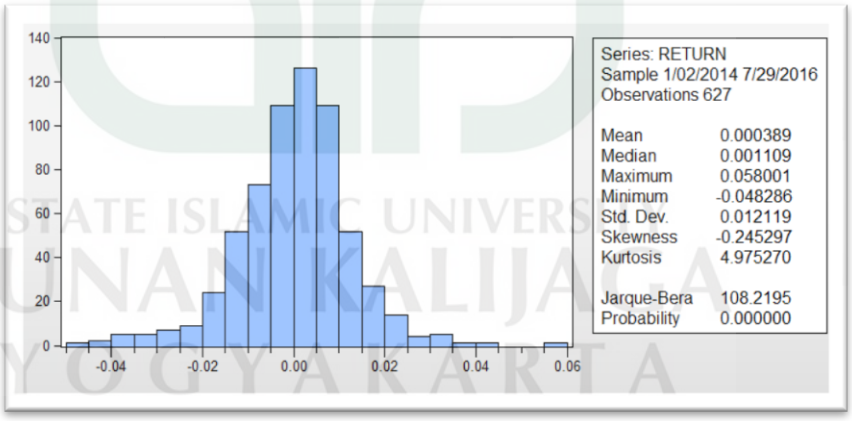
7/13/2016	714.39	0.016115
7/14/2016	700.16	-0.01992
7/15/2016	704.66	0.006427
7/18/2016	708.56	0.005535
7/19/2016	712.44	0.005476
7/20/2016	717.96	0.007748
7/21/2016	709.81	-0.01135
7/22/2016	709.44	-0.00052
7/25/2016	719.86	0.014688
7/26/2016	722.49	0.003653
7/27/2016	733.73	0.015557
7/28/2016	740.45	0.009159
7/29/2016	726.61	-0.01869

LAMPIRAN 2: Diskriptif , Uji Normalitas dan Uji Stasioneritas Data

1. Diskriptif data *return* indeks saham JII

Mean	0.000389
Median	0.001109
Maximum	0.058001
Minimum	-0.048286
Std. Dev.	0.012119
Skewness	-0.245297
Kurtosis	4.975270
Jarque-Bera	108.2195
Probability	0.000000
Sum	0.243986
Sum Sq. Dev.	0.091939
Observations	627

2. Uji Normalitas data *return* indeks saham JII



3. Uji Stasioner dengan uji akar uni

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-24.81111	0.0000
Test critical values:	1% level	-3.440567	
	5% level	-2.865939	
	10% level	-2.569171	

LAMPIRAN 3: Estimasi Model ARIMA (*p*,*d*,*q*)

1. Model ARIMA ((1),0,0) Dengan Kostanta

Dependent Variable: RETURN
Method: Least Squares
Date: 07/31/16 Time: 03:06
Sample (adjusted): 1/03/2014 7/29/2016
Included observations: 626 after adjustments
Convergence achieved after 2 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000390	0.000487	0.799239	0.4245
AR(1)	0.004797	0.040111	0.119597	0.9048

R-squared	0.000023	Mean dependent var	0.000390
Adjusted R-squared	-0.001580	S.D. dependent var	0.012129
S.E. of regression	0.012138	Akaike info criterion	-5.981741
Sum squared resid	0.091936	Schwarz criterion	-5.967557
Log likelihood	1874.285	Hannan-Quinn criter.	-5.976230
F-statistic	0.014303	Durbin-Watson stat	1.992211
Prob(F-statistic)	0.904841		

Inverted AR Roots	.00

2. Model ARIMA ((1),0,0) Tanpa Kostanta

Dependent Variable: RETURN
Method: Least Squares
Date: 07/31/16 Time: 03:04
Sample (adjusted): 1/03/2014 7/29/2016
Included observations: 626 after adjustments
Convergence achieved after 2 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AR(1)	0.005908	0.040075	0.147423	0.8828

R-squared	-0.001000	Mean dependent var	0.000390
Adjusted R-squared	-0.001000	S.D. dependent var	0.012129
S.E. of regression	0.012135	Akaike info criterion	-5.983914
Sum squared resid	0.092030	Schwarz criterion	-5.976822
Log likelihood	1873.965	Hannan-Quinn criter.	-5.981158
Durbin-Watson stat	1.992285		

Inverted AR Roots	.01

3. Model ARIMA ((2),0,0) Dengan Kostanta

Dependent Variable: RETURN
Method: Least Squares
Date: 07/31/16 Time: 03:17
Sample (adjusted): 1/06/2014 7/29/2016
Included observations: 625 after adjustments
Convergence achieved after 3 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000418	0.000464	0.901766	0.3675
AR(2)	-0.045304	0.040048	-1.131234	0.2584

R-squared	0.002050	Mean dependent var	0.000419
Adjusted R-squared	0.000448	S.D. dependent var	0.012117
S.E. of regression	0.012114	Akaike info criterion	-5.985705
Sum squared resid	0.091426	Schwarz criterion	-5.971504
Log likelihood	1872.533	Hannan-Quinn criter.	-5.980187
F-statistic	1.279691	Durbin-Watson stat	1.996776
Prob(F-statistic)	0.258392		

4. Model ARIMA ((2),0,0) Tanpa Kostanta

Dependent Variable: RETURN
Method: Least Squares
Date: 07/31/16 Time: 03:16
Sample (adjusted): 1/06/2014 7/29/2016
Included observations: 625 after adjustments
Convergence achieved after 3 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AR(2)	-0.044095	0.040020	-1.101821	0.2710

R-squared	0.000749	Mean dependent var	0.000419
Adjusted R-squared	0.000749	S.D. dependent var	0.012117
S.E. of regression	0.012112	Akaike info criterion	-5.987602
Sum squared resid	0.091545	Schwarz criterion	-5.980501
Log likelihood	1872.125	Hannan-Quinn criter.	-5.984843
Durbin-Watson stat	1.993984		

5. Model ARIMA ((3),0,0) Dengan Kostanta

Dependent Variable: RETURN
Method: Least Squares
Date: 07/31/16 Time: 03:20
Sample (adjusted): 1/07/2014 7/29/2016
Included observations: 624 after adjustments
Convergence achieved after 3 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000431	0.000446	0.965656	0.3346
AR(3)	-0.084770	0.040005	-2.118958	0.0345

R-squared	0.007167	Mean dependent var	0.000435
Adjusted R-squared	0.005571	S.D. dependent var	0.012120
S.E. of regression	0.012086	Akaike info criterion	-5.990365
Sum squared resid	0.090854	Schwarz criterion	-5.976146
Log likelihood	1870.994	Hannan-Quinn criter.	-5.984840
F-statistic	4.489983	Durbin-Watson stat	2.002021
Prob(F-statistic)	0.034490		

Inverted AR Roots	.22+.38i	.22-.38i	-.44

6. Model ARIMA ((3),0,0) Tanpa Kostanta

Dependent Variable: RETURN
Method: Least Squares
Date: 07/31/16 Time: 03:18
Sample (adjusted): 1/07/2014 7/29/2016
Included observations: 624 after adjustments
Convergence achieved after 3 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AR(3)	-0.083553	0.039983	-2.089691	0.0371

R-squared	0.005680	Mean dependent var	0.000435
Adjusted R-squared	0.005680	S.D. dependent var	0.012120
S.E. of regression	0.012085	Akaike info criterion	-5.992073
Sum squared resid	0.090990	Schwarz criterion	-5.984964
Log likelihood	1870.527	Hannan-Quinn criter.	-5.989311
Durbin-Watson stat	1.998881		

Inverted AR Roots	.22+.38i	.22-.38i	-.44

7. Model ARIMA (0,0,(1)) Dengan Kostanta

Dependent Variable: RETURN
Method: Least Squares
Date: 07/31/16 Time: 03:24
Sample: 1/02/2014 7/29/2016
Included observations: 627
Convergence achieved after 5 iterations
MA Backcast: 1/01/2014

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000389	0.000487	0.798852	0.4247
MA(1)	0.005267	0.040080	0.131422	0.8955

R-squared	0.000025	Mean dependent var	0.000389
Adjusted R-squared	-0.001575	S.D. dependent var	0.012119
S.E. of regression	0.012128	Akaike info criterion	-5.983348
Sum squared resid	0.091936	Schwarz criterion	-5.969182
Log likelihood	1877.780	Hannan-Quinn criter.	-5.977844
F-statistic	0.015739	Durbin-Watson stat	1.996485
Prob(F-statistic)	0.900205		

Inverted MA Roots	-.01

8. Model ARIMA (0,0,(1)) Tanpa Kostanta

Dependent Variable: RETURN
Method: Least Squares
Date: 07/31/16 Time: 03:23
Sample: 1/02/2014 7/29/2016
Included observations: 627
Convergence achieved after 6 iterations
MA Backcast: 1/01/2014

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MA(1)	0.006468	0.040044	0.161521	0.8717

R-squared	-0.000995	Mean dependent var	0.000389
Adjusted R-squared	-0.000995	S.D. dependent var	0.012119
S.E. of regression	0.012125	Akaike info criterion	-5.985518
Sum squared resid	0.092030	Schwarz criterion	-5.978435
Log likelihood	1877.460	Hannan-Quinn criter.	-5.982766
Durbin-Watson stat	1.996734		

Inverted MA Roots	-.01

9. Model ARIMA (0,0,(2)) Dengan Kostanta

Dependent Variable: RETURN
Method: Least Squares
Date: 07/31/16 Time: 03:26
Sample: 1/02/2014 7/29/2016
Included observations: 627
Convergence achieved after 6 iterations
MA Backcast: 12/31/2013 1/01/2014

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000391	0.000461	0.849662	0.3958
MA(2)	-0.048043	0.040038	-1.199920	0.2306

R-squared	0.002158	Mean dependent var	0.000389
Adjusted R-squared	0.000562	S.D. dependent var	0.012119
S.E. of regression	0.012115	Akaike info criterion	-5.985483
Sum squared resid	0.091740	Schwarz criterion	-5.971318
Log likelihood	1878.449	Hannan-Quinn criter.	-5.979980
F-statistic	1.351945	Durbin-Watson stat	1.994868
Prob(F-statistic)	0.245382		

Inverted MA Roots	.22	-.22

10. Model ARIMA (0,0,(2)) Tanpa Kostanta

Dependent Variable: RETURN
Method: Least Squares
Date: 07/31/16 Time: 03:25
Sample: 1/02/2014 7/29/2016
Included observations: 627
Convergence achieved after 6 iterations
MA Backcast: 12/31/2013 1/01/2014

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MA(2)	-0.046598	0.040008	-1.164719	0.2446

R-squared	0.001008	Mean dependent var	0.000389
Adjusted R-squared	0.001008	S.D. dependent var	0.012119
S.E. of regression	0.012113	Akaike info criterion	-5.987521
Sum squared resid	0.091846	Schwarz criterion	-5.980438
Log likelihood	1878.088	Hannan-Quinn criter.	-5.984769
Durbin-Watson stat	1.992305		

Inverted MA Roots	.22	-.22

11. Model ARIMA (0,0,(3)) Dengan Kostanta

Dependent Variable: RETURN
Method: Least Squares
Date: 07/31/16 Time: 03:29
Sample: 1/02/2014 7/29/2016
Included observations: 627
Convergence achieved after 6 iterations
MA Backcast: 12/30/2013 1/01/2014

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000393	0.000435	0.904293	0.3662
MA(3)	-0.099231	0.039957	-2.483431	0.0133

R-squared	0.008348	Mean dependent var	0.000389
Adjusted R-squared	0.006761	S.D. dependent var	0.012119
S.E. of regression	0.012078	Akaike info criterion	-5.991705
Sum squared resid	0.091171	Schwarz criterion	-5.977540
Log likelihood	1880.400	Hannan-Quinn criter.	-5.986202
F-statistic	5.261390	Durbin-Watson stat	1.999663
Prob(F-statistic)	0.022135		

Inverted MA Roots	.46	-.23-.40i	-.23+.40i

12. Model ARIMA (0,0,(3)) Tanpa Kostanta

Dependent Variable: RETURN
Method: Least Squares
Date: 07/31/16 Time: 03:28
Sample: 1/02/2014 7/29/2016
Included observations: 627
Convergence achieved after 6 iterations
MA Backcast: 12/30/2013 1/01/2014

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MA(3)	-0.097409	0.039934	-2.439244	0.0150

R-squared	0.007053	Mean dependent var	0.000389
Adjusted R-squared	0.007053	S.D. dependent var	0.012119
S.E. of regression	0.012076	Akaike info criterion	-5.993591
Sum squared resid	0.091290	Schwarz criterion	-5.986508
Log likelihood	1879.991	Hannan-Quinn criter.	-5.990839
Durbin-Watson stat	1.996797		

Inverted MA Roots	.46	-.23+.40i	-.23-.40i

13. Model ARIMA ((1),0,(1)) Dengan Kostanta

Dependent Variable: RETURN
Method: Least Squares
Date: 07/31/16 Time: 03:34
Sample (adjusted): 1/03/2014 7/29/2016
Included observations: 626 after adjustments
Convergence achieved after 21 iterations
MA Backcast: 1/02/2014

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000391	0.000485	0.805699	0.4207
AR(1)	-0.719906	0.600562	-1.198720	0.2311
MA(1)	0.721313	0.599999	1.202191	0.2297

R-squared	0.001640	Mean dependent var	0.000390
Adjusted R-squared	-0.001565	S.D. dependent var	0.012129
S.E. of regression	0.012138	Akaike info criterion	-5.980164
Sum squared resid	0.091788	Schwarz criterion	-5.958890
Log likelihood	1874.791	Hannan-Quinn criter.	-5.971898
F-statistic	0.511731	Durbin-Watson stat	1.986449
Prob(F-statistic)	0.599709		

Inverted AR Roots	-.72
Inverted MA Roots	-.72

14. Model ARIMA ((1),0,(1)) Tanpa Kostanta

Dependent Variable: RETURN
Method: Least Squares
Date: 07/31/16 Time: 03:33
Sample (adjusted): 1/03/2014 7/29/2016
Included observations: 626 after adjustments
Convergence achieved after 15 iterations
MA Backcast: 1/02/2014

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AR(1)	-0.992086	0.006105	-162.5126	0.0000
MA(1)	0.994263	0.005047	196.9891	0.0000

R-squared	0.002792	Mean dependent var	0.000390
Adjusted R-squared	0.001194	S.D. dependent var	0.012129
S.E. of regression	0.012121	Akaike info criterion	-5.984513
Sum squared resid	0.091682	Schwarz criterion	-5.970330
Log likelihood	1875.153	Hannan-Quinn criter.	-5.979003
Durbin-Watson stat	1.979208		

Inverted AR Roots	-.99
Inverted MA Roots	-.99

15. Model ARIMA ((1),0,(2)) Dengan Kostanta

Dependent Variable: RETURN
Method: Least Squares
Date: 07/31/16 Time: 03:36
Sample (adjusted): 1/03/2014 7/29/2016
Included observations: 626 after adjustments
Convergence achieved after 6 iterations
MA Backcast: 1/01/2014 1/02/2014

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000393	0.000462	0.849952	0.3957
AR(1)	0.000723	0.040138	0.018006	0.9856
MA(2)	-0.048118	0.040102	-1.199882	0.2306

R-squared	0.002168	Mean dependent var	0.000390
Adjusted R-squared	-0.001036	S.D. dependent var	0.012129
S.E. of regression	0.012135	Akaike info criterion	-5.980693
Sum squared resid	0.091739	Schwarz criterion	-5.959418
Log likelihood	1874.957	Hannan-Quinn criter.	-5.972427
F-statistic	0.676736	Durbin-Watson stat	1.992983
Prob(F-statistic)	0.508646		

Inverted AR Roots	.00	
Inverted MA Roots	.22	-.22

16. Model ARIMA ((1),0,(2)) Tanpa Kostanta

Dependent Variable: RETURN
Method: Least Squares
Date: 07/31/16 Time: 03:35
Sample (adjusted): 1/03/2014 7/29/2016
Included observations: 626 after adjustments
Convergence achieved after 6 iterations
MA Backcast: 1/01/2014 1/02/2014

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AR(1)	0.002109	0.040102	0.052593	0.9581
MA(2)	-0.046490	0.040072	-1.160162	0.2464

R-squared	0.001015	Mean dependent var	0.000390
Adjusted R-squared	-0.000586	S.D. dependent var	0.012129
S.E. of regression	0.012132	Akaike info criterion	-5.982733
Sum squared resid	0.091845	Schwarz criterion	-5.968550
Log likelihood	1874.595	Hannan-Quinn criter.	-5.977222
Durbin-Watson stat	1.993132		

Inverted AR Roots	.00	
Inverted MA Roots	.22	-.22

17. Model ARIMA ((1),0,(3)) Dengan Kostanta

Dependent Variable: RETURN
Method: Least Squares
Date: 07/31/16 Time: 03:40
Sample (adjusted): 1/03/2014 7/29/2016
Included observations: 626 after adjustments
Convergence achieved after 6 iterations
MA Backcast: 12/31/2013 1/02/2014

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000396	0.000435	0.910218	0.3631
AR(1)	-0.001850	0.040202	-0.046027	0.9633
MA(3)	-0.099779	0.040078	-2.489631	0.0130

R-squared	0.008394	Mean dependent var	0.000390
Adjusted R-squared	0.005211	S.D. dependent var	0.012129
S.E. of regression	0.012097	Akaike info criterion	-5.986952
Sum squared resid	0.091167	Schwarz criterion	-5.965677
Log likelihood	1876.916	Hannan-Quinn criter.	-5.978686
F-statistic	2.636822	Durbin-Watson stat	1.992912
Prob(F-statistic)	0.072387		

Inverted AR Roots	-.00		
Inverted MA Roots	.46	-.23-.40i	-.23+.40i

18. Model ARIMA ((1),0,(3)) Tanpa Kostanta

Dependent Variable: RETURN
Method: Least Squares
Date: 07/31/16 Time: 03:39
Sample (adjusted): 1/03/2014 7/29/2016
Included observations: 626 after adjustments
Convergence achieved after 6 iterations
MA Backcast: 12/31/2013 1/02/2014

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AR(1)	-0.000296	0.040162	-0.007372	0.9941
MA(3)	-0.097739	0.040051	-2.440347	0.0150

R-squared	0.007081	Mean dependent var	0.000390
Adjusted R-squared	0.005489	S.D. dependent var	0.012129
S.E. of regression	0.012095	Akaike info criterion	-5.988824
Sum squared resid	0.091288	Schwarz criterion	-5.974640
Log likelihood	1876.502	Hannan-Quinn criter.	-5.983313
Durbin-Watson stat	1.992938		

Inverted AR Roots	-.00		
Inverted MA Roots	.46	-.23+.40i	-.23-.40i

19. Model ARIMA ((2),0,(1)) Dengan Kostanta

Dependent Variable: RETURN
Method: Least Squares
Date: 07/31/16 Time: 03:43
Sample (adjusted): 1/06/2014 7/29/2016
Included observations: 625 after adjustments
Convergence achieved after 6 iterations
MA Backcast: 1/03/2014

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000418	0.000464	0.901917	0.3675
AR(2)	-0.045368	0.040082	-1.131876	0.2581
MA(1)	-0.000828	0.040172	-0.020613	0.9836

R-squared	0.002051	Mean dependent var	0.000419
Adjusted R-squared	-0.001158	S.D. dependent var	0.012117
S.E. of regression	0.012124	Akaike info criterion	-5.982505
Sum squared resid	0.091426	Schwarz criterion	-5.961204
Log likelihood	1872.533	Hannan-Quinn criter.	-5.974228
F-statistic	0.639028	Durbin-Watson stat	1.995145
Prob(F-statistic)	0.528151		

Inverted MA Roots	.00

20. Model ARIMA ((2),0,(1)) Tanpa Kostanta

Dependent Variable: RETURN
Method: Least Squares
Date: 07/31/16 Time: 03:41
Sample (adjusted): 1/06/2014 7/29/2016
Included observations: 625 after adjustments
Convergence achieved after 6 iterations
MA Backcast: 1/03/2014

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AR(2)	-0.044039	0.040053	-1.099526	0.2720
MA(1)	0.000732	0.040136	0.018226	0.9855

R-squared	0.000749	Mean dependent var	0.000419
Adjusted R-squared	-0.000855	S.D. dependent var	0.012117
S.E. of regression	0.012122	Akaike info criterion	-5.984402
Sum squared resid	0.091545	Schwarz criterion	-5.970201
Log likelihood	1872.126	Hannan-Quinn criter.	-5.978884
Durbin-Watson stat	1.995425		

Inverted MA Roots	-.00

21. Model ARIMA ((2),0,(2)) Dengan Kostanta

Dependent Variable: RETURN
Method: Least Squares
Date: 07/31/16 Time: 03:45
Sample (adjusted): 1/06/2014 7/29/2016
Included observations: 625 after adjustments
Convergence achieved after 14 iterations
MA Backcast: 1/02/2014 1/03/2014

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000442	0.000440	1.004474	0.3155
AR(2)	0.377618	0.417607	0.904243	0.3662
MA(2)	-0.436223	0.406668	-1.072675	0.2838

R-squared	0.004808	Mean dependent var	0.000419
Adjusted R-squared	0.001608	S.D. dependent var	0.012117
S.E. of regression	0.012107	Akaike info criterion	-5.985272
Sum squared resid	0.091173	Schwarz criterion	-5.963971
Log likelihood	1873.398	Hannan-Quinn criter.	-5.976996
F-statistic	1.502615	Durbin-Watson stat	2.005784
Prob(F-statistic)	0.223354		

Inverted AR Roots	.61	-.61
Inverted MA Roots	.66	-.66

22. Model ARIMA ((2),0,(2)) Tanpa Kostanta

Dependent Variable: RETURN
Method: Least Squares
Date: 07/31/16 Time: 03:44
Sample (adjusted): 1/06/2014 7/29/2016
Included observations: 625 after adjustments
Convergence achieved after 15 iterations
MA Backcast: 1/02/2014 1/03/2014

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AR(2)	0.364505	0.436551	0.834966	0.4041
MA(2)	-0.420822	0.426112	-0.987586	0.3237

R-squared	0.003201	Mean dependent var	0.000419
Adjusted R-squared	0.001601	S.D. dependent var	0.012117
S.E. of regression	0.012107	Akaike info criterion	-5.986859
Sum squared resid	0.091320	Schwarz criterion	-5.972658
Log likelihood	1872.893	Hannan-Quinn criter.	-5.981341
Durbin-Watson stat	2.001753		

Inverted AR Roots	.60	-.60
Inverted MA Roots	.65	-.65

23. Model ARIMA ((2),0,(3)) Dengan Kostanta

Dependent Variable: RETURN
Method: Least Squares
Date: 07/31/16 Time: 03:47
Sample (adjusted): 1/06/2014 7/29/2016
Included observations: 625 after adjustments
Convergence achieved after 6 iterations
MA Backcast: 1/01/2014 1/03/2014

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000419	0.000413	1.013951	0.3110
AR(2)	-0.051432	0.040081	-1.283181	0.1999
MA(3)	-0.100515	0.040049	-2.509792	0.0123

R-squared	0.010633	Mean dependent var	0.000419
Adjusted R-squared	0.007452	S.D. dependent var	0.012117
S.E. of regression	0.012072	Akaike info criterion	-5.991142
Sum squared resid	0.090639	Schwarz criterion	-5.969841
Log likelihood	1875.232	Hannan-Quinn criter.	-5.982865
F-statistic	3.342376	Durbin-Watson stat	2.002943
Prob(F-statistic)	0.035989		

Inverted MA Roots	.46	-.23-.40i	-.23+.40i

24. Model ARIMA ((2),0,(3)) Tanpa Kostanta

Dependent Variable: RETURN
Method: Least Squares
Date: 07/31/16 Time: 03:46
Sample (adjusted): 1/06/2014 7/29/2016
Included observations: 625 after adjustments
Convergence achieved after 6 iterations
MA Backcast: 1/01/2014 1/03/2014

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AR(2)	-0.049775	0.040054	-1.242693	0.2144
MA(3)	-0.098291	0.040028	-2.455569	0.0143

R-squared	0.009004	Mean dependent var	0.000419
Adjusted R-squared	0.007413	S.D. dependent var	0.012117
S.E. of regression	0.012072	Akaike info criterion	-5.992697
Sum squared resid	0.090788	Schwarz criterion	-5.978497
Log likelihood	1874.718	Hannan-Quinn criter.	-5.987180
Durbin-Watson stat	1.999524		

Inverted MA Roots	.46	-.23+.40i	-.23-.40i

25. Model ARIMA ((3),0,(1)) Dengan Kostanta

Dependent Variable: RETURN
Method: Least Squares
Date: 07/31/16 Time: 03:50
Sample (adjusted): 1/07/2014 7/29/2016
Included observations: 624 after adjustments
Convergence achieved after 6 iterations
MA Backcast: 1/06/2014

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000431	0.000444	0.969957	0.3324
AR(3)	-0.085044	0.040071	-2.122316	0.0342
MA(1)	-0.004513	0.040242	-0.112136	0.9108

R-squared	0.007185	Mean dependent var	0.000435
Adjusted R-squared	0.003987	S.D. dependent var	0.012120
S.E. of regression	0.012095	Akaike info criterion	-5.987178
Sum squared resid	0.090852	Schwarz criterion	-5.965850
Log likelihood	1870.999	Hannan-Quinn criter.	-5.978890
F-statistic	2.247013	Durbin-Watson stat	1.993554
Prob(F-statistic)	0.106573		

Inverted AR Roots	.22+.38i	.22-.38i	-.44
Inverted MA Roots	.00		

26. Model ARIMA ((3),0,(1)) Tanpa Kostanta

Dependent Variable: RETURN
Method: Least Squares
Date: 07/31/16 Time: 03:48
Sample (adjusted): 1/07/2014 7/29/2016
Included observations: 624 after adjustments
Convergence achieved after 6 iterations
MA Backcast: 1/06/2014

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AR(3)	-0.083700	0.040048	-2.090004	0.0370
MA(1)	-0.002534	0.040204	-0.063037	0.9498

R-squared	0.005686	Mean dependent var	0.000435
Adjusted R-squared	0.004087	S.D. dependent var	0.012120
S.E. of regression	0.012095	Akaike info criterion	-5.988874
Sum squared resid	0.090990	Schwarz criterion	-5.974655
Log likelihood	1870.529	Hannan-Quinn criter.	-5.983349
Durbin-Watson stat	1.994114		

Inverted AR Roots	.22+.38i	.22-.38i	-.44
Inverted MA Roots	.00		

27. Model ARIMA ((3),0,(2)) Dengan Kostanta

Dependent Variable: RETURN
Method: Least Squares
Date: 07/31/16 Time: 03:52
Sample (adjusted): 1/07/2014 7/29/2016
Included observations: 624 after adjustments
Convergence achieved after 6 iterations
MA Backcast: 1/03/2014 1/06/2014

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000432	0.000420	1.028589	0.3041
AR(3)	-0.087868	0.040021	-2.195536	0.0285
MA(2)	-0.055502	0.040154	-1.382235	0.1674

R-squared	0.010022	Mean dependent var	0.000435
Adjusted R-squared	0.006833	S.D. dependent var	0.012120
S.E. of regression	0.012078	Akaike info criterion	-5.990039
Sum squared resid	0.090593	Schwarz criterion	-5.968712
Log likelihood	1871.892	Hannan-Quinn criter.	-5.981751
F-statistic	3.143245	Durbin-Watson stat	2.003680
Prob(F-statistic)	0.043830		

Inverted AR Roots	.22+.39i	.22-.39i	-.44
Inverted MA Roots	.24	-.24	

28. Model ARIMA ((3),0,(2)) Tanpa Kostanta

Dependent Variable: RETURN
Method: Least Squares
Date: 07/31/16 Time: 03:51
Sample (adjusted): 1/07/2014 7/29/2016
Included observations: 624 after adjustments
Convergence achieved after 6 iterations
MA Backcast: 1/03/2014 1/06/2014

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AR(3)	-0.086381	0.040001	-2.159466	0.0312
MA(2)	-0.053415	0.040125	-1.331208	0.1836

R-squared	0.008341	Mean dependent var	0.000435
Adjusted R-squared	0.006747	S.D. dependent var	0.012120
S.E. of regression	0.012079	Akaike info criterion	-5.991548
Sum squared resid	0.090747	Schwarz criterion	-5.977330
Log likelihood	1871.363	Hannan-Quinn criter.	-5.986023
Durbin-Watson stat	2.000190		

Inverted AR Roots	.22+.38i	.22-.38i	-.44
Inverted MA Roots	.23	-.23	

29. Model ARIMA ((3),0,(3)) Dengan Kostanta

Dependent Variable: RETURN
Method: Least Squares
Date: 07/31/16 Time: 03:54
Sample (adjusted): 1/07/2014 7/29/2016
Included observations: 624 after adjustments
Convergence achieved after 15 iterations
MA Backcast: 1/02/2014 1/06/2014

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000406	0.000395	1.028010	0.3043
AR(3)	0.496606	0.247114	2.009627	0.0449
MA(3)	-0.592077	0.228667	-2.589261	0.0098

R-squared	0.010690	Mean dependent var	0.000435
Adjusted R-squared	0.007503	S.D. dependent var	0.012120
S.E. of regression	0.012074	Akaike info criterion	-5.990714
Sum squared resid	0.090532	Schwarz criterion	-5.969386
Log likelihood	1872.103	Hannan-Quinn criter.	-5.982426
F-statistic	3.354960	Durbin-Watson stat	2.005581
Prob(F-statistic)	0.035545		

Inverted AR Roots	.79	-.40+.69i	-.40-.69i
Inverted MA Roots	.84	-.42+.73i	-.42-.73i

30. Model ARIMA ((3),0,(3)) Tanpa Kostanta

Dependent Variable: RETURN
Method: Least Squares
Date: 07/31/16 Time: 03:53
Sample (adjusted): 1/07/2014 7/29/2016
Included observations: 624 after adjustments
Convergence achieved after 13 iterations
MA Backcast: 1/02/2014 1/06/2014

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AR(3)	0.506676	0.246617	2.054505	0.0403
MA(3)	-0.599111	0.228163	-2.625806	0.0089

R-squared	0.009015	Mean dependent var	0.000435
Adjusted R-squared	0.007422	S.D. dependent var	0.012120
S.E. of regression	0.012075	Akaike info criterion	-5.992228
Sum squared resid	0.090685	Schwarz criterion	-5.978010
Log likelihood	1871.575	Hannan-Quinn criter.	-5.986703
Durbin-Watson stat	2.001732		

Inverted AR Roots	.80	-.40+.69i	-.40-.69i
Inverted MA Roots	.84	-.42+.73i	-.42-.73i

LAMPIRAN 4: Uji ARCH-LM Model ARIMA (*p,d,q*)

1. Model ARIMA((3),0,0) Tanpa konstanta

F-statistic	9.319491	Prob. F(1,621)	0.0024
Obs*R-squared	9.211270	Prob. Chi-Square(1)	0.0024

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 08/02/16 Time: 11:29
Sample (adjusted): 1/08/2014 7/29/2016
Included observations: 623 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000128	1.27E-05	10.04836	0.0000
RESID^2(-1)	0.121639	0.039845	3.052784	0.0024

R-squared	0.014785	Mean dependent var	0.000146
Adjusted R-squared	0.013199	S.D. dependent var	0.000285
S.E. of regression	0.000283	Akaike info criterion	-13.49683
Sum squared resid	4.98E-05	Schwarz criterion	-13.48260
Log likelihood	4206.264	Hannan-Quinn criter.	-13.49130
F-statistic	9.319491	Durbin-Watson stat	2.012786
Prob(F-statistic)	0.002364		

2. Model ARIMA(0,0,(3)) Tanpa konstanta

F-statistic	9.887787	Prob. F(1,624)	0.0017
Obs*R-squared	9.764748	Prob. Chi-Square(1)	0.0018

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 08/02/16 Time: 11:32
Sample (adjusted): 1/03/2014 7/29/2016
Included observations: 626 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000128	1.26E-05	10.11809	0.0000
RESID^2(-1)	0.124915	0.039725	3.144485	0.0017

R-squared	0.015599	Mean dependent var	0.000146
Adjusted R-squared	0.014021	S.D. dependent var	0.000283
S.E. of regression	0.000281	Akaike info criterion	-13.51485
Sum squared resid	4.92E-05	Schwarz criterion	-13.50067
Log likelihood	4232.148	Hannan-Quinn criter.	-13.50934
F-statistic	9.887787	Durbin-Watson stat	2.011838
Prob(F-statistic)	0.001743		

3. Model ARIMA((1),0,(1)) Tanpa konstanta

Heteroskedasticity Test: ARCH

F-statistic	6.786221	Prob. F(1,623)	0.0094
Obs*R-squared	6.734648	Prob. Chi-Square(1)	0.0095

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 08/02/16 Time: 11:39
Sample (adjusted): 1/06/2014 7/29/2016
Included observations: 625 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000131	1.30E-05	10.08511	0.0000
RESID^2(-1)	0.103831	0.039858	2.605038	0.0094

R-squared	0.010775	Mean dependent var	0.000146
Adjusted R-squared	0.009188	S.D. dependent var	0.000292
S.E. of regression	0.000291	Akaike info criterion	-13.44621
Sum squared resid	5.26E-05	Schwarz criterion	-13.43201
Log likelihood	4203.940	Hannan-Quinn criter.	-13.44069
F-statistic	6.786221	Durbin-Watson stat	2.011793
Prob(F-statistic)	0.009406		

4. Model ARIMA((3),0,(3)) Tanpa konstanta

Heteroskedasticity Test: ARCH

F-statistic	10.74630	Prob. F(1,621)	0.0011
Obs*R-squared	10.59752	Prob. Chi-Square(1)	0.0011

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 08/02/16 Time: 11:41
Sample (adjusted): 1/08/2014 7/29/2016
Included observations: 623 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000126	1.26E-05	10.07003	0.0000
RESID^2(-1)	0.130476	0.039802	3.278154	0.0011

R-squared	0.017010	Mean dependent var	0.000145
Adjusted R-squared	0.015428	S.D. dependent var	0.000280
S.E. of regression	0.000278	Akaike info criterion	-13.53254
Sum squared resid	4.81E-05	Schwarz criterion	-13.51830
Log likelihood	4217.386	Hannan-Quinn criter.	-13.52701
F-statistic	10.74630	Durbin-Watson stat	2.013360
Prob(F-statistic)	0.001103		

Lampiran 5: Proses *Fuzzified* Variasi dan Relasi Variasi *Fuzzy Logic*

Date	*Residual* Kuadrat	Variasi	*Fuzzified* Variasi	Relasi Variasi
1/2/2014	1.19923E-10	0		
1/3/2014	0.000305275	0.000305	A_4	
1/6/2014	9.3227E-05	-0.00021	A_3	$A_4 \rightarrow A_3$
1/7/2014	0.000173527	8.03E-05	A_4	$A_3 \rightarrow A_4$
1/8/2014	3.02191E-05	-0.00014	A_3	$A_4 \rightarrow A_3$
1/9/2014	2.14899E-05	-8.7E-06	A_3	$A_3 \rightarrow A_3$
1/10/2014	0.000164389	0.000143	A_4	$A_3 \rightarrow A_4$
1/13/2014	0.001149112	0.000985	A_4	$A_4 \rightarrow A_4$
1/15/2014	0.000168773	-0.00098	A_3	$A_4 \rightarrow A_3$
1/16/2014	1.44485E-05	-0.00015	A_3	$A_3 \rightarrow A_3$
1/17/2014	8.37652E-06	-6.1E-06	A_3	$A_3 \rightarrow A_3$
1/20/2014	9.97535E-05	9.14E-05	A_4	$A_3 \rightarrow A_4$
1/21/2014	8.61851E-07	-9.9E-05	A_3	$A_4 \rightarrow A_3$
1/22/2014	7.08842E-05	7E-05	A_4	$A_3 \rightarrow A_4$
1/23/2014	3.5507E-06	-6.7E-05	A_3	$A_4 \rightarrow A_3$
1/24/2014	0.00029399	0.00029	A_4	$A_3 \rightarrow A_4$
1/27/2014	0.001094481	0.0008	A_4	$A_4 \rightarrow A_4$
1/28/2014	5.93246E-05	-0.00104	A_2	$A_4 \rightarrow A_2$
1/29/2014	0.000436284	0.000377	A_4	$A_2 \rightarrow A_4$

1/30/2014	1.02325E-06	-0.00044	A_3	$A_4 \rightarrow A_3$
2/3/2014	0.000127138	0.000126	A_4	$A_3 \rightarrow A_4$
2/4/2014	0.000134909	7.77E-06	A_4	$A_4 \rightarrow A_4$
2/5/2014	0.000140034	5.13E-06	A_4	$A_4 \rightarrow A_4$
2/6/2014	9.87269E-05	-4.1E-05	A_3	$A_4 \rightarrow A_3$
2/7/2014	5.55529E-05	-4.3E-05	A_3	$A_3 \rightarrow A_3$
2/10/2014	1.30644E-05	-4.2E-05	A_3	$A_3 \rightarrow A_3$
2/11/2014	1.04885E-05	-2.6E-06	A_3	$A_3 \rightarrow A_3$
2/12/2014	6.35097E-05	5.3E-05	A_4	$A_3 \rightarrow A_4$
2/13/2014	1.16005E-05	-5.2E-05	A_3	$A_4 \rightarrow A_3$
2/14/2014	1.02237E-05	-1.4E-06	A_3	$A_3 \rightarrow A_3$
2/17/2014	0.000136422	0.000126	A_4	$A_3 \rightarrow A_4$
2/18/2014	1.34614E-06	-0.00014	A_3	$A_4 \rightarrow A_3$
2/19/2014	0.000122993	0.000122	A_4	$A_3 \rightarrow A_4$
2/20/2014	3.34649E-06	-0.00012	A_3	$A_4 \rightarrow A_3$
2/21/2014	5.80356E-05	5.47E-05	A_4	$A_3 \rightarrow A_4$
2/24/2014	4.81966E-05	-9.8E-06	A_3	$A_4 \rightarrow A_3$
2/25/2014	0.000139631	9.14E-05	A_4	$A_3 \rightarrow A_4$
2/26/2014	0.000169242	2.96E-05	A_4	$A_4 \rightarrow A_4$
2/27/2014	0.000111531	-5.8E-05	A_3	$A_4 \rightarrow A_3$
2/28/2014	0.000472018	0.00036	A_4	$A_3 \rightarrow A_4$

3/3/2014	0.000191485	-0.00028	A_3	$A_4 \rightarrow A_3$
3/4/2014	7.60316E-06	-0.00018	A_3	$A_3 \rightarrow A_3$
3/5/2014	0.00022314	0.000216	A_4	$A_3 \rightarrow A_4$
3/6/2014	1.1759E-05	-0.00021	A_3	$A_4 \rightarrow A_3$
3/7/2014	2.0774E-06	-9.7E-06	A_3	$A_3 \rightarrow A_3$
3/10/2014	1.09368E-05	8.86E-06	A_4	$A_3 \rightarrow A_4$
3/11/2014	1.75498E-05	6.61E-06	A_4	$A_4 \rightarrow A_4$
3/12/2014	1.08292E-05	-6.7E-06	A_3	$A_4 \rightarrow A_3$
3/13/2014	0.000173663	0.000163	A_4	$A_3 \rightarrow A_4$
3/14/2014	0.001041013	0.000867	A_4	$A_4 \rightarrow A_4$
3/17/2014	8.31236E-06	-0.00103	A_2	$A_4 \rightarrow A_2$
3/18/2014	0.000309965	0.000302	A_4	$A_2 \rightarrow A_4$
3/19/2014	8.99435E-05	-0.00022	A_3	$A_4 \rightarrow A_3$
3/20/2014	0.001035903	0.000946	A_4	$A_3 \rightarrow A_4$
3/21/2014	4.15335E-06	-0.00103	A_2	$A_4 \rightarrow A_2$
3/24/2014	8.24723E-06	4.09E-06	A_4	$A_2 \rightarrow A_4$
3/25/2014	0.00013279	0.000125	A_4	$A_4 \rightarrow A_4$
3/26/2014	4.33812E-05	-8.9E-05	A_3	$A_4 \rightarrow A_3$
3/27/2014	4.05645E-06	-3.9E-05	A_3	$A_3 \rightarrow A_3$
3/28/2014	5.42485E-05	5.02E-05	A_4	$A_3 \rightarrow A_4$
4/1/2014	0.000712222	0.000658	A_4	$A_4 \rightarrow A_4$

4/2/2014	8.79708E-06	-0.0007	A_3	$A_4 \rightarrow A_3$
4/3/2014	3.24047E-05	2.36E-05	A_4	$A_3 \rightarrow A_4$
4/4/2014	2.90294E-05	-3.4E-06	A_3	$A_4 \rightarrow A_3$
4/7/2014	0.000443739	0.000415	A_4	$A_3 \rightarrow A_4$
4/8/2014	2.44583E-07	-0.00044	A_3	$A_4 \rightarrow A_3$
4/9/2014	2.75447E-07	3.09E-08	A_4	$A_3 \rightarrow A_4$
4/10/2014	0.001089711	0.001089	A_5	$A_4 \rightarrow A_5$
4/11/2014	0.000246566	-0.00084	A_3	$A_5 \rightarrow A_3$
4/14/2014	9.58736E-05	-0.00015	A_3	$A_3 \rightarrow A_3$
4/15/2014	9.66857E-06	-8.6E-05	A_3	$A_3 \rightarrow A_3$
4/16/2014	1.90597E-06	-7.8E-06	A_3	$A_3 \rightarrow A_3$
4/17/2014	9.33911E-05	9.15E-05	A_4	$A_3 \rightarrow A_4$
4/21/2014	1.66778E-07	-9.3E-05	A_3	$A_4 \rightarrow A_3$
4/22/2014	6.15969E-07	4.49E-07	A_4	$A_3 \rightarrow A_4$
4/23/2014	9.14749E-07	2.99E-07	A_4	$A_4 \rightarrow A_4$
4/24/2014	2.20609E-06	1.29E-06	A_4	$A_4 \rightarrow A_4$
4/25/2014	1.48183E-08	-2.2E-06	A_3	$A_4 \rightarrow A_3$
4/28/2014	0.000374137	0.000374	A_4	$A_3 \rightarrow A_4$
4/29/2014	6.30572E-05	-0.00031	A_3	$A_4 \rightarrow A_3$
4/30/2014	1.4155E-05	-4.9E-05	A_3	$A_3 \rightarrow A_3$
5/2/2014	1.66186E-05	2.46E-06	A_4	$A_3 \rightarrow A_4$

5/5/2014	5.38828E-06	-1.1E-05	A_3	$A_4 \rightarrow A_3$
5/6/2014	2.25034E-06	-3.1E-06	A_3	$A_3 \rightarrow A_3$
5/7/2014	4.69403E-05	4.47E-05	A_4	$A_3 \rightarrow A_4$
5/8/2014	3.48908E-06	-4.3E-05	A_3	$A_4 \rightarrow A_3$
5/9/2014	2.18957E-05	1.84E-05	A_4	$A_3 \rightarrow A_4$
5/12/2014	0.000112511	9.06E-05	A_4	$A_4 \rightarrow A_4$
5/13/2014	3.84755E-06	-0.00011	A_3	$A_4 \rightarrow A_3$
5/14/2014	0.000321413	0.000318	A_4	$A_3 \rightarrow A_4$
5/16/2014	0.000168273	-0.00015	A_3	$A_4 \rightarrow A_3$
5/19/2014	1.55045E-05	-0.00015	A_3	$A_3 \rightarrow A_3$
5/20/2014	0.000615	0.000599	A_4	$A_3 \rightarrow A_4$
5/21/2014	7.02908E-05	-0.00054	A_3	$A_4 \rightarrow A_3$
5/22/2014	0.000126435	5.61E-05	A_4	$A_3 \rightarrow A_4$
5/23/2014	9.06306E-06	-0.00012	A_3	$A_4 \rightarrow A_3$
5/26/2014	1.48402E-07	-8.9E-06	A_3	$A_3 \rightarrow A_3$
5/28/2014	1.83244E-05	1.82E-05	A_4	$A_3 \rightarrow A_4$
5/30/2014	0.000661014	0.000643	A_4	$A_4 \rightarrow A_4$
6/2/2014	1.01699E-05	-0.00065	A_3	$A_4 \rightarrow A_3$
6/3/2014	3.65725E-05	2.64E-05	A_4	$A_3 \rightarrow A_4$
6/4/2014	1.59879E-05	-2.1E-05	A_3	$A_4 \rightarrow A_3$
6/5/2014	5.96251E-06	-1E-05	A_3	$A_3 \rightarrow A_3$

6/6/2014	3.21693E-05	2.62E-05	A_4	$A_3 \rightarrow A_4$
6/9/2014	0.000132457	0.0001	A_4	$A_4 \rightarrow A_4$
6/10/2014	0.000246519	0.000114	A_4	$A_4 \rightarrow A_4$
6/11/2014	3.90127E-05	-0.00021	A_3	$A_4 \rightarrow A_3$
6/12/2014	0.000111127	7.21E-05	A_4	$A_3 \rightarrow A_4$
6/13/2014	2.92297E-07	-0.00011	A_3	$A_4 \rightarrow A_3$
6/16/2014	0.000181605	0.000181	A_4	$A_3 \rightarrow A_4$
6/17/2014	5.66445E-05	-0.00012	A_3	$A_4 \rightarrow A_3$
6/18/2014	2.79117E-05	-2.9E-05	A_3	$A_3 \rightarrow A_3$
6/19/2014	4.78888E-05	2E-05	A_4	$A_3 \rightarrow A_4$
6/20/2014	1.93518E-06	-4.6E-05	A_3	$A_4 \rightarrow A_3$
6/23/2014	4.21104E-08	-1.9E-06	A_3	$A_3 \rightarrow A_3$
6/24/2014	1.38694E-06	1.34E-06	A_4	$A_3 \rightarrow A_4$
6/25/2014	2.255E-05	2.12E-05	A_4	$A_4 \rightarrow A_4$
6/26/2014	6.06082E-05	3.81E-05	A_4	$A_4 \rightarrow A_4$
6/27/2014	5.1763E-05	-8.8E-06	A_3	$A_4 \rightarrow A_3$
6/30/2014	1.85602E-05	-3.3E-05	A_3	$A_3 \rightarrow A_3$
7/1/2014	7.94887E-06	-1.1E-05	A_3	$A_3 \rightarrow A_3$
7/2/2014	0.000115375	0.000107	A_4	$A_3 \rightarrow A_4$
7/3/2014	7.28182E-06	-0.00011	A_3	$A_4 \rightarrow A_3$
7/4/2014	9.3331E-06	2.05E-06	A_4	$A_3 \rightarrow A_4$

7/7/2014	0.000616259	0.000607	A_4	$A_4 \rightarrow A_4$
7/8/2014	2.96806E-05	-0.00059	A_3	$A_4 \rightarrow A_3$
7/10/2014	0.000204167	0.000174	A_4	$A_3 \rightarrow A_4$
7/11/2014	0.000267157	6.3E-05	A_4	$A_4 \rightarrow A_4$
7/14/2014	1.0551E-07	-0.00027	A_3	$A_4 \rightarrow A_3$
7/15/2014	0.000192723	0.000193	A_4	$A_3 \rightarrow A_4$
7/16/2014	5.69664E-05	-0.00014	A_3	$A_4 \rightarrow A_3$
7/17/2014	0.000151141	9.42E-05	A_4	$A_3 \rightarrow A_4$
7/18/2014	4.87155E-05	-0.0001	A_3	$A_4 \rightarrow A_3$
7/21/2014	0.000128758	8E-05	A_4	$A_3 \rightarrow A_4$
7/22/2014	6.4873E-05	-6.4E-05	A_3	$A_4 \rightarrow A_3$
7/23/2014	1.64384E-07	-6.5E-05	A_3	$A_3 \rightarrow A_3$
7/24/2014	2.45756E-06	2.29E-06	A_4	$A_3 \rightarrow A_4$
7/25/2014	1.41336E-05	1.17E-05	A_4	$A_4 \rightarrow A_4$
8/4/2014	0.000247307	0.000233	A_4	$A_4 \rightarrow A_4$
8/5/2014	3.20988E-05	-0.00022	A_3	$A_4 \rightarrow A_3$
8/6/2014	0.000186684	0.000155	A_4	$A_3 \rightarrow A_4$
8/7/2014	2.68403E-05	-0.00016	A_3	$A_4 \rightarrow A_3$
8/8/2014	3.42609E-05	7.42E-06	A_4	$A_3 \rightarrow A_4$
8/11/2014	0.00019976	0.000165	A_4	$A_4 \rightarrow A_4$
8/12/2014	2.09512E-05	-0.00018	A_3	$A_4 \rightarrow A_3$

8/13/2014	9.40606E-05	7.31E-05	A_4	$A_3 \rightarrow A_4$
8/14/2014	1.34693E-05	-8.1E-05	A_3	$A_4 \rightarrow A_3$
8/15/2014	8.53525E-06	-4.9E-06	A_3	$A_3 \rightarrow A_3$
8/18/2014	5.82298E-06	-2.7E-06	A_3	$A_3 \rightarrow A_3$
8/19/2014	3.69934E-06	-2.1E-06	A_3	$A_3 \rightarrow A_3$
8/20/2014	4.39625E-05	4.03E-05	A_4	$A_3 \rightarrow A_4$
8/21/2014	3.85183E-06	-4E-05	A_3	$A_4 \rightarrow A_3$
8/22/2014	2.25918E-05	1.87E-05	A_4	$A_3 \rightarrow A_4$
8/25/2014	1.43234E-05	-8.3E-06	A_3	$A_4 \rightarrow A_3$
8/26/2014	4.99706E-05	3.56E-05	A_4	$A_3 \rightarrow A_4$
8/27/2014	1.38235E-05	-3.6E-05	A_3	$A_4 \rightarrow A_3$
8/28/2014	1.13286E-05	-2.5E-06	A_3	$A_3 \rightarrow A_3$
8/29/2014	0.000240228	0.000229	A_4	$A_3 \rightarrow A_4$
9/1/2014	0.00015557	-8.5E-05	A_3	$A_4 \rightarrow A_3$
9/2/2014	2.91913E-05	-0.00013	A_3	$A_3 \rightarrow A_3$
9/3/2014	1.95497E-05	-9.6E-06	A_3	$A_3 \rightarrow A_3$
9/4/2014	3.41152E-05	1.46E-05	A_4	$A_3 \rightarrow A_4$
9/5/2014	1.98581E-06	-3.2E-05	A_3	$A_4 \rightarrow A_3$
9/8/2014	5.9746E-05	5.78E-05	A_4	$A_3 \rightarrow A_4$
9/9/2014	0.00020646	0.000147	A_4	$A_4 \rightarrow A_4$
9/10/2014	0.000183735	-2.3E-05	A_3	$A_4 \rightarrow A_3$

9/11/2014	4.88164E-05	-0.00013	A_3	$A_3 \rightarrow A_3$
9/12/2014	4.15302E-05	-7.3E-06	A_3	$A_3 \rightarrow A_3$
9/15/2014	8.52407E-06	-3.3E-05	A_3	$A_3 \rightarrow A_3$
9/16/2014	2.39663E-06	-6.1E-06	A_3	$A_3 \rightarrow A_3$
9/17/2014	0.000152163	0.00015	A_4	$A_3 \rightarrow A_4$
9/18/2014	2.99951E-05	-0.00012	A_3	$A_4 \rightarrow A_3$
9/19/2014	7.18844E-06	-2.3E-05	A_3	$A_3 \rightarrow A_3$
9/22/2014	4.19444E-06	-3E-06	A_3	$A_3 \rightarrow A_3$
9/23/2014	6.94859E-05	6.53E-05	A_4	$A_3 \rightarrow A_4$
9/24/2014	2.49598E-05	-4.5E-05	A_3	$A_4 \rightarrow A_3$
9/25/2014	1.13373E-05	-1.4E-05	A_3	$A_3 \rightarrow A_3$
9/26/2014	0.000130332	0.000119	A_4	$A_3 \rightarrow A_4$
9/29/2014	4.85634E-06	-0.00013	A_3	$A_4 \rightarrow A_3$
9/30/2014	5.61537E-06	7.59E-07	A_4	$A_3 \rightarrow A_4$
10/1/2014	7.6003E-05	7.04E-05	A_4	$A_4 \rightarrow A_4$
10/2/2014	0.000906326	0.00083	A_4	$A_4 \rightarrow A_4$
10/3/2014	1.87175E-05	-0.00089	A_3	$A_4 \rightarrow A_3$
10/6/2014	7.14517E-05	5.27E-05	A_4	$A_3 \rightarrow A_4$
10/7/2014	3.50824E-05	-3.6E-05	A_3	$A_4 \rightarrow A_3$
10/8/2014	0.000316778	0.000282	A_4	$A_3 \rightarrow A_4$
10/9/2014	3.70418E-05	-0.00028	A_3	$A_4 \rightarrow A_3$

10/10/2014	9.46247E-05	5.76E-05	A_4	$A_3 \rightarrow A_4$
10/13/2014	0.000227175	0.000133	A_4	$A_4 \rightarrow A_4$
10/14/2014	2.89711E-05	-0.0002	A_3	$A_4 \rightarrow A_3$
10/15/2014	7.77822E-06	-2.1E-05	A_3	$A_3 \rightarrow A_3$
10/16/2014	7.17421E-06	-6E-07	A_3	$A_3 \rightarrow A_3$
10/17/2014	0.000334925	0.000328	A_4	$A_3 \rightarrow A_4$
10/20/2014	1.3456E-06	-0.00033	A_3	$A_4 \rightarrow A_3$
10/21/2014	1.89798E-06	5.52E-07	A_4	$A_3 \rightarrow A_4$
10/22/2014	0.000126011	0.000124	A_4	$A_4 \rightarrow A_4$
10/23/2014	1.83814E-05	-0.00011	A_3	$A_4 \rightarrow A_3$
10/24/2014	5.01035E-05	3.17E-05	A_4	$A_3 \rightarrow A_4$
10/27/2014	0.000109745	5.96E-05	A_4	$A_4 \rightarrow A_4$
10/28/2014	7.76637E-05	-3.2E-05	A_3	$A_4 \rightarrow A_3$
10/29/2014	0.000509431	0.000432	A_4	$A_3 \rightarrow A_4$
10/30/2014	6.26459E-06	-0.0005	A_3	$A_4 \rightarrow A_3$
10/31/2014	2.10259E-05	1.48E-05	A_4	$A_3 \rightarrow A_4$
11/3/2014	3.33315E-06	-1.8E-05	A_3	$A_4 \rightarrow A_3$
11/4/2014	7.75902E-05	7.43E-05	A_4	$A_3 \rightarrow A_4$
11/5/2014	3.6923E-06	-7.4E-05	A_3	$A_4 \rightarrow A_3$
11/6/2014	2.27176E-05	1.9E-05	A_4	$A_3 \rightarrow A_4$
11/7/2014	0.000172168	0.000149	A_4	$A_4 \rightarrow A_4$

11/10/2014	4.21795E-05	-0.00013	A_3	$A_4 \rightarrow A_3$
11/11/2014	0.000325923	0.000284	A_4	$A_3 \rightarrow A_4$
11/12/2014	4.44018E-06	-0.00032	A_3	$A_4 \rightarrow A_3$
11/13/2014	4.19618E-06	-2.4E-07	A_3	$A_3 \rightarrow A_3$
11/14/2014	3.87652E-06	-3.2E-07	A_3	$A_3 \rightarrow A_3$
11/17/2014	1.77679E-05	1.39E-05	A_4	$A_3 \rightarrow A_4$
11/18/2014	0.000121982	0.000104	A_4	$A_4 \rightarrow A_4$
11/19/2014	1.98351E-05	-0.0001	A_3	$A_4 \rightarrow A_3$
11/20/2014	7.23226E-05	5.25E-05	A_4	$A_3 \rightarrow A_4$
11/21/2014	7.06559E-05	-1.7E-06	A_3	$A_4 \rightarrow A_3$
11/24/2014	0.000186958	0.000116	A_4	$A_3 \rightarrow A_4$
11/25/2014	0.000102751	-8.4E-05	A_3	$A_4 \rightarrow A_3$
11/26/2014	9.14669E-06	-9.4E-05	A_3	$A_3 \rightarrow A_3$
11/27/2014	3.47482E-05	2.56E-05	A_4	$A_3 \rightarrow A_4$
11/28/2014	1.19412E-05	-2.3E-05	A_3	$A_4 \rightarrow A_3$
12/1/2014	1.42818E-05	2.34E-06	A_4	$A_3 \rightarrow A_4$
12/2/2014	1.77642E-06	-1.3E-05	A_3	$A_4 \rightarrow A_3$
12/3/2014	4.13526E-05	3.96E-05	A_4	$A_3 \rightarrow A_4$
12/4/2014	5.82012E-05	1.68E-05	A_4	$A_4 \rightarrow A_4$
12/5/2014	5.97961E-06	-5.2E-05	A_3	$A_4 \rightarrow A_3$
12/8/2014	0.000133118	0.000127	A_4	$A_3 \rightarrow A_4$

12/9/2014	5.21141E-06	-0.00013	A_3	$A_4 \rightarrow A_3$
12/10/2014	3.77781E-05	3.26E-05	A_4	$A_3 \rightarrow A_4$
12/11/2014	3.14266E-05	-6.4E-06	A_3	$A_4 \rightarrow A_3$
12/12/2014	7.25491E-07	-3.1E-05	A_3	$A_3 \rightarrow A_3$
12/15/2014	7.0248E-05	6.95E-05	A_4	$A_3 \rightarrow A_4$
12/16/2014	0.000278778	0.000209	A_4	$A_4 \rightarrow A_4$
12/17/2014	6.84006E-06	-0.00027	A_3	$A_4 \rightarrow A_3$
12/18/2014	0.000407158	0.0004	A_4	$A_3 \rightarrow A_4$
12/19/2014	1.47172E-05	-0.00039	A_3	$A_4 \rightarrow A_3$
12/29/2014	9.12261E-05	7.65E-05	A_4	$A_3 \rightarrow A_4$
12/30/2014	9.1153E-05	-7.3E-08	A_3	$A_4 \rightarrow A_3$
12/31/2014	1.39645E-07	-9.1E-05	A_3	$A_3 \rightarrow A_3$
1/2/2015	3.47381E-05	3.46E-05	A_4	$A_3 \rightarrow A_4$
1/5/2015	4.64692E-05	1.17E-05	A_4	$A_4 \rightarrow A_4$
1/6/2015	0.00013461	8.81E-05	A_4	$A_4 \rightarrow A_4$
1/7/2015	0.000100598	-3.4E-05	A_3	$A_4 \rightarrow A_3$
1/8/2015	6.36735E-08	-0.0001	A_3	$A_3 \rightarrow A_3$
1/9/2015	2.20195E-09	-6.1E-08	A_3	$A_3 \rightarrow A_3$
1/12/2015	4.26037E-05	4.26E-05	A_4	$A_3 \rightarrow A_4$
1/13/2015	0.000150439	0.000108	A_4	$A_4 \rightarrow A_4$
1/14/2015	0.000229558	7.91E-05	A_4	$A_4 \rightarrow A_4$

1/15/2015	6.45493E-05	-0.00017	A_3	$A_4 \rightarrow A_3$
1/16/2015	5.4127E-05	-1E-05	A_3	$A_3 \rightarrow A_3$
1/19/2015	2.39999E-06	-5.2E-05	A_3	$A_3 \rightarrow A_3$
1/20/2015	0.000121497	0.000119	A_4	$A_3 \rightarrow A_4$
1/21/2015	0.000355651	0.000234	A_4	$A_4 \rightarrow A_4$
1/22/2015	8.92825E-05	-0.00027	A_3	$A_4 \rightarrow A_3$
1/23/2015	0.00014895	5.97E-05	A_4	$A_3 \rightarrow A_4$
1/26/2015	0.000194018	4.51E-05	A_4	$A_4 \rightarrow A_4$
1/27/2015	1.72435E-05	-0.00018	A_3	$A_4 \rightarrow A_3$
1/28/2015	1.21052E-06	-1.6E-05	A_3	$A_3 \rightarrow A_3$
1/29/2015	3.12646E-05	3.01E-05	A_4	$A_3 \rightarrow A_4$
1/30/2015	3.02088E-05	-1.1E-06	A_3	$A_4 \rightarrow A_3$
2/2/2015	5.53121E-05	2.51E-05	A_4	$A_3 \rightarrow A_4$
2/3/2015	1.54566E-05	-4E-05	A_3	$A_4 \rightarrow A_3$
2/4/2015	4.00121E-05	2.46E-05	A_4	$A_3 \rightarrow A_4$
2/5/2015	0.000155348	0.000115	A_4	$A_4 \rightarrow A_4$
2/6/2015	0.000264375	0.000109	A_4	$A_4 \rightarrow A_4$
2/9/2015	7.25078E-08	-0.00026	A_3	$A_4 \rightarrow A_3$
2/10/2015	4.45162E-05	4.44E-05	A_4	$A_3 \rightarrow A_4$
2/11/2015	7.81412E-05	3.36E-05	A_4	$A_4 \rightarrow A_4$
2/12/2015	6.54072E-06	-7.2E-05	A_3	$A_4 \rightarrow A_3$

2/13/2015	9.84992E-05	9.2E-05	A_4	$A_3 \rightarrow A_4$
2/16/2015	0.000245653	0.000147	A_4	$A_4 \rightarrow A_4$
2/17/2015	4.80112E-05	-0.0002	A_3	$A_4 \rightarrow A_3$
2/18/2015	4.95932E-05	1.58E-06	A_4	$A_3 \rightarrow A_4$
2/19/2015	2.33088E-06	-4.7E-05	A_3	$A_4 \rightarrow A_3$
2/20/2015	1.55602E-05	1.32E-05	A_4	$A_3 \rightarrow A_4$
2/23/2015	2.42226E-05	8.66E-06	A_4	$A_4 \rightarrow A_4$
2/24/2015	7.24114E-06	-1.7E-05	A_3	$A_4 \rightarrow A_3$
2/25/2015	8.7349E-05	8.01E-05	A_4	$A_3 \rightarrow A_4$
2/26/2015	1.46824E-07	-8.7E-05	A_3	$A_4 \rightarrow A_3$
2/27/2015	4.87649E-05	4.86E-05	A_4	$A_3 \rightarrow A_4$
3/2/2015	9.8521E-05	4.98E-05	A_4	$A_4 \rightarrow A_4$
3/3/2015	4.92662E-06	-9.4E-05	A_3	$A_4 \rightarrow A_3$
3/4/2015	0.000100129	9.52E-05	A_4	$A_3 \rightarrow A_4$
3/5/2015	6.89259E-07	-9.9E-05	A_3	$A_4 \rightarrow A_3$
3/6/2015	0.000319947	0.000319	A_4	$A_3 \rightarrow A_4$
3/9/2015	0.000220672	-9.9E-05	A_3	$A_4 \rightarrow A_3$
3/10/2015	2.48073E-06	-0.00022	A_3	$A_3 \rightarrow A_3$
3/11/2015	3.12135E-05	2.87E-05	A_4	$A_3 \rightarrow A_4$
3/12/2015	9.30043E-06	-2.2E-05	A_3	$A_4 \rightarrow A_3$
3/13/2015	8.43123E-10	-9.3E-06	A_3	$A_3 \rightarrow A_3$

3/16/2015	3.10962E-06	3.11E-06	A_4	$A_3 \rightarrow A_4$
3/17/2015	3.92632E-07	-2.7E-06	A_3	$A_4 \rightarrow A_3$
3/18/2015	7.69732E-05	7.66E-05	A_4	$A_3 \rightarrow A_4$
3/19/2015	8.60501E-05	9.08E-06	A_4	$A_4 \rightarrow A_4$
3/20/2015	1.99085E-05	-6.6E-05	A_3	$A_4 \rightarrow A_3$
3/23/2015	3.17906E-06	-1.7E-05	A_3	$A_3 \rightarrow A_3$
3/24/2015	2.55066E-06	-6.3E-07	A_3	$A_3 \rightarrow A_3$
3/25/2015	0.000223384	0.000221	A_4	$A_3 \rightarrow A_4$
3/26/2015	0.00011647	-0.00011	A_3	$A_4 \rightarrow A_3$
3/27/2015	8.82726E-05	-2.8E-05	A_3	$A_3 \rightarrow A_3$
3/30/2015	0.000178529	9.03E-05	A_4	$A_3 \rightarrow A_4$
3/31/2015	9.28484E-05	-8.6E-05	A_3	$A_4 \rightarrow A_3$
4/1/2015	0.00015084	5.8E-05	A_4	$A_3 \rightarrow A_4$
4/2/2015	1.41494E-06	-0.00015	A_3	$A_4 \rightarrow A_3$
4/6/2015	4.37799E-05	4.24E-05	A_4	$A_3 \rightarrow A_4$
4/7/2015	6.53528E-05	2.16E-05	A_4	$A_4 \rightarrow A_4$
4/8/2015	0.000110681	4.53E-05	A_4	$A_4 \rightarrow A_4$
4/9/2015	3.60683E-05	-7.5E-05	A_3	$A_4 \rightarrow A_3$
4/10/2015	2.74809E-06	-3.3E-05	A_3	$A_3 \rightarrow A_3$
4/13/2015	5.57196E-05	5.3E-05	A_4	$A_3 \rightarrow A_4$
4/14/2015	6.76379E-05	1.19E-05	A_4	$A_4 \rightarrow A_4$

4/15/2015	3.59271E-08	-6.8E-05	A_3	$A_4 \rightarrow A_3$
4/16/2015	2.83407E-06	2.8E-06	A_4	$A_3 \rightarrow A_4$
4/17/2015	5.38844E-06	2.55E-06	A_4	$A_4 \rightarrow A_4$
4/20/2015	5.15549E-05	4.62E-05	A_4	$A_4 \rightarrow A_4$
4/21/2015	0.000373723	0.000322	A_4	$A_4 \rightarrow A_4$
4/22/2015	7.93378E-06	-0.00037	A_3	$A_4 \rightarrow A_3$
4/23/2015	9.68933E-06	1.76E-06	A_4	$A_3 \rightarrow A_4$
4/24/2015	6.49578E-05	5.53E-05	A_4	$A_4 \rightarrow A_4$
4/27/2015	0.001218552	0.001154	A_5	$A_4 \rightarrow A_5$
4/28/2015	1.91023E-05	-0.0012	A_2	$A_5 \rightarrow A_2$
4/29/2015	0.001339569	0.00132	A_5	$A_2 \rightarrow A_5$
4/30/2015	0.000335686	-0.001	A_2	$A_5 \rightarrow A_2$
5/1/2015	1.81253E-07	-0.00034	A_3	$A_2 \rightarrow A_3$
5/4/2015	0.000325271	0.000325	A_4	$A_3 \rightarrow A_4$
5/5/2015	7.49039E-05	-0.00025	A_4	$A_4 \rightarrow A_3$
5/6/2015	7.8455E-05	3.55E-06	A_4	$A_3 \rightarrow A_4$
5/7/2015	5.45627E-05	-2.4E-05	A_3	$A_4 \rightarrow A_3$
5/8/2015	0.000271762	0.000217	A_4	$A_3 \rightarrow A_4$
5/11/2015	7.68447E-09	-0.00027	A_3	$A_4 \rightarrow A_3$
5/12/2015	1.72495E-07	1.65E-07	A_4	$A_3 \rightarrow A_4$
5/13/2015	0.000214155	0.000214	A_4	$A_4 \rightarrow A_4$

5/15/2015	1.6021E-05	-0.0002	A_3	$A_4 \rightarrow A_3$
5/18/2015	1.92849E-07	-1.6E-05	A_3	$A_3 \rightarrow A_3$
5/19/2015	3.59814E-05	3.58E-05	A_4	$A_3 \rightarrow A_4$
5/20/2015	2.18564E-05	-1.4E-05	A_3	$A_4 \rightarrow A_3$
5/21/2015	1.27319E-05	-9.1E-06	A_3	$A_3 \rightarrow A_3$
5/22/2015	1.735E-08	-1.3E-05	A_3	$A_3 \rightarrow A_3$
5/25/2015	6.10475E-08	4.37E-08	A_4	$A_3 \rightarrow A_4$
5/26/2015	0.000119728	0.00012	A_4	$A_4 \rightarrow A_4$
5/27/2015	0.000257354	0.000138	A_4	$A_4 \rightarrow A_4$
5/28/2015	7.84989E-07	-0.00026	A_3	$A_4 \rightarrow A_3$
5/29/2015	0.000138965	0.000138	A_4	$A_3 \rightarrow A_4$
6/1/2015	4.55083E-06	-0.00013	A_3	$A_4 \rightarrow A_3$
6/3/2015	0.000140685	0.000136	A_4	$A_3 \rightarrow A_4$
6/4/2015	0.000130348	-1E-05	A_3	$A_4 \rightarrow A_3$
6/5/2015	3.36581E-07	-0.00013	A_3	$A_3 \rightarrow A_3$
6/8/2015	0.000342427	0.000342	A_4	$A_3 \rightarrow A_4$
6/9/2015	0.000709138	0.000367	A_4	$A_4 \rightarrow A_4$
6/10/2015	0.000188939	-0.00052	A_3	$A_4 \rightarrow A_3$
6/11/2015	9.61244E-07	-0.00019	A_3	$A_3 \rightarrow A_3$
6/12/2015	1.6033E-05	1.51E-05	A_4	$A_3 \rightarrow A_4$
6/15/2015	0.000631568	0.000616	A_4	$A_4 \rightarrow A_4$

6/16/2015	6.07733E-05	-0.00057	A_3	$A_4 \rightarrow A_3$
6/17/2015	0.000133147	7.24E-05	A_4	$A_3 \rightarrow A_4$
6/18/2015	1.57471E-05	-0.00012	A_3	$A_4 \rightarrow A_3$
6/19/2015	1.15992E-05	-4.1E-06	A_3	$A_3 \rightarrow A_3$
6/22/2015	4.41454E-05	3.25E-05	A_4	$A_3 \rightarrow A_4$
6/23/2015	4.17332E-05	-2.4E-06	A_3	$A_4 \rightarrow A_3$
6/24/2015	0.000208045	0.000166	A_4	$A_3 \rightarrow A_4$
6/25/2015	0.000110705	-9.7E-05	A_3	$A_4 \rightarrow A_3$
6/26/2015	4.21881E-06	-0.00011	A_3	$A_3 \rightarrow A_3$
6/29/2015	6.002E-05	5.58E-05	A_4	$A_3 \rightarrow A_4$
6/30/2015	2.8759E-05	-3.1E-05	A_3	$A_4 \rightarrow A_3$
7/1/2015	1.23779E-05	-1.6E-05	A_3	$A_3 \rightarrow A_3$
7/2/2015	0.000118092	0.000106	A_4	$A_3 \rightarrow A_4$
7/3/2015	0.000178736	6.06E-05	A_4	$A_4 \rightarrow A_4$
7/6/2015	0.000212914	3.42E-05	A_4	$A_4 \rightarrow A_4$
7/7/2015	1.98946E-05	-0.00019	A_3	$A_4 \rightarrow A_3$
7/8/2015	3.01827E-05	1.03E-05	A_4	$A_3 \rightarrow A_4$
7/9/2015	0.000172851	0.000143	A_4	$A_4 \rightarrow A_4$
7/10/2015	1.97556E-05	-0.00015	A_3	$A_4 \rightarrow A_3$
7/13/2015	7.80906E-05	5.83E-05	A_4	$A_3 \rightarrow A_4$
7/14/2015	1.35916E-07	-7.8E-05	A_3	$A_4 \rightarrow A_3$

7/15/2015	8.98467E-06	8.85E-06	A_4	$A_3 \rightarrow A_4$
7/22/2015	6.58105E-05	5.68E-05	A_4	$A_4 \rightarrow A_4$
7/23/2015	9.4724E-06	-5.6E-05	A_3	$A_4 \rightarrow A_3$
7/24/2015	0.000213565	0.000204	A_4	$A_3 \rightarrow A_4$
7/27/2015	0.000487822	0.000274	A_4	$A_4 \rightarrow A_4$
7/28/2015	3.42504E-05	-0.00045	A_3	$A_4 \rightarrow A_3$
7/29/2015	4.56857E-07	-3.4E-05	A_3	$A_3 \rightarrow A_3$
7/30/2015	6.09736E-06	5.64E-06	A_4	$A_3 \rightarrow A_4$
7/31/2015	0.000408531	0.000402	A_4	$A_4 \rightarrow A_4$
8/3/2015	6.12022E-05	-0.00035	A_3	$A_4 \rightarrow A_3$
8/4/2015	2.10602E-05	-4E-05	A_3	$A_3 \rightarrow A_3$
8/5/2015	0.000316256	0.000295	A_4	$A_3 \rightarrow A_4$
8/6/2015	0.000245818	-7E-05	A_3	$A_4 \rightarrow A_3$
8/7/2015	2.46936E-05	-0.00022	A_3	$A_3 \rightarrow A_3$
8/10/2015	8.53407E-06	-1.6E-05	A_3	$A_3 \rightarrow A_3$
8/11/2015	0.001228491	0.00122	A_5	$A_3 \rightarrow A_5$
8/12/2015	0.001398062	0.00017	A_4	$A_5 \rightarrow A_4$
8/13/2015	0.001145862	-0.00025	A_3	$A_4 \rightarrow A_3$
8/14/2015	2.49766E-06	-0.00114	A_2	$A_3 \rightarrow A_2$
8/18/2015	0.000355186	0.000353	A_4	$A_2 \rightarrow A_4$
8/19/2015	2.67874E-05	-0.00033	A_3	$A_4 \rightarrow A_3$

8/20/2015	5.10607E-05	2.43E-05	A_4	$A_3 \rightarrow A_4$
8/21/2015	0.00084176	0.000791	A_4	$A_4 \rightarrow A_4$
8/24/2015	0.002380466	0.001539	A_5	$A_4 \rightarrow A_5$
8/25/2015	0.000344281	-0.00204	A_1	$A_5 \rightarrow A_1$
8/26/2015	3.64097E-05	-0.00031	A_3	$A_1 \rightarrow A_3$
8/27/2015	0.002835428	0.002799	A_6	$A_3 \rightarrow A_6$
8/28/2015	1.14222E-05	-0.00282	A_1	$A_6 \rightarrow A_1$
8/31/2015	0.000408488	0.000397	A_4	$A_1 \rightarrow A_4$
9/1/2015	0.000342785	-6.6E-05	A_3	$A_4 \rightarrow A_3$
9/2/2015	4.56303E-06	-0.00034	A_3	$A_3 \rightarrow A_3$
9/3/2015	0.000259007	0.000254	A_4	$A_3 \rightarrow A_4$
9/4/2015	2.27063E-05	-0.00024	A_3	$A_4 \rightarrow A_3$
9/7/2015	0.001650221	0.001628	A_5	$A_3 \rightarrow A_5$
9/8/2015	2.62465E-05	-0.00162	A_2	$A_5 \rightarrow A_2$
9/9/2015	0.000169514	0.000143	A_4	$A_2 \rightarrow A_4$
9/10/2015	1.27425E-07	-0.00017	A_3	$A_4 \rightarrow A_3$
9/11/2015	0.000198393	0.000198	A_4	$A_3 \rightarrow A_4$
9/14/2015	0.000165377	-3.3E-05	A_3	$A_4 \rightarrow A_3$
9/15/2015	0.000372563	0.000207	A_4	$A_3 \rightarrow A_4$
9/16/2015	1.73041E-05	-0.00036	A_3	$A_4 \rightarrow A_3$
9/17/2015	0.000196189	0.000179	A_4	$A_3 \rightarrow A_4$

9/18/2015	1.38906E-06	-0.00019	A_3	$A_4 \rightarrow A_3$
9/21/2015	9.44085E-06	8.05E-06	A_4	$A_3 \rightarrow A_4$
9/22/2015	0.000117561	0.000108	A_4	$A_4 \rightarrow A_4$
9/23/2015	0.000650605	0.000533	A_4	$A_4 \rightarrow A_4$
9/25/2015	6.33144E-05	-0.00059	A_3	$A_4 \rightarrow A_3$
9/28/2015	0.000805864	0.000743	A_4	$A_3 \rightarrow A_4$
9/29/2015	0.00041816	-0.00039	A_3	$A_4 \rightarrow A_3$
9/30/2015	4.92414E-06	-0.00041	A_3	$A_3 \rightarrow A_3$
10/1/2015	9.54268E-05	9.05E-05	A_4	$A_3 \rightarrow A_4$
10/2/2015	0.000205338	0.00011	A_4	$A_4 \rightarrow A_4$
10/5/2015	0.001663441	0.001458	A_5	$A_4 \rightarrow A_5$
10/6/2015	0.001313567	-0.00035	A_3	$A_5 \rightarrow A_3$
10/7/2015	7.12661E-05	-0.00124	A_2	$A_3 \rightarrow A_2$
10/8/2015	2.72072E-06	-6.9E-05	A_3	$A_2 \rightarrow A_3$
10/9/2015	0.000744462	0.000742	A_4	$A_3 \rightarrow A_4$
10/12/2015	4.56053E-05	-0.0007	A_3	$A_4 \rightarrow A_3$
10/13/2015	0.001763892	0.001718	A_5	$A_3 \rightarrow A_5$
10/15/2015	0.000185487	-0.00158	A_2	$A_5 \rightarrow A_2$
10/16/2015	2.37968E-05	-0.00016	A_3	$A_2 \rightarrow A_3$
10/19/2015	0.000160935	0.000137	A_4	$A_3 \rightarrow A_4$
10/20/2015	6.34695E-06	-0.00015	A_3	$A_4 \rightarrow A_3$

10/21/2015	5.11078E-05	4.48E-05	A_4	$A_3 \rightarrow A_4$
10/22/2015	6.12338E-05	1.01E-05	A_4	$A_4 \rightarrow A_4$
10/23/2015	0.000219144	0.000158	A_4	$A_4 \rightarrow A_4$
10/26/2015	3.75738E-05	-0.00018	A_3	$A_4 \rightarrow A_3$
10/27/2015	2.54393E-05	-1.2E-05	A_3	$A_3 \rightarrow A_3$
10/28/2015	0.000216885	0.000191	A_4	$A_3 \rightarrow A_4$
10/29/2015	0.001488008	0.001271	A_5	$A_4 \rightarrow A_5$
10/30/2015	3.89465E-06	-0.00148	A_2	$A_5 \rightarrow A_2$
11/2/2015	0.00012832	0.000124	A_4	$A_2 \rightarrow A_4$
11/3/2015	3.80101E-05	-9E-05	A_3	$A_4 \rightarrow A_3$
11/4/2015	0.000329688	0.000292	A_4	$A_3 \rightarrow A_4$
11/5/2015	5.59519E-05	-0.00027	A_3	$A_4 \rightarrow A_3$
11/6/2015	3.16382E-06	-5.3E-05	A_3	$A_3 \rightarrow A_3$
11/9/2015	0.000353491	0.00035	A_4	$A_3 \rightarrow A_4$
11/10/2015	0.000263025	-9E-05	A_3	$A_4 \rightarrow A_3$
11/11/2015	1.94718E-05	-0.00024	A_3	$A_3 \rightarrow A_3$
11/12/2015	3.52227E-05	1.58E-05	A_4	$A_3 \rightarrow A_4$
11/13/2015	5.07569E-05	1.55E-05	A_4	$A_4 \rightarrow A_4$
11/16/2015	9.63545E-05	4.56E-05	A_4	$A_4 \rightarrow A_4$
11/17/2015	0.000163408	6.71E-05	A_4	$A_4 \rightarrow A_4$
11/18/2015	6.91088E-05	-9.4E-05	A_3	$A_4 \rightarrow A_3$

11/19/2015	1.7758E-05	-5.1E-05	A_3	$A_3 \rightarrow A_3$
11/20/2015	0.000199163	0.000181	A_4	$A_3 \rightarrow A_4$
11/23/2015	0.000195394	-3.8E-06	A_3	$A_4 \rightarrow A_3$
11/24/2015	6.37335E-07	-0.00019	A_3	$A_3 \rightarrow A_3$
11/25/2015	7.69336E-05	7.63E-05	A_4	$A_3 \rightarrow A_4$
11/26/2015	7.98999E-06	-6.9E-05	A_3	$A_4 \rightarrow A_3$
11/27/2015	1.7531E-06	-6.2E-06	A_3	$A_3 \rightarrow A_3$
11/30/2015	0.00118917	0.001187	A_5	$A_3 \rightarrow A_5$
12/1/2015	0.001005986	-0.00018	A_3	$A_5 \rightarrow A_3$
12/2/2015	4.07442E-06	-0.001	A_2	$A_3 \rightarrow A_2$
12/3/2015	1.53035E-05	1.12E-05	A_4	$A_2 \rightarrow A_4$
12/4/2015	9.37739E-06	-5.9E-06	A_3	$A_4 \rightarrow A_3$
12/7/2015	2.07897E-05	1.14E-05	A_4	$A_3 \rightarrow A_4$
12/8/2015	0.000531737	0.000511	A_4	$A_4 \rightarrow A_4$
12/10/2015	4.91982E-05	-0.00048	A_3	$A_4 \rightarrow A_3$
12/11/2015	0.000501697	0.000452	A_4	$A_3 \rightarrow A_4$
12/14/2015	1.66574E-06	-0.0005	A_3	$A_4 \rightarrow A_3$
12/15/2015	0.000160394	0.000159	A_4	$A_3 \rightarrow A_4$
12/16/2015	0.000232478	7.21E-05	A_4	$A_4 \rightarrow A_4$
12/17/2015	0.000877672	0.000645	A_4	$A_4 \rightarrow A_4$
12/18/2015	0.000370511	-0.00051	A_3	$A_4 \rightarrow A_3$

12/21/2015	5.45297E-05	-0.00032	A_3	$A_3 \rightarrow A_3$
12/22/2015	9.0135E-05	3.56E-05	A_4	$A_3 \rightarrow A_4$
12/23/2015	3.38789E-05	-5.6E-05	A_3	$A_4 \rightarrow A_3$
12/28/2015	5.64369E-05	2.26E-05	A_4	$A_3 \rightarrow A_4$
12/29/2015	2.0622E-05	-3.6E-05	A_3	$A_4 \rightarrow A_3$
12/30/2015	3.54708E-05	1.48E-05	A_4	$A_3 \rightarrow A_4$
1/4/2016	0.000320321	0.000285	A_4	$A_4 \rightarrow A_4$
1/5/2016	8.35414E-05	-0.00024	A_3	$A_4 \rightarrow A_3$
1/6/2016	0.000656784	0.000573	A_4	$A_3 \rightarrow A_4$
1/7/2016	0.000516025	-0.00014	A_3	$A_4 \rightarrow A_3$
1/8/2016	7.42844E-06	-0.00051	A_3	$A_3 \rightarrow A_3$
1/11/2016	0.000417598	0.00041	A_4	$A_3 \rightarrow A_4$
1/12/2016	0.0001874	-0.00023	A_3	$A_4 \rightarrow A_3$
1/13/2016	0.0001006	-8.7E-05	A_3	$A_3 \rightarrow A_3$
1/14/2016	0.000220543	0.00012	A_4	$A_3 \rightarrow A_4$
1/15/2016	4.87858E-06	-0.00022	A_3	$A_4 \rightarrow A_3$
1/18/2016	0.000121667	0.000117	A_4	$A_3 \rightarrow A_4$
1/19/2016	4.75255E-05	-7.4E-05	A_3	$A_4 \rightarrow A_3$
1/20/2016	0.000255686	0.000208	A_4	$A_3 \rightarrow A_4$
1/21/2016	7.97809E-06	-0.00025	A_3	$A_4 \rightarrow A_3$
1/22/2016	0.000254471	0.000246	A_4	$A_3 \rightarrow A_4$

1/25/2016	4.18244E-05	-0.00021	A_3	$A_4 \rightarrow A_3$
1/26/2016	1.09757E-06	-4.1E-05	A_3	$A_3 \rightarrow A_3$
1/27/2016	0.000354667	0.000354	A_4	$A_3 \rightarrow A_4$
1/28/2016	2.29796E-05	-0.00033	A_3	$A_4 \rightarrow A_3$
1/29/2016	6.60159E-05	4.3E-05	A_4	$A_3 \rightarrow A_4$
2/1/2016	7.36767E-07	-6.5E-05	A_3	$A_4 \rightarrow A_3$
2/2/2016	0.000134784	0.000134	A_4	$A_3 \rightarrow A_4$
2/3/2016	0.000133972	-8.1E-07	A_3	$A_4 \rightarrow A_3$
2/4/2016	0.000367544	0.000234	A_4	$A_3 \rightarrow A_4$
2/5/2016	0.001020223	0.000653	A_4	$A_4 \rightarrow A_4$
2/9/2016	7.85695E-05	-0.00094	A_3	$A_4 \rightarrow A_3$
2/10/2016	1.47305E-06	-7.7E-05	A_3	$A_3 \rightarrow A_3$
2/11/2016	0.00034523	0.000344	A_4	$A_3 \rightarrow A_4$
2/12/2016	0.000475731	0.000131	A_4	$A_4 \rightarrow A_4$
2/15/2016	2.91736E-05	-0.00045	A_3	$A_4 \rightarrow A_3$
2/16/2016	1.51479E-05	-1.4E-05	A_3	$A_3 \rightarrow A_3$
2/17/2016	6.74771E-06	-8.4E-06	A_3	$A_3 \rightarrow A_3$
2/18/2016	2.94835E-05	2.27E-05	A_4	$A_3 \rightarrow A_4$
2/19/2016	0.000248772	0.000219	A_4	$A_4 \rightarrow A_4$
2/22/2016	1.85585E-06	-0.00025	A_3	$A_4 \rightarrow A_3$
2/23/2016	0.000156204	0.000154	A_4	$A_3 \rightarrow A_4$

2/24/2016	3.46055E-05	-0.00012	A_3	$A_4 \rightarrow A_3$
2/25/2016	2.6442E-05	-8.2E-06	A_3	$A_3 \rightarrow A_3$
2/26/2016	0.000365628	0.000339	A_4	$A_3 \rightarrow A_4$
2/29/2016	5.86439E-05	-0.00031	A_3	$A_4 \rightarrow A_3$
3/1/2016	0.000132254	7.36E-05	A_4	$A_3 \rightarrow A_4$
3/2/2016	0.000358616	0.000226	A_4	$A_4 \rightarrow A_4$
3/3/2016	1.04905E-05	-0.00035	A_3	$A_4 \rightarrow A_3$
3/4/2016	1.03375E-05	-1.5E-07	A_3	$A_3 \rightarrow A_3$
3/7/2016	1.76872E-05	7.35E-06	A_4	$A_3 \rightarrow A_4$
3/8/2016	1.36694E-05	-4E-06	A_3	$A_4 \rightarrow A_3$
3/10/2016	9.05452E-07	-1.3E-05	A_3	$A_3 \rightarrow A_3$
3/11/2016	3.01413E-05	2.92E-05	A_4	$A_3 \rightarrow A_4$
3/14/2016	0.000350463	0.00032	A_4	$A_4 \rightarrow A_4$
3/15/2016	0.000122928	-0.00023	A_3	$A_4 \rightarrow A_3$
3/16/2016	3.6801E-05	-8.6E-05	A_3	$A_3 \rightarrow A_3$
3/17/2016	0.000134604	9.78E-05	A_4	$A_3 \rightarrow A_4$
3/18/2016	4.30492E-07	-0.00013	A_3	$A_4 \rightarrow A_3$
3/21/2016	9.27193E-07	4.97E-07	A_4	$A_3 \rightarrow A_4$
3/22/2016	2.46048E-05	2.37E-05	A_4	$A_4 \rightarrow A_4$
3/23/2016	0.00011613	9.15E-05	A_4	$A_4 \rightarrow A_4$
3/24/2016	3.47271E-05	-8.1E-05	A_3	$A_4 \rightarrow A_3$

3/28/2016	0.00012924	9.45E-05	A_4	$A_3 \rightarrow A_4$
3/29/2016	7.32187E-06	-0.00012	A_3	$A_4 \rightarrow A_3$
3/30/2016	6.75132E-05	6.02E-05	A_4	$A_3 \rightarrow A_4$
3/31/2016	3.98856E-06	-6.4E-05	A_3	$A_4 \rightarrow A_3$
4/1/2016	4.03885E-05	3.64E-05	A_4	$A_3 \rightarrow A_4$
4/4/2016	7.38439E-05	3.35E-05	A_4	$A_4 \rightarrow A_4$
4/5/2016	2.71679E-05	-4.7E-05	A_3	$A_4 \rightarrow A_3$
4/6/2016	1.16493E-05	-1.6E-05	A_3	$A_3 \rightarrow A_3$
4/7/2016	3.42837E-06	-8.2E-06	A_3	$A_3 \rightarrow A_3$
4/8/2016	2.13378E-06	-1.3E-06	A_3	$A_3 \rightarrow A_3$
4/11/2016	0.000231128	0.000229	A_4	$A_3 \rightarrow A_4$
4/12/2016	0.000178531	-5.3E-05	A_3	$A_4 \rightarrow A_3$
4/13/2016	2.15259E-05	-0.00016	A_3	$A_3 \rightarrow A_3$
4/14/2016	0.000144637	0.000123	A_4	$A_3 \rightarrow A_4$
4/15/2016	0.000440955	0.000296	A_4	$A_4 \rightarrow A_4$
4/18/2016	7.65219E-05	-0.00036	A_3	$A_4 \rightarrow A_3$
4/19/2016	6.36301E-05	-1.3E-05	A_3	$A_3 \rightarrow A_3$
4/20/2016	4.78306E-07	-6.3E-05	A_3	$A_3 \rightarrow A_3$
4/21/2016	4.49225E-05	4.44E-05	A_4	$A_3 \rightarrow A_4$
4/22/2016	2.55186E-06	-4.2E-05	A_3	$A_4 \rightarrow A_3$
4/25/2016	3.89615E-05	3.64E-05	A_4	$A_3 \rightarrow A_4$

4/26/2016	0.000309749	0.000271	A_4	$A_4 \rightarrow A_4$
4/27/2016	2.2007E-05	-0.00029	A_3	$A_4 \rightarrow A_3$
4/28/2016	0.000117319	9.53E-05	A_4	$A_3 \rightarrow A_4$
4/29/2016	4.2421E-05	-7.5E-05	A_3	$A_4 \rightarrow A_3$
5/2/2016	0.000148421	0.000106	A_4	$A_3 \rightarrow A_4$
5/3/2016	7.55525E-07	-0.00015	A_3	$A_4 \rightarrow A_3$
5/4/2016	4.53897E-05	4.46E-05	A_4	$A_3 \rightarrow A_4$
5/9/2016	0.000261652	0.000216	A_4	$A_4 \rightarrow A_4$
5/10/2016	2.20067E-05	-0.00024	A_3	$A_4 \rightarrow A_3$
5/11/2016	0.000143146	0.000121	A_4	$A_3 \rightarrow A_4$
5/12/2016	2.30512E-05	-0.00012	A_3	$A_4 \rightarrow A_3$
5/13/2016	0.000173306	0.00015	A_4	$A_3 \rightarrow A_4$
5/16/2016	6.25814E-05	-0.00011	A_3	$A_4 \rightarrow A_3$
5/17/2016	8.62891E-06	-5.4E-05	A_3	$A_3 \rightarrow A_3$
5/18/2016	8.21102E-06	-4.2E-07	A_3	$A_3 \rightarrow A_3$
5/19/2016	0.00013597	0.000128	A_4	$A_3 \rightarrow A_4$
5/20/2016	2.1684E-06	-0.00013	A_3	$A_4 \rightarrow A_3$
5/23/2016	9.46264E-05	9.25E-05	A_4	$A_3 \rightarrow A_4$
5/24/2016	4.64795E-05	-4.8E-05	A_3	$A_4 \rightarrow A_3$
5/25/2016	0.000439721	0.000393	A_4	$A_3 \rightarrow A_4$
5/26/2016	5.24011E-06	-0.00043	A_3	$A_4 \rightarrow A_3$

5/27/2016	8.14042E-05	7.62E-05	A_4	$A_3 \rightarrow A_4$
5/30/2016	3.19801E-07	-8.1E-05	A_3	$A_4 \rightarrow A_3$
5/31/2016	5.71634E-05	5.68E-05	A_4	$A_3 \rightarrow A_4$
6/1/2016	9.69948E-05	3.98E-05	A_4	$A_4 \rightarrow A_4$
6/2/2016	3.45034E-06	-9.4E-05	A_3	$A_4 \rightarrow A_3$
6/3/2016	3.80066E-05	3.46E-05	A_4	$A_3 \rightarrow A_4$
6/6/2016	0.000238476	0.0002	A_4	$A_4 \rightarrow A_4$
6/7/2016	9.13258E-05	-0.00015	A_3	$A_4 \rightarrow A_3$
6/8/2016	4.46768E-05	-4.7E-05	A_3	$A_3 \rightarrow A_3$
6/9/2016	4.3506E-05	-1.2E-06	A_3	$A_3 \rightarrow A_3$
6/10/2016	6.57614E-05	2.23E-05	A_4	$A_3 \rightarrow A_4$
6/13/2016	6.295E-05	-2.8E-06	A_3	$A_4 \rightarrow A_3$
6/14/2016	1.19874E-05	-5.1E-05	A_3	$A_3 \rightarrow A_3$
6/15/2016	4.20669E-05	3.01E-05	A_4	$A_3 \rightarrow A_4$
6/16/2016	3.36449E-05	-8.4E-06	A_3	$A_4 \rightarrow A_3$
6/17/2016	7.60972E-05	4.25E-05	A_4	$A_3 \rightarrow A_4$
6/20/2016	5.20187E-05	-2.4E-05	A_3	$A_4 \rightarrow A_3$
6/21/2016	4.11725E-06	-4.8E-05	A_3	$A_3 \rightarrow A_3$
6/22/2016	5.41025E-05	5E-05	A_4	$A_3 \rightarrow A_4$
6/23/2016	1.39898E-05	-4E-05	A_3	$A_4 \rightarrow A_3$
6/24/2016	7.82715E-05	6.43E-05	A_4	$A_3 \rightarrow A_4$

6/27/2016	1.00586E-05	-6.8E-05	A_3	$A_4 \rightarrow A_3$
6/28/2016	6.12173E-05	5.12E-05	A_4	$A_3 \rightarrow A_4$
6/29/2016	0.000660985	0.0006	A_4	$A_4 \rightarrow A_4$
6/30/2016	6.85388E-05	-0.00059	A_3	$A_4 \rightarrow A_3$
7/1/2016	0.000100791	3.23E-05	A_4	$A_3 \rightarrow A_4$
7/11/2016	0.000579911	0.000479	A_4	$A_4 \rightarrow A_4$
7/12/2016	7.84973E-06	-0.00057	A_3	$A_4 \rightarrow A_3$
7/13/2016	0.00022914	0.000221	A_4	$A_3 \rightarrow A_4$
7/14/2016	0.000308825	7.97E-05	A_4	$A_4 \rightarrow A_4$
7/15/2016	4.48902E-05	-0.00026	A_3	$A_4 \rightarrow A_3$
7/18/2016	4.9128E-05	4.24E-06	A_4	$A_3 \rightarrow A_4$
7/19/2016	1.41684E-05	-3.5E-05	A_3	$A_4 \rightarrow A_3$
7/20/2016	7.05716E-05	5.64E-05	A_4	$A_3 \rightarrow A_4$
7/21/2016	0.000113825	4.33E-05	A_4	$A_4 \rightarrow A_4$
7/22/2016	2.39024E-08	-0.00011	A_3	$A_4 \rightarrow A_3$
7/25/2016	0.000240434	0.00024	A_4	$A_3 \rightarrow A_4$
7/26/2016	6.83429E-06	-0.00023	A_3	$A_4 \rightarrow A_3$
7/27/2016	0.000241561	0.000235	A_4	$A_3 \rightarrow A_4$
7/28/2016	0.000113831	-0.00013	A_3	$A_4 \rightarrow A_3$
7/29/2016	0.000339913	0.000226	A_4	$A_3 \rightarrow A_4$

Lampiran 6: Perhitungan *Time Invariant FuzzyTime Series*

1. Menghitung $R_i,\ i=\overline{1,6}$ Sebagai Gabungan Relasi

$$R_1 = A_1^T \times A_3 = \begin{bmatrix} 1 \\ 0,5 \\ 0 \\ 0 \\ 0 \\ 0 \end{bmatrix} \times \begin{bmatrix} 0 & 0,5 & 1 & 0,5 & 0 & 0 \end{bmatrix} = \begin{bmatrix} 0 & 0,5 & 1 & 0,5 & 0 & 0 \\ 0 & 0,5 & 0,5 & 0,5 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

$$\cup$$

$$= A_1^T \times A_4 = \begin{bmatrix} 1 \\ 0,5 \\ 0 \\ 0 \\ 0 \\ 0 \end{bmatrix} \times \begin{bmatrix} 0 & 0 & 0,5 & 1 & 0,5 & 0 \end{bmatrix} = \begin{bmatrix} 0 & 0 & 0,5 & 1 & 0,5 & 0 \\ 0 & 0 & 0,5 & 0,5 & 0,5 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

$$= \begin{bmatrix} 0 & 0,5 & 1 & 1 & 0,5 & 0 \\ 0 & 0,5 & 0,5 & 0,5 & 0,5 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

$$R_2 = A_2^T \times A_3 = \begin{bmatrix} 0,5 \\ 1 \\ 0,5 \\ 0 \\ 0 \\ 0 \end{bmatrix} \times \begin{bmatrix} 0 & 0,5 & 1 & 0,5 & 0 & 0 \end{bmatrix} = \begin{bmatrix} 0 & 0,5 & 0,5 & 0,5 & 0 & 0 \\ 0 & 0,5 & 1 & 0,5 & 0 & 0 \\ 0 & 0,5 & 0,5 & 0,5 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

$$\cup$$

$$= A_2^T \times A_4 = \begin{bmatrix} 0,5 \\ 1 \\ 0,5 \\ 0 \\ 0 \\ 0 \end{bmatrix} \times \begin{bmatrix} 0 & 0 & 0,5 & 1 & 0,5 & 0 \end{bmatrix} = \begin{bmatrix} 0 & 0 & 0,5 & 0,5 & 0,5 & 0 \\ 0 & 0 & 0,5 & 1 & 0,5 & 0 \\ 0 & 0 & 0,5 & 0,5 & 0,5 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

$$\cup$$

$$= A_2^T \times A_5 = \begin{bmatrix} 0,5 \\ 1 \\ 0,5 \\ 0 \\ 0 \\ 0 \end{bmatrix} \times \begin{bmatrix} 0 & 0 & 0 & 0,5 & 1 & 0,5 \end{bmatrix} = \begin{bmatrix} 0 & 0 & 0 & 0,5 & 0,5 & 0,5 \\ 0 & 0 & 0 & 0,5 & 1 & 0,5 \\ 0 & 0 & 0 & 0,5 & 0,5 & 0,5 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

$$= \begin{bmatrix} 0 & 0,5 & 0,5 & 0,5 & 0,5 & 0,5 \\ 0 & 0,5 & 1 & 1 & 1 & 0,5 \\ 0 & 0,5 & 0,5 & 0,5 & 0,5 & 0,5 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

$$R_3 = A_3^T \times A_2 = \begin{bmatrix} 0 \\ 0,5 \\ 1 \\ 0,5 \\ 0 \\ 0 \end{bmatrix} \times \begin{bmatrix} 0,5 & 1 & 0,5 & 0 & 0 & 0 \end{bmatrix} = \begin{bmatrix} 0 & 0 & 0 & 0 & 0 & 0 \\ 0,5 & 0,5 & 0,5 & 0 & 0 & 0 \\ 1 & 1 & 0,5 & 0 & 0 & 0 \\ 0,5 & 0,5 & 0,5 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

$$\cup$$

$$= A_3^T \times A_3 = \begin{bmatrix} 0 \\ 0,5 \\ 1 \\ 0,5 \\ 0 \\ 0 \end{bmatrix} \times \begin{bmatrix} 0 & 0,5 & 1 & 0,5 & 0 & 0 \end{bmatrix} = \begin{bmatrix} 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0,5 & 0,5 & 0,5 & 0 & 0 \\ 0 & 0,5 & 1 & 0,5 & 0 & 0 \\ 0 & 0,5 & 0,5 & 0,5 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

$$\cup$$

$$= A_3^T \times A_4 = \begin{bmatrix} 0 \\ 0,5 \\ 1 \\ 0,5 \\ 0 \\ 0 \end{bmatrix} \times \begin{bmatrix} 0 & 0 & 0,5 & 1 & 0,5 & 0 \end{bmatrix} = \begin{bmatrix} 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0,5 & 0,5 & 0,5 & 0 \\ 0 & 0 & 0,5 & 1 & 0,5 & 0 \\ 0 & 0 & 0,5 & 0,5 & 0,5 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

$$\cup$$

$$= A_3^T \times A_5 = \begin{bmatrix} 0 \\ 0,5 \\ 1 \\ 0,5 \\ 0 \\ 0 \end{bmatrix} \times \begin{bmatrix} 0 & 0 & 0 & 0,5 & 1 & 0,5 \end{bmatrix} = \begin{bmatrix} 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0,5 & 0,5 & 0,5 \\ 0 & 0 & 0 & 0,5 & 1 & 0,5 \\ 0 & 0 & 0 & 0,5 & 0,5 & 0,5 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

$$\cup$$

$$= A_3^T \times A_6 = \begin{bmatrix} 0 \\ 0,5 \\ 1 \\ 0,5 \\ 0 \\ 0 \end{bmatrix} \times \begin{bmatrix} 0 & 0 & 0 & 0 & 0,5 & 1 \end{bmatrix} = \begin{bmatrix} 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0,5 & 0,5 \\ 0 & 0 & 0 & 0 & 0,5 & 1 \\ 0 & 0 & 0 & 0 & 0,5 & 0,5 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

$$= \begin{bmatrix} 0 & 0 & 0 & 0 & 0 & 0 \\ 0,5 & 0,5 & 0,5 & 0,5 & 0,5 & 0,5 \\ 1 & 1 & 1 & 1 & 1 & 1 \\ 0,5 & 0,5 & 0,5 & 0,5 & 0,5 & 0,5 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

$$R_4 = A_4^T \times A_2 = \begin{bmatrix} 0 \\ 0 \\ 0,5 \\ 1 \\ 0,5 \\ 0 \end{bmatrix} \times \begin{bmatrix} 0,5 & 1 & 0,5 & 0 & 0 & 0 \end{bmatrix} = \begin{bmatrix} 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0,5 & 0,5 & 0,5 & 0 & 0 & 0 \\ 0,5 & 1 & 0,5 & 0 & 0 & 0 \\ 0,5 & 0,5 & 0,5 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

$$\cup$$

$$= A_4^T \times A_3 = \begin{bmatrix} 0 \\ 0 \\ 0,5 \\ 1 \\ 0,5 \\ 0 \end{bmatrix} \times \begin{bmatrix} 0 & 0,5 & 1 & 0,5 & 0 & 0 \end{bmatrix} = \begin{bmatrix} 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0,5 & 0,5 & 0,5 & 0 & 0 \\ 0 & 0,5 & 1 & 0,5 & 0 & 0 \\ 0 & 0,5 & 0,5 & 0,5 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

$$\cup$$

$$= A_4^T \times A_4 = \begin{bmatrix} 0 \\ 0 \\ 0,5 \\ 1 \\ 0,5 \\ 0 \end{bmatrix} \times \begin{bmatrix} 0 & 0 & 0,5 & 1 & 0,5 & 0 \end{bmatrix} = \begin{bmatrix} 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0,5 & 0,5 & 0,5 & 0 \\ 0 & 0 & 0,5 & 1 & 0,5 & 0 \\ 0 & 0 & 0,5 & 0,5 & 0,5 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

$$\cup$$

$$= A_4^T \times A_5 = \begin{bmatrix} 0 \\ 0 \\ 0,5 \\ 1 \\ 0,5 \\ 0 \end{bmatrix} \times \begin{bmatrix} 0 & 0 & 0 & 0,5 & 1 & 0,5 \end{bmatrix} = \begin{bmatrix} 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0,5 & 0,5 & 0,5 \\ 0 & 0 & 0 & 0,5 & 1 & 0,5 \\ 0 & 0 & 0 & 0,5 & 0,5 & 0,5 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

$$= \begin{bmatrix} 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0,5 & 0,5 & 0,5 & 0,5 & 0,5 & 0,5 \\ 0,5 & 1 & 1 & 1 & 1 & 0,5 \\ 0,5 & 0,5 & 0,5 & 0,5 & 0,5 & 0,5 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

$$R_5 = A_5^T \times A_1 = \begin{bmatrix} 0 \\ 0 \\ 0 \\ 0,5 \\ 1 \\ 0,5 \end{bmatrix} \times \begin{bmatrix} 1 & 0,5 & 0 & 0 & 0 & 0 \end{bmatrix} = \begin{bmatrix} 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0,5 & 0,5 & 0 & 0 & 0 & 0 \\ 1 & 0,5 & 0 & 0 & 0 & 0 \\ 0,5 & 0,5 & 0 & 0 & 0 & 0 \end{bmatrix}$$

$$\cup$$

$$= A_5^T \times A_2 = \begin{bmatrix} 0 \\ 0 \\ 0 \\ 0,5 \\ 1 \\ 0,5 \end{bmatrix} \times \begin{bmatrix} 0,5 & 1 & 0,5 & 0 & 0 & 0 \end{bmatrix} = \begin{bmatrix} 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0,5 & 0,5 & 0,5 & 0 & 0 & 0 \\ 0,5 & 1 & 0,5 & 0 & 0 & 0 \\ 0,5 & 0,5 & 0,5 & 0 & 0 & 0 \end{bmatrix}$$

$$\cup$$

$$= A_5^T \times A_3 = \begin{bmatrix} 0 \\ 0 \\ 0 \\ 0,5 \\ 1 \\ 0,5 \end{bmatrix} \times \begin{bmatrix} 0 & 0,5 & 1 & 0,5 & 0 & 0 \end{bmatrix} = \begin{bmatrix} 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0,5 & 0,5 & 0,5 & 0 & 0 \\ 0 & 0,5 & 1 & 0,5 & 0 & 0 \\ 0 & 0,5 & 0,5 & 0,5 & 0 & 0 \end{bmatrix}$$

$$\cup$$

$$= A_5^T \times A_4 = \begin{bmatrix} 0 \\ 0 \\ 0 \\ 0,5 \\ 1 \\ 0,5 \end{bmatrix} \times \begin{bmatrix} 0 & 0 & 0,5 & 1 & 0,5 & 0 \end{bmatrix} = \begin{bmatrix} 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0,5 & 0,5 & 0,5 & 0 \\ 0 & 0 & 0,5 & 1 & 0,5 & 0 \\ 0 & 0 & 0,5 & 0,5 & 0,5 & 0 \end{bmatrix}$$

$$= \begin{bmatrix} 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0,5 & 0,5 & 0,5 & 0,5 & 0,5 & 0 \\ 1 & 1 & 1 & 1 & 0,5 & 0 \\ 0,5 & 0,5 & 0,5 & 0,5 & 0,5 & 0 \end{bmatrix}$$

$$R_6 = \mathrm{A}_6^T \times \mathrm{A}_1 = \begin{bmatrix} 0 \\ 0 \\ 0 \\ 0 \\ 0,5 \\ 1 \end{bmatrix} \times \begin{bmatrix} 1 & 0,5 & 0 & 0 & 0 & 0 \end{bmatrix} = \begin{bmatrix} 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0,5 & 0,5 & 0 & 0 & 0 & 0 \\ 1 & 0,5 & 0 & 0 & 0 & 0 \end{bmatrix}$$

$$= \begin{bmatrix} 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0{,}5 & 0{,}5 & 0 & 0 & 0 & 0 \\ 1 & 0{,}5 & 0 & 0 & 0 & 0 \end{bmatrix}$$

2. Menyatakan grup relasi *fuzzy* dengan menggunakan operator *max-min*

$$A_1 \circ R_1 = \begin{bmatrix} 1 & 0{,}5 & 0 & 0 & 0 & 0 \end{bmatrix} \circ \begin{bmatrix} 0 & 0{,}5 & 1 & 1 & 0{,}5 & 0 \\ 0 & 0{,}5 & 0{,}5 & 0{,}5 & 0{,}5 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix} = \begin{bmatrix} 0 & 0{,}5 & 1 & 1 & 0{,}5 & 0 \end{bmatrix}$$

$$A_2 \circ R_2 = \begin{bmatrix} 0{,}5 & 1 & 0{,}5 & 0 & 0 & 0 \end{bmatrix} \circ \begin{bmatrix} 0 & 0{,}5 & 0{,}5 & 0{,}5 & 0{,}5 & 0{,}5 \\ 0 & 0{,}5 & 1 & 1 & 1 & 0{,}5 \\ 0 & 0{,}5 & 0{,}5 & 0{,}5 & 0{,}5 & 0{,}5 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix} = \begin{bmatrix} 0 & 0{,}5 & 1 & 1 & 1 & 0{,}5 \end{bmatrix}$$

$$A_3 \circ R_3 = \begin{bmatrix} 0 & 0{,}5 & 1 & 0{,}5 & 0 & 0 \end{bmatrix} \circ \begin{bmatrix} 0 & 0 & 0 & 0 & 0 & 0 \\ 0{,}5 & 0{,}5 & 0{,}5 & 0{,}5 & 0{,}5 & 0{,}5 \\ 1 & 1 & 1 & 1 & 1 & 1 \\ 0{,}5 & 0{,}5 & 0{,}5 & 0{,}5 & 0{,}5 & 0{,}5 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix} = \begin{bmatrix} 1 & 1 & 1 & 1 & 1 & 1 \end{bmatrix}$$

$$A_4 \circ R_4 = \begin{bmatrix} 0 & 0 & 0,5 & 1 & 0,5 & 0 \end{bmatrix} \circ \begin{bmatrix} 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0,5 & 0,5 & 0,5 & 0,5 & 0,5 & 0,5 \\ 0,5 & 1 & 1 & 1 & 1 & 0,5 \\ 0,5 & 0,5 & 0,5 & 0,5 & 0,5 & 0,5 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix} = \begin{bmatrix} 0,5 & 1 & 1 & 1 & 1 & 0,5 \end{bmatrix}$$

$$A_5 \circ R_5 = \begin{bmatrix} 0 & 0 & 0 & 0,5 & 1 & 0,5 \end{bmatrix} \circ = \begin{bmatrix} 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0,5 & 0,5 & 0,5 & 0,5 & 0,5 & 0 \\ 1 & 1 & 1 & 1 & 0,5 & 0 \\ 0,5 & 0,5 & 0,5 & 0,5 & 0,5 & 0 \end{bmatrix} = \begin{bmatrix} 1 & 1 & 1 & 1 & 0,5 & 0 \end{bmatrix}$$

$$A_6 \circ R_6 = \begin{bmatrix} 0 & 0 & 0 & 0 & 0,5 & 1 \end{bmatrix} \circ = \begin{bmatrix} 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0,5 & 0,5 & 0 & 0 & 0 & 0 \\ 1 & 0,5 & 0 & 0 & 0 & 0 \end{bmatrix} = \begin{bmatrix} 1 & 0,5 & 0 & 0 & 0 & 0 \end{bmatrix}$$

3. Proses *Defuzzyfikasi*

- Untuk *output* $A_1 \circ R_1 = \begin{bmatrix} 0 & 0,5 & 1 & 1 & 0,5 & 0 \end{bmatrix}$

  Dalam *output* dapat dilihat nilai *max* di $u_3 = \begin{bmatrix} -0,001, & 0 \end{bmatrix}$ dan $u_4 = \begin{bmatrix} 0, & 0,001 \end{bmatrix}$

  $y = \dfrac{0,001 + 0,001}{2} = 0,001$ maka $Z = -0,001 + 0,001 = 0$

- Untuk *output* $A_2 \circ R_2 = \begin{bmatrix} 0 & 0,5 & 1 & 1 & 1 & 0,5 \end{bmatrix}$

  Dalam *output* dapat dilihat nilai *max* di $u_3 = \begin{bmatrix} -0,001, & 0 \end{bmatrix}$, $u_4 = \begin{bmatrix} 0, & 0,001 \end{bmatrix}$ dan

  $u_5 = \begin{bmatrix} 0,0001 & 0,002 \end{bmatrix}$

$y = \frac{0,002 + 0,001}{2} = 0,0015$ maka $Z = -0,001 + 0,0015 = 0,0005$

- Untuk *output* $A_3 \circ R_3 = \begin{bmatrix} 1 & 1 & 1 & 1 & 1 & 1 \end{bmatrix}$

  Dalam *output* dapat dilihat nilai *max* di $u_1 = [-0,003, \ -0,002]$,

  $u_2 = [-0,002, \ -0,001]$, $u_3 = [-0,001, \ 0]$, $u_4 = [0, \ 0,001]$,

  $u_5 = [0,001, \ 0,002]$ dan $u_6 = [0,002, \ 0,003]$

  $y = \frac{0,003 + 0,003}{2} = 0,003$ maka $Z = -0,003 + 0,003 = 0$

- Untuk *output* $A_4 \circ R_4 = \begin{bmatrix} 0,5 & 1 & 1 & 1 & 1 & 0,5 \end{bmatrix}$

  Dalam *output* dapat dilihat nilai *max* di $u_2 = [-0,002, \ -0,001]$,

  $u_3 = [-0,001, \ 0]$, $u_4 = [0, \ 0,001]$ dan $u_5 = [0,001, \ 0,002]$

  $y = \frac{0,002 + 0,002}{2} = 0,002$ maka $Z = -0,002 + 0,002 = 0$

- Untuk *output* $A_5 \circ R_5 = \begin{bmatrix} 1 & 1 & 1 & 1 & 0,5 & 0 \end{bmatrix}$

  Dalam *output* dapat dilihat nilai *max* di $u_1 = [-0,003, \ -0,002]$,

  $u_2 = [-0,002, \ -0,001]$, $u_3 = [-0,001, \ 0]$, $u_4 = [0, \ 0,001]$

  $y = \frac{0,001 + 0,003}{2} = 0,002$ maka $Z = -0,003 + 0,002 = -0,001$

- Untuk *output* $A_6 \circ R_6 = \begin{bmatrix} 1 & 0,5 & 0 & 0 & 0 & 0 \end{bmatrix}$

  Dalam *output* dapat dilihat nilai *max* di $u_1 = [-0,003, \ -0,002]$

  $y = \frac{-0,002 + 0,003}{2} = 0,0005$ maka $Z = -0,003 + 0,0005 = -0,0025$

Lampiran 7: Grup Relasi *Fuzzy, Defuzzyfikasi* dan Peramalan

Grup Relasi *Fuzzy*	*Defuzzyfikasi*	Peramalan
F (1/6/2014) = $A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000305275
F (1/7/2014) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	9.3227E-05
F (1/8/2014) = $A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000173527
F (1/9/2014) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	3.02191E-05
F (1/10/2014) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	2.14899E-05
F (1/13/2014) = $A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000164389
F (1/15/2014) = $A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.001149112
F (1/16/2014) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	0.000168773
F (1/17/2014) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.44485E-05
F (1/20/2014) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	8.37652E-06
F (1/21/2014) = $A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	9.97535E-05
F (1/22/2014) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	8.61851E-07
F (1/23/2014) = $A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	7.08842E-05
F (1/24/2014) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	3.5507E-06
F (1/27/2014) = $A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.00029399
F (1/28/2014) = $A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.001094481
F (1/29/2014) = $A_2 \circ R_2 = [0 \quad 0{,}5 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0.0005	0.000559325

F (1/30/2014) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000436284
F (2/3/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.02325E-06
F (2/4/2014) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000127138
F (2/5/2014) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000134909
F (2/6/2014) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000140034
F (2/7/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	9.87269E-05
F (2/10/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	5.55529E-05
F (2/11/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.30644E-05
F (2/12/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.04885E-05
F (2/13/2014) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	6.35097E-05
F (2/14/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.16005E-05
F (2/17/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.02237E-05
F (2/18/2014) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000136422
F (2/19/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.34614E-06
F (2/20/2014) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000122993
F (2/21/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	3.34649E-06
F (2/24/2014) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	5.80356E-05
F (2/25/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	4.81966E-05
F (2/26/2014) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000139631
F (2/27/2014) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000169242

F (2/28/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	0.000111531
F (3/3/2014) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000472018
F (3/4/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	0.000191485
F (3/5/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	7.60316E-06
F (3/6/2014) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.00022314
F (3/7/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.1759E-05
F (3/10/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	2.0774E-06
F (3/11/2014) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	1.09368E-05
F (3/12/2014) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	1.75498E-05
F (3/13/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.08292E-05
F (3/14/2014) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000173663
F (3/17/2014) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.001041013
F (3/18/2014) $= A_2 \circ R_2 = [0 \quad 0{,}5 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0.0005	0.000508312
F (3/19/2014) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000309965
F (3/20/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	8.99435E-05
F (3/21/2014) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.001035903
F (3/24/2014) $= A_2 \circ R_2 = [0 \quad 0{,}5 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0.0005	0.000504153
F (3/25/2014) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	8.24723E-06
F (3/26/2014) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.00013279
F (3/27/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	4.33812E-05

F (3/28/2014) $= A_3 \circ R_3 = [\ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ ]$	0	4.05645E-06
F (4/1/2014) $= A_4 \circ R_4 = [0{,}5\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0	5.42485E-05
F (4/2/2014) $= A_4 \circ R_4 = [0{,}5\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0	0.000712222
F (4/3/2014) $= A_3 \circ R_3 = [\ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ ]$	0	8.79708E-06
F (4/4/2014) $= A_4 \circ R_4 = [0{,}5\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0	3.24047E-05
F (4/7/2014) $= A_3 \circ R_3 = [\ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ ]$	0	2.90294E-05
F (4/8/2014) $= A_4 \circ R_4 = [0{,}5\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0	0.000443739
F (4/9/2014) $= A_3 \circ R_3 = [\ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ ]$	0	2.44583E-07
F (4/10/2014) $= A_4 \circ R_4 = [0{,}5\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0	2.75447E-07
F (4/11/2014) $= A_5 \circ R_5 = [1\ \ 1\ \ 1\ \ 1\ \ 0{,}5\ \ 0]$	-0.001	8.97111E-05
F (4/14/2014) $= A_3 \circ R_3 = [\ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ ]$	0	0.000246566
F (4/15/2014) $= A_3 \circ R_3 = [\ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ ]$	0	9.58736E-05
F (4/16/2014) $= A_3 \circ R_3 = [\ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ ]$	0	9.66857E-06
F (4/17/2014) $= A_3 \circ R_3 = [\ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ ]$	0	1.90597E-06
F (4/21/2014) $= A_4 \circ R_4 = [0{,}5\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0	9.33911E-05
F (4/22/2014) $= A_3 \circ R_3 = [\ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ ]$	0	1.66778E-07
F (4/23/2014) $= A_4 \circ R_4 = [0{,}5\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0	6.15969E-07
F (4/24/2014) $= A_4 \circ R_4 = [0{,}5\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0	9.14749E-07
F (4/25/2014) $= A_4 \circ R_4 = [0{,}5\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0	2.20609E-06
F (4/28/2014) $= A_3 \circ R_3 = [\ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ ]$	0	1.48183E-08

F (4/29/2014) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000374137
F (4/30/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	6.30572E-05
F (5/2/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.4155E-05
F (5/5/2014) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	1.66186E-05
F (5/6/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	5.38828E-06
F (5/7/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	2.25034E-06
F (5/8/2014) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	4.69403E-05
F (5/9/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	3.48908E-06
F (5/12/2014) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	2.18957E-05
F (5/13/2014) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000112511
F (5/14/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	3.84755E-06
F (5/16/2014) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000321413
F (5/19/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	0.000168273
F (5/20/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.55045E-05
F (5/21/2014) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000615
F (5/22/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	7.02908E-05
F (5/23/2014) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000126435
F (5/26/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	9.06306E-06
F (5/28/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.48402E-07
F (5/30/2014) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	1.83244E-05

F (6/2/2014) = $A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000661014
F (6/3/2014) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.01699E-05
F (6/4/2014) = $A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	3.65725E-05
F (6/5/2014) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.59879E-05
F (6/6/2014) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	5.96251E-06
F (6/9/2014) = $A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	3.21693E-05
F (6/10/2014) = $A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000132457
F (6/11/2014) = $A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000246519
F (6/12/2014) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	3.90127E-05
F (6/13/2014) = $A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000111127
F (6/16/2014) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	2.92297E-07
F (6/17/2014) = $A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000181605
F (6/18/2014) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	5.66445E-05
F (6/19/2014) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	2.79117E-05
F (6/20/2014) = $A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	4.78888E-05
F (6/23/2014) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.93518E-06
F (6/24/2014) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	4.21104E-08
F (6/25/2014) = $A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	1.38694E-06
F (6/26/2014) = $A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	2.255E-05
F (6/27/2014) = $A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	6.06082E-05

F (6/30/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	5.1763E-05
F (7/1/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.85602E-05
F (7/2/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	7.94887E-06
F (7/3/2014) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000115375
F (7/4/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	7.28182E-06
F (7/7/2014) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	9.3331E-06
F (7/8/2014) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000616259
F (7/10/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	2.96806E-05
F (7/11/2014) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000204167
F (7/14/2014) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000267157
F (7/15/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.0551E-07
F (7/16/2014) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000192723
F (7/17/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	5.69664E-05
F (7/18/2014) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000151141
F (7/21/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	4.87155E-05
F (7/22/2014) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000128758
F (7/23/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	6.4873E-05
F (7/24/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.64384E-07
F (7/25/2014) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	2.45756E-06
F (8/4/2014) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	1.41336E-05

F (8/5/2014) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000247307
F (8/6/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	3.20988E-05
F (8/7/2014) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000186684
F (8/8/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	2.68403E-05
F (8/11/2014) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	3.42609E-05
F (8/12/2014) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.00019976
F (8/13/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	2.09512E-05
F (8/14/2014) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	9.40606E-05
F (8/15/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.34693E-05
F (8/18/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	8.53525E-06
F (8/19/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	5.82298E-06
F (8/20/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	3.69934E-06
F (8/21/2014) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	4.39625E-05
F (8/22/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	3.85183E-06
F (8/25/2014) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	2.25918E-05
F (8/26/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.43234E-05
F (8/27/2014) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	4.99706E-05
F (8/28/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.38235E-05
F (8/29/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.13286E-05
F (9/1/2014) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000240228

F (9/2/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	0.00015557
F (9/3/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	2.91913E-05
F (9/4/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.95497E-05
F (9/5/2014) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	3.41152E-05
F (9/8/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.98581E-06
F (9/9/2014) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	5.9746E-05
F (9/10/2014) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.00020646
F (9/11/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	0.000183735
F (9/12/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	4.88164E-05
F (9/15/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	4.15302E-05
F (9/16/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	8.52407E-06
F (9/17/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	2.39663E-06
F (9/18/2014) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000152163
F (9/19/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	2.99951E-05
F (9/22/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	7.18844E-06
F (9/23/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	4.19444E-06
F (9/24/2014) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	6.94859E-05
F (9/25/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	2.49598E-05
F (9/26/2014) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.13373E-05
F (9/29/2014) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000130332

F (9/30/2014) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	4.85634E-06
F (10/1/2014) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	5.61537E-06
F (10/2/2014) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	7.6003E-05
F (10/3/2014) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	0.000906326
F (10/6/2014) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	1.87175E-05
F (10/7/2014) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	7.14517E-05
F (10/8/2014) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	3.50824E-05
F (10/9/2014) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	0.000316778
F (10/10/2014) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	3.70418E-05
F (10/13/2014) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	9.46247E-05
F (10/14/2014) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	0.000227175
F (10/15/2014) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	2.89711E-05
F (10/16/2014) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	7.77822E-06
F (10/17/2014) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	7.17421E-06
F (10/20/2014) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	0.000334925
F (10/21/2014) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	1.3456E-06
F (10/22/2014) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	1.89798E-06
F (10/23/2014) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	0.000126011
F (10/24/2014) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	1.83814E-05
F (10/27/2014) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	5.01035E-05

F (10/28/2014) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	0.000109745
F (10/29/2014) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	7.76637E-05
F (10/30/2014) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	0.000509431
F (10/31/2014) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	6.26459E-06
F (11/3/2014) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	2.10259E-05
F (11/4/2014) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	3.33315E-06
F (11/5/2014) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	7.75902E-05
F (11/6/2014) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	3.6923E-06
F (11/7/2014) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	2.27176E-05
F (11/10/2014) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	0.000172168
F (11/11/2014) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	4.21795E-05
F (11/12/2014) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	0.000325923
F (11/13/2014) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	4.44018E-06
F (11/14/2014) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	4.19618E-06
F (11/17/2014) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	3.87652E-06
F (11/18/2014) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	1.77679E-05
F (11/19/2014) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	0.000121982
F (11/20/2014) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	1.98351E-05
F (11/21/2014) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	7.23226E-05
F (11/24/2014) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	7.06559E-05

F (11/25/2014) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	0.000186958
F (11/26/2014) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	0.000102751
F (11/27/2014) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	9.14669E-06
F (11/28/2014) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	3.47482E-05
F (12/1/2014) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	1.19412E-05
F (12/2/2014) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	1.42818E-05
F (12/3/2014) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	1.77642E-06
F (12/4/2014) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	4.13526E-05
F (12/5/2014) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	5.82012E-05
F (12/8/2014) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	5.97961E-06
F (12/9/2014) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	0.000133118
F (12/10/2014) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	5.21141E-06
F (12/11/2014) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	3.77781E-05
F (12/12/2014) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	3.14266E-05
F (12/15/2014) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	7.25491E-07
F (12/16/2014) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	7.0248E-05
F (12/17/2014) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	0.000278778
F (12/18/2014) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	6.84006E-06
F (12/19/2014) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	0.000407158
F (12/29/2014) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	1.47172E-05

F (12/30/2014) = $A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	9.12261E-05
F (12/31/2014) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	9.1153E-05
F (1/2/2015) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.39645E-07
F (1/5/2015) = $A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	3.47381E-05
F (1/6/2015) = $A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	4.64692E-05
F (1/7/2015) = $A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.00013461
F (1/8/2015) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	0.000100598
F (1/9/2015) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	6.36735E-08
F (1/12/2015) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	2.20195E-09
F (1/13/2015) = $A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	4.26037E-05
F (1/14/2015) = $A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000150439
F (1/15/2015) = $A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000229558
F (1/16/2015) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	6.45493E-05
F (1/19/2015) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	5.4127E-05
F (1/20/2015) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	2.39999E-06
F (1/21/2015) = $A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000121497
F (1/22/2015) = $A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000355651
F (1/23/2015) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	8.92825E-05
F (1/26/2015) = $A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.00014895
F (1/27/2015) = $A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000194018

F (1/28/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.72435E-05
F (1/29/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.21052E-06
F (1/30/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	3.12646E-05
F (2/2/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	3.02088E-05
F (2/3/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	5.53121E-05
F (2/4/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.54566E-05
F (2/5/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	4.00121E-05
F (2/6/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000155348
F (2/9/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000264375
F (2/10/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	7.25078E-08
F (2/11/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	4.45162E-05
F (2/12/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	7.81412E-05
F (2/13/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	6.54072E-06
F (2/16/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	9.84992E-05
F (2/17/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000245653
F (2/18/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	4.80112E-05
F (2/19/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	4.95932E-05
F (2/20/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	2.33088E-06
F (2/23/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	1.55602E-05
F (2/24/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	2.42226E-05

F (2/25/2015) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	7.24114E-06
F (2/26/2015) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	8.7349E-05
F (2/27/2015) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	1.46824E-07
F (3/2/2015) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	4.87649E-05
F (3/3/2015) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	9.8521E-05
F (3/4/2015) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	4.92662E-06
F (3/5/2015) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	0.000100129
F (3/6/2015) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	6.89259E-07
F (3/9/2015) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	0.000319947
F (3/10/2015) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	0.000220672
F (3/11/2015) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	2.48073E-06
F (3/12/2015) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	3.12135E-05
F (3/13/2015) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	9.30043E-06
F (3/16/2015) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	8.43123E-10
F (3/17/2015) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	3.10962E-06
F (3/18/2015) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	3.92632E-07
F (3/19/2015) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	7.69732E-05
F (3/20/2015) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	8.60501E-05
F (3/23/2015) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	1.99085E-05
F (3/24/2015) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	3.17906E-06

F (3/25/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	2.55066E-06
F (3/26/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000223384
F (3/27/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	0.00011647
F (3/30/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	8.82726E-05
F (3/31/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000178529
F (4/1/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	9.28484E-05
F (4/2/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.00015084
F (4/6/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.41494E-06
F (4/7/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	4.37799E-05
F (4/8/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	6.53528E-05
F (4/9/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000110681
F (4/10/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	3.60683E-05
F (4/13/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	2.74809E-06
F (4/14/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	5.57196E-05
F (4/15/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	6.76379E-05
F (4/16/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	3.59271E-08
F (4/17/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	2.83407E-06
F (4/20/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	5.38844E-06
F (4/21/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	5.15549E-05
F (4/22/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000373723

F (4/23/2015) = $A_3 \circ R_3 = [\ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ ]$	0	7.93378E-06
F (4/24/2015) = $A_4 \circ R_4 = [0{,}5\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0	9.68933E-06
F (4/27/2015) = $A_4 \circ R_4 = [0{,}5\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0	6.49578E-05
F (4/28/2015) = $A_5 \circ R_5 = [1\ \ 1\ \ 1\ \ 1\ \ 0{,}5\ \ 0]$	-0.001	0.000218552
F (4/29/2015) = $A_2 \circ R_2 = [0\ \ 0{,}5\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0.0005	0.000519102
F (4/30/2015) = $A_5 \circ R_5 = [1\ \ 1\ \ 1\ \ 1\ \ 0{,}5\ \ 0]$	-0.001	0.000339569
F (5/1/2015) = $A_2 \circ R_2 = [0\ \ 0{,}5\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0.0005	0.000835686
F (5/4/2015) = $A_3 \circ R_3 = [\ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ ]$	0	1.81253E-07
F (5/5/2015) = $A_4 \circ R_4 = [0{,}5\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0	0.000325271
F (5/6/2015) = $A_4 \circ R_4 = [0{,}5\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0	7.49039E-05
F (5/7/2015) = $A_4 \circ R_4 = [0{,}5\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0	7.8455E-05
F (5/8/2015) = $A_3 \circ R_3 = [\ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ ]$	0	5.45627E-05
F (5/11/2015) = $A_4 \circ R_4 = [0{,}5\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0	0.000271762
F (5/12/2015) = $A_3 \circ R_3 = [\ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ ]$	0	7.68447E-09
F (5/13/2015) = $A_4 \circ R_4 = [0{,}5\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0	1.72495E-07
F (5/15/2015) = $A_4 \circ R_4 = [0{,}5\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0	0.000214155
F (5/18/2015) = $A_3 \circ R_3 = [\ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ ]$	0	1.6021E-05
F (5/19/2015) = $A_3 \circ R_3 = [\ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ ]$	0	1.92849E-07
F (5/20/2015) = $A_4 \circ R_4 = [0{,}5\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0	3.59814E-05
F (5/21/2015) = $A_3 \circ R_3 = [\ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ ]$	0	2.18564E-05

F (5/22/2015) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	1.27319E-05
F (5/25/2015) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	1.735E-08
F (5/26/2015) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	6.10475E-08
F (5/27/2015) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	0.000119728
F (5/28/2015) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	0.000257354
F (5/29/2015) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	7.84989E-07
F (6/1/2015) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	0.000138965
F (6/3/2015) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	4.55083E-06
F (6/4/2015) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	0.000140685
F (6/5/2015) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	0.000130348
F (6/8/2015) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	3.36581E-07
F (6/9/2015) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	0.000342427
F (6/10/2015) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	0.000709138
F (6/11/2015) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	0.000188939
F (6/12/2015) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	9.61244E-07
F (6/15/2015) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	1.6033E-05
F (6/16/2015) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	0.000631568
F (6/17/2015) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	6.07733E-05
F (6/18/2015) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	0.000133147
F (6/19/2015) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	1.57471E-05

F (6/22/2015) $= A_3 \circ R_3 = [\ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ ]$	0	1.15992E-05
F (6/23/2015) $= A_4 \circ R_4 = [0{,}5\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0	4.41454E-05
F (6/24/2015) $= A_3 \circ R_3 = [\ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ ]$	0	4.17332E-05
F (6/25/2015) $= A_4 \circ R_4 = [0{,}5\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0	0.000208045
F (6/26/2015) $= A_3 \circ R_3 = [\ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ ]$	0	0.000110705
F (6/29/2015) $= A_3 \circ R_3 = [\ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ ]$	0	4.21881E-06
F (6/30/2015) $= A_4 \circ R_4 = [0{,}5\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0	6.002E-05
F (7/1/2015) $= A_3 \circ R_3 = [\ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ ]$	0	2.8759E-05
F (7/2/2015) $= A_3 \circ R_3 = [\ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ ]$	0	1.23779E-05
F (7/3/2015) $= A_4 \circ R_4 = [0{,}5\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0	0.000118092
F (7/6/2015) $= A_4 \circ R_4 = [0{,}5\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0	0.000178736
F (7/7/2015) $= A_4 \circ R_4 = [0{,}5\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0	0.000212914
F (7/8/2015) $= A_3 \circ R_3 = [\ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ ]$	0	1.98946E-05
F (7/9/2015) $= A_4 \circ R_4 = [0{,}5\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0	3.01827E-05
F (7/10/2015) $= A_4 \circ R_4 = [0{,}5\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0	0.000172851
F (7/13/2015) $= A_3 \circ R_3 = [\ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ ]$	0	1.97556E-05
F (7/14/2015) $= A_4 \circ R_4 = [0{,}5\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0	7.80906E-05
F (7/15/2015) $= A_3 \circ R_3 = [\ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ ]$	0	1.35916E-07
F (7/22/2015) $= A_4 \circ R_4 = [0{,}5\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0	8.98467E-06
F (7/23/2015) $= A_4 \circ R_4 = [0{,}5\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0	6.58105E-05

F (7/24/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	9.4724E-06
F (7/27/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000213565
F (7/28/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000487822
F (7/29/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	3.42504E-05
F (7/30/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	4.56857E-07
F (7/31/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	6.09736E-06
F (8/3/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000408531
F (8/4/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	6.12022E-05
F (8/5/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	2.10602E-05
F (8/6/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000316256
F (8/7/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	0.000245818
F (8/10/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	2.46936E-05
F (8/11/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	8.53407E-06
F (8/12/2015) $= A_5 \circ R_5 = [1 \quad 1 \quad 1 \quad 1 \quad 0{,}5 \quad 0]$	-0.001	0.000228491
F (8/13/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.001398062
F (8/14/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	0.001145862
F (8/18/2015) $= A_2 \circ R_2 = [0 \quad 0{,}5 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0.0005	0.000502498
F (8/19/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000355186
F (8/20/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	2.67874E-05
F (8/21/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	5.10607E-05

F (8/24/2015) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.00084176
F (8/25/2015) $= A_5 \circ R_5 = [1 \quad 1 \quad 1 \quad 1 \quad 0,5 \quad 0]$	-0.001	0.001380466
F (8/26/2015) $= A_1 \circ R_1 = [0 \quad 0,5 \quad 1 \quad 1 \quad 0,5 \quad 0]$	0	0.000344281
F (8/27/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	3.64097E-05
F (8/28/2015) $= A_6 \circ R_6 = [1 \quad 0,5 \quad 0 \quad 0 \quad 0 \quad 0]$	-0.0025	0.000335428
F (8/31/2015) $= A_1 \circ R_1 = [0 \quad 0,5 \quad 1 \quad 1 \quad 0,5 \quad 0]$	0	1.14222E-05
F (9/1/2015) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000408488
F (9/2/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	0.000342785
F (9/3/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	4.56303E-06
F (9/4/2015) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000259007
F (9/7/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	2.27063E-05
F (9/8/2015) $= A_5 \circ R_5 = [1 \quad 1 \quad 1 \quad 1 \quad 0,5 \quad 0]$	-0.001	0.000650221
F (9/9/2015) $= A_2 \circ R_2 = [0 \quad 0,5 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0.0005	0.000526247
F (9/10/2015) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000169514
F (9/11/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.27425E-07
F (9/14/2015) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000198393
F (9/15/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	0.000165377
F (9/16/2015) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000372563
F (9/17/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.73041E-05
F (9/18/2015) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000196189

F (9/21/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.38906E-06
F (9/22/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	9.44085E-06
F (9/23/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000117561
F (9/25/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000650605
F (9/28/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	6.33144E-05
F (9/29/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000805864
F (9/30/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	0.00041816
F (10/1/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	4.92414E-06
F (10/2/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	9.54268E-05
F (10/5/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000205338
F (10/6/2015) $= A_5 \circ R_5 = [1 \quad 1 \quad 1 \quad 1 \quad 0{,}5 \quad 0]$	-0.001	0.000663441
F (10/7/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	0.001313567
F (10/8/2015) $= A_2 \circ R_2 = [0 \quad 0{,}5 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0.0005	0.000571266
F (10/9/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	2.72072E-06
F (10/12/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000744462
F (10/13/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	4.56053E-05
F (10/15/2015) $= A_5 \circ R_5 = [1 \quad 1 \quad 1 \quad 1 \quad 0{,}5 \quad 0]$	-0.001	0.000763892
F (10/16/2015) $= A_2 \circ R_2 = [0 \quad 0{,}5 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0.0005	0.000685487
F (10/19/2015) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	2.37968E-05
F (10/20/2015) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000160935

F (10/21/2015) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	6.34695E-06
F (10/22/2015) = $A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	5.11078E-05
F (10/23/2015) = $A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	6.12338E-05
F (10/26/2015) = $A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000219144
F (10/27/2015) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	3.75738E-05
F (10/28/2015) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	2.54393E-05
F (10/29/2015) = $A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000216885
F (10/30/2015) = $A_5 \circ R_5 = [1 \quad 1 \quad 1 \quad 1 \quad 0{,}5 \quad 0]$	-0.001	0.000488008
F (11/2/2015) = $A_2 \circ R_2 = [0 \quad 0{,}5 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0.0005	0.000503895
F (11/3/2015) = $A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.00012832
F (11/4/2015) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	3.80101E-05
F (11/5/2015) = $A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000329688
F (11/6/2015) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	5.59519E-05
F (11/9/2015) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	3.16382E-06
F (11/10/2015) = $A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000353491
F (11/11/2015) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	0.000263025
F (11/12/2015) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.94718E-05
F (11/13/2015) = $A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	3.52227E-05
F (11/16/2015) = $A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	5.07569E-05
F (11/17/2015) = $A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	9.63545E-05

F (11/18/2015) = $A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000163408
F (11/19/2015) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	6.91088E-05
F (11/20/2015) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.7758E-05
F (11/23/2015) = $A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000199163
F (11/24/2015) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	0.000195394
F (11/25/2015) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	6.37335E-07
F (11/26/2015) = $A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	7.69336E-05
F (11/27/2015) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	7.98999E-06
F (11/30/2015) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.7531E-06
F (12/1/2015) = $A_5 \circ R_5 = [1 \quad 1 \quad 1 \quad 1 \quad 0,5 \quad 0]$	-0.001	0.00018917
F (12/2/2015) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	0.001005986
F (12/3/2015) = $A_2 \circ R_2 = [0 \quad 0,5 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0.0005	0.000504074
F (12/4/2015) = $A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	1.53035E-05
F (12/7/2015) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	9.37739E-06
F (12/8/2015) = $A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	2.07897E-05
F (12/10/2015) = $A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000531737
F (12/11/2015) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	4.91982E-05
F (12/14/2015) = $A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000501697
F (12/15/2015) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.66574E-06
F (12/16/2015) = $A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000160394

F (12/17/2015) = $A_4 \circ R_4$ = $[0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000232478
F (12/18/2015) = $A_4 \circ R_4$ = $[0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000877672
F (12/21/2015) = $A_3 \circ R_3$ = $[\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	0.000370511
F (12/22/2015) = $A_3 \circ R_3$ = $[\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	5.45297E-05
F (12/23/2015) = $A_4 \circ R_4$ = $[0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	9.0135E-05
F (12/28/2015) = $A_3 \circ R_3$ = $[\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	3.38789E-05
F (12/29/2015) = $A_4 \circ R_4$ = $[0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	5.64369E-05
F (12/30/2015) = $A_3 \circ R_3$ = $[\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	2.0622E-05
F (1/4/2016) = $A_4 \circ R_4$ = $[0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	3.54708E-05
F (1/5/2016) = $A_4 \circ R_4$ = $[0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000320321
F (1/6/2016) = $A_3 \circ R_3$ = $[\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	8.35414E-05
F (1/7/2016) = $A_4 \circ R_4$ = $[0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000656784
F (1/8/2016) = $A_3 \circ R_3$ = $[\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	0.000516025
F (1/11/2016) = $A_3 \circ R_3$ = $[\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	7.42844E-06
F (1/12/2016) = $A_4 \circ R_4$ = $[0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000417598
F (1/13/2016) = $A_3 \circ R_3$ = $[\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	0.0001874
F (1/14/2016) = $A_3 \circ R_3$ = $[\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	0.0001006
F (1/15/2016) = $A_4 \circ R_4$ = $[0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000220543
F (1/18/2016) = $A_3 \circ R_3$ = $[\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	4.87858E-06
F (1/19/2016) = $A_4 \circ R_4$ = $[0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000121667

F (1/20/2016) $= A_3 \circ R_3 = [\ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ ]$	0	4.75255E-05
F (1/21/2016) $= A_4 \circ R_4 = [0{,}5\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0	0.000255686
F (1/22/2016) $= A_3 \circ R_3 = [\ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ ]$	0	7.97809E-06
F (1/25/2016) $= A_4 \circ R_4 = [0{,}5\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0	0.000254471
F (1/26/2016) $= A_3 \circ R_3 = [\ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ ]$	0	4.18244E-05
F (1/27/2016) $= A_3 \circ R_3 = [\ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ ]$	0	1.09757E-06
F (1/28/2016) $= A_4 \circ R_4 = [0{,}5\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0	0.000354667
F (1/29/2016) $= A_3 \circ R_3 = [\ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ ]$	0	2.29796E-05
F (2/1/2016) $= A_4 \circ R_4 = [0{,}5\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0	6.60159E-05
F (2/2/2016) $= A_3 \circ R_3 = [\ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ ]$	0	7.36767E-07
F (2/3/2016) $= A_4 \circ R_4 = [0{,}5\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0	0.000134784
F (2/4/2016) $= A_3 \circ R_3 = [\ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ ]$	0	0.000133972
F (2/5/2016) $= A_4 \circ R_4 = [0{,}5\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0	0.000367544
F (2/9/2016) $= A_4 \circ R_4 = [0{,}5\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0	0.001020223
F (2/10/2016) $= A_3 \circ R_3 = [\ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ ]$	0	7.85695E-05
F (2/11/2016) $= A_3 \circ R_3 = [\ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ ]$	0	1.47305E-06
F (2/12/2016) $= A_4 \circ R_4 = [0{,}5\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0	0.00034523
F (2/15/2016) $= A_4 \circ R_4 = [0{,}5\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0{,}5]$	0	0.000475731
F (2/16/2016) $= A_3 \circ R_3 = [\ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ ]$	0	2.91736E-05
F (2/17/2016) $= A_3 \circ R_3 = [\ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ ]$	0	1.51479E-05

F (2/18/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	6.74771E-06
F (2/19/2016) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	2.94835E-05
F (2/22/2016) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000248772
F (2/23/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.85585E-06
F (2/24/2016) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000156204
F (2/25/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	3.46055E-05
F (2/26/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	2.6442E-05
F (2/29/2016) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000365628
F (3/1/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	5.86439E-05
F (3/2/2016) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000132254
F (3/3/2016) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000358616
F (3/4/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.04905E-05
F (3/7/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.03375E-05
F (3/8/2016) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	1.76872E-05
F (3/10/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.36694E-05
F (3/11/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	9.05452E-07
F (3/14/2016) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	3.01413E-05
F (3/15/2016) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000350463
F (3/16/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	0.000122928
F (3/17/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	3.6801E-05

F (3/18/2016) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000134604
F (3/21/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	4.30492E-07
F (3/22/2016) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	9.27193E-07
F (3/23/2016) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	2.46048E-05
F (3/24/2016) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.00011613
F (3/28/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	3.47271E-05
F (3/29/2016) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.00012924
F (3/30/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	7.32187E-06
F (3/31/2016) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	6.75132E-05
F (4/1/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	3.98856E-06
F (4/4/2016) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	4.03885E-05
F (4/5/2016) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	7.38439E-05
F (4/6/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	2.71679E-05
F (4/7/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.16493E-05
F (4/8/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	3.42837E-06
F (4/11/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	2.13378E-06
F (4/12/2016) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000231128
F (4/13/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	0.000178531
F (4/14/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	2.15259E-05
F (4/15/2016) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000144637

F (4/18/2016) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000440955
F (4/19/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	7.65219E-05
F (4/20/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	6.36301E-05
F (4/21/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	4.78306E-07
F (4/22/2016) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	4.49225E-05
F (4/25/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	2.55186E-06
F (4/26/2016) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	3.89615E-05
F (4/27/2016) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000309749
F (4/28/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	2.2007E-05
F (4/29/2016) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000117319
F (5/2/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	4.2421E-05
F (5/3/2016) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000148421
F (5/4/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	7.55525E-07
F (5/9/2016) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	4.53897E-05
F (5/10/2016) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000261652
F (5/11/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	2.20067E-05
F (5/12/2016) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000143146
F (5/13/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	2.30512E-05
F (5/16/2016) $= A_4 \circ R_4 = [0,5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0,5]$	0	0.000173306
F (5/17/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	6.25814E-05

F (5/18/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	8.62891E-06
F (5/19/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	8.21102E-06
F (5/20/2016) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.00013597
F (5/23/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	2.1684E-06
F (5/24/2016) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	9.46264E-05
F (5/25/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	4.64795E-05
F (5/26/2016) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000439721
F (5/27/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	5.24011E-06
F (5/30/2016) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	8.14042E-05
F (5/31/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	3.19801E-07
F (6/1/2016) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	5.71634E-05
F (6/2/2016) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	9.69948E-05
F (6/3/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	3.45034E-06
F (6/6/2016) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	3.80066E-05
F (6/7/2016) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000238476
F (6/8/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	9.13258E-05
F (6/9/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	4.46768E-05
F (6/10/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	4.3506E-05
F (6/13/2016) $= A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	6.57614E-05
F (6/14/2016) $= A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	6.295E-05

F (6/15/2016) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.19874E-05
F (6/16/2016) = $A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	4.20669E-05
F (6/17/2016) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	3.36449E-05
F (6/20/2016) = $A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	7.60972E-05
F (6/21/2016) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	5.20187E-05
F (6/22/2016) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	4.11725E-06
F (6/23/2016) = $A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	5.41025E-05
F (6/24/2016) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.39898E-05
F (6/27/2016) = $A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	7.82715E-05
F (6/28/2016) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	1.00586E-05
F (6/29/2016) = $A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	6.12173E-05
F (6/30/2016) = $A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000660985
F (7/1/2016) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	6.85388E-05
F (7/11/2016) = $A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000100791
F (7/12/2016) = $A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000579911
F (7/13/2016) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	7.84973E-06
F (7/14/2016) = $A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.00022914
F (7/15/2016) = $A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	0.000308825
F (7/18/2016) = $A_3 \circ R_3 = [\ 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1\ ]$	0	4.48902E-05
F (7/19/2016) = $A_4 \circ R_4 = [0{,}5 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0{,}5]$	0	4.9128E-05

F (7/20/2016) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	1.41684E-05
F (7/21/2016) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	7.05716E-05
F (7/22/2016) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	0.000113825
F (7/25/2016) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	2.39024E-08
F (7/26/2016) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	0.000240434
F (7/27/2016) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	6.83429E-06
F (7/28/2016) = $A_4 \circ R_4$ = [0,5 1 1 1 1 0,5]	0	0.000241561
F (7/29/2016) = $A_3 \circ R_3$ = [1 1 1 1 1 1]	0	0.000113831

Lampiran 8: Perhitungan *Likelihood Ratio Test*

No	*Date*	*Close*	*Ret**10juta	T-1 Hari	T-5 Hari	T-20 Hari
1	1/2/2014	596.150024	0	T	T	T
2	1/3/2014	585.640015	-0.01763	T	T	T
3	1/6/2014	579.929993	-0.00975	T	T	T
4	1/7/2014	572.289978	-0.01317	T	T	T
5	1/8/2014	576.409973	0.007199	T	T	T
6	1/9/2014	574.280029	-0.0037	T	T	T
7	1/10/2014	582.380005	0.014105	T	T	T
8	1/13/2014	601.809998	0.033363	T	T	T
9	1/15/2014	609.900024	0.013443	T	T	T

10	1/16/2014	606.820007	-0.00505	T	T	T
11	1/17/2014	603.059998	-0.0062	T	T	T
12	1/20/2014	608.320007	0.008722	T	T	T
13	1/21/2014	609.109985	0.001299	T	T	T
14	1/22/2014	614.409973	0.008701	T	T	T
15	1/23/2014	614.969971	0.000911	T	T	T
16	1/24/2014	604.369995	-0.01724	F	T	T
17	1/27/2014	583.880005	-0.0339	T	T	T
18	1/28/2014	588.27002	0.007519	T	T	T
19	1/29/2014	601.539978	0.022558	T	T	T
20	1/30/2014	602.869995	0.002211	T	T	T
21	2/3/2014	595.619995	-0.01203	T	T	T
22	2/4/2014	587.48999	-0.01365	T	T	T
23	2/5/2014	594.5	0.011932	T	T	T
24	2/6/2014	601.059998	0.011034	T	T	T
25	2/7/2014	606.219971	0.008585	T	T	T
26	2/10/2014	603.330017	-0.00477	T	T	T
27	2/11/2014	604.700012	0.002271	T	T	T
28	2/12/2014	609.080017	0.007243	T	T	T
29	2/13/2014	607.219971	-0.00305	T	T	T
30	2/14/2014	608.969971	0.002882	T	T	T
31	2/17/2014	615.609985	0.010904	T	T	T
32	2/18/2014	615.099976	-0.00083	T	T	T
33	2/19/2014	621.72998	0.010779	T	T	T

34	2/20/2014	622.159973	0.000692	T	T	T
35	2/21/2014	626.969971	0.007731	T	T	T
36	2/24/2014	621.940002	-0.00802	T	T	T
37	2/25/2014	614.47998	-0.01199	T	T	T
38	2/26/2014	606.030029	-0.01375	T	T	T
39	2/27/2014	612.840027	0.011237	T	T	T
40	2/28/2014	626.859985	0.022877	T	T	T
41	3/3/2014	618.97998	-0.01257	T	T	T
42	3/4/2014	620.049988	0.001729	T	T	T
43	3/5/2014	628	0.012822	T	T	T
44	3/6/2014	631	0.004777	T	T	T
45	3/7/2014	631.73999	0.001173	T	T	T
46	3/10/2014	632.909973	0.001852	T	T	T
47	3/11/2014	635.349976	0.003855	T	T	T
48	3/12/2014	633.169983	-0.00343	T	T	T
49	3/13/2014	641.309998	0.012856	T	T	T
50	3/14/2014	661.73999	0.031857	T	T	T
51	3/17/2014	663.859985	0.003204	T	T	T
52	3/18/2014	651.320007	-0.01889	T	T	T
53	3/19/2014	655.450012	0.006341	F	T	T
54	3/20/2014	634.169983	-0.03247	T	T	T
55	3/21/2014	636.549988	0.003753	T	T	T
56	3/24/2014	637.789978	0.001948	T	T	T
57	3/25/2014	632.440002	-0.00839	T	T	T

58	3/26/2014	636.47998	0.006388	T	T	T
59	3/27/2014	635.02002	-0.00229	T	T	T
60	3/28/2014	640.409973	0.008488	T	T	T
61	4/1/2014	657.090027	0.026046	T	T	T
62	4/2/2014	655.27002	-0.00277	T	T	T
63	4/3/2014	658.530029	0.004975	T	T	T
64	4/4/2014	653.27002	-0.00799	T	T	T
65	4/7/2014	667.219971	0.021354	T	T	T
66	4/8/2014	666.52002	-0.00105	T	T	T
67	4/9/2014	666.52002	0	F	T	T
68	4/10/2014	643.150024	-0.03506	T	T	T
69	4/11/2014	653.280029	0.015751	T	T	T
70	4/14/2014	659.710022	0.009843	T	T	T
71	4/15/2014	659.780029	0.000106	T	T	T
72	4/16/2014	657.859985	-0.00291	T	T	T
73	4/17/2014	663.590027	0.00871	T	T	T
74	4/21/2014	663.52002	-0.00011	T	T	T
75	4/22/2014	664.130005	0.000919	T	T	T
76	4/23/2014	664.140015	1.51E-05	T	T	T
77	4/24/2014	663.179993	-0.00145	T	T	T
78	4/25/2014	663.210022	4.53E-05	T	T	T
79	4/28/2014	650.320007	-0.01944	T	T	T
80	4/29/2014	645.25	-0.0078	T	T	T
81	4/30/2014	647.669983	0.00375	T	T	T

82	5/2/2014	646.25	-0.00219	T	T	T
83	5/5/2014	648.25	0.003095	T	T	T
84	5/6/2014	647.039978	-0.00187	T	T	T
85	5/7/2014	651.72998	0.007248	T	T	T
86	5/8/2014	652.799988	0.001642	T	T	T
87	5/9/2014	655.950012	0.004825	T	T	T
88	5/12/2014	662.469971	0.00994	T	T	T
89	5/13/2014	661.049988	-0.00214	T	T	T
90	5/14/2014	672.599976	0.017472	T	T	T
91	5/16/2014	680.630005	0.011939	T	T	T
92	5/19/2014	678.080017	-0.00375	F	T	T
93	5/20/2014	660.080017	-0.02655	T	T	T
94	5/21/2014	664.780029	0.00712	T	T	T
95	5/22/2014	672.51001	0.011628	T	T	T
96	5/23/2014	672.109985	-0.00059	T	T	T
97	5/26/2014	671.820007	-0.00043	T	T	T
98	5/28/2014	673.960022	0.003185	F	T	T
99	5/30/2014	656.830017	-0.02542	T	T	T
100	6/2/2014	658.900024	0.003152	T	T	T
101	6/3/2014	662.609985	0.005631	T	T	T
102	6/4/2014	661.619995	-0.00149	T	T	T
103	6/5/2014	663.030029	0.002131	T	T	T
104	6/6/2014	666.400024	0.005083	T	T	T
105	6/9/2014	658.98999	-0.01112	T	T	T

106	6/10/2014	669.179993	0.015463	T	T	T
107	6/11/2014	672.98999	0.005694	T	T	T
108	6/12/2014	666.650024	-0.00942	T	T	T
109	6/13/2014	665.27002	-0.00207	T	T	T
110	6/16/2014	655.900024	-0.01408	T	T	T
111	6/17/2014	661.51001	0.008553	T	T	T
112	6/18/2014	658.049988	-0.00523	T	T	T
113	6/19/2014	654.359985	-0.00561	T	T	T
114	6/20/2014	652.969971	-0.00212	T	T	T
115	6/23/2014	653.440002	0.00072	T	T	T
116	6/24/2014	654.650024	0.001852	T	T	T
117	6/25/2014	651.630005	-0.00461	T	T	T
118	6/26/2014	656.690002	0.007765	T	T	T
119	6/27/2014	651.890015	-0.00731	T	T	T
120	6/30/2014	655	0.004771	T	T	T
121	7/1/2014	656.349976	0.002061	T	T	T
122	7/2/2014	663.859985	0.011442	T	T	T
123	7/3/2014	661.789978	-0.00312	T	T	T
124	7/4/2014	663.630005	0.00278	T	T	T
125	7/7/2014	679.409973	0.023778	T	T	T
126	7/8/2014	683.289978	0.005711	T	T	T
127	7/10/2014	692.849976	0.013991	T	T	T
128	7/11/2014	679.849976	-0.01876	T	T	T
129	7/14/2014	679.710022	-0.00021	T	T	T

130	7/15/2014	688.200012	0.012491	T	T	T
131	7/16/2014	694.48999	0.00914	T	T	T
132	7/17/2014	685.929993	-0.01233	T	T	T
133	7/18/2014	689.789978	0.005627	T	T	T
134	7/21/2014	697.109985	0.010612	T	T	T
135	7/22/2014	692.330017	-0.00686	T	T	T
136	7/23/2014	692.140015	-0.00027	T	T	T
137	7/24/2014	692.460022	0.000462	T	T	T
138	7/25/2014	690.400024	-0.00297	T	T	T
139	8/4/2014	701.22998	0.015686	T	T	T
140	8/5/2014	697.150024	-0.00582	T	T	T
141	8/6/2014	687.880005	-0.0133	T	T	T
142	8/7/2014	690.390015	0.003649	T	T	T
143	8/8/2014	686.72998	-0.0053	T	T	T
144	8/11/2014	697.349976	0.015465	T	T	T
145	8/12/2014	700.190002	0.004073	T	T	T
146	8/13/2014	707.380005	0.010269	T	T	T
147	8/14/2014	703.809998	-0.00505	T	T	T
148	8/15/2014	701.440002	-0.00337	T	T	T
149	8/18/2014	702.469971	0.001468	T	T	T
150	8/19/2014	701.369995	-0.00157	T	T	T
151	8/20/2014	706.219971	0.006915	T	T	T
152	8/21/2014	707.440002	0.001728	T	T	T
153	8/22/2014	704.210022	-0.00457	T	T	T

154	8/25/2014	701.090027	-0.00443	T	T	T
155	8/26/2014	696	-0.00726	T	T	T
156	8/27/2014	698.909973	0.004181	T	T	T
157	8/28/2014	701.52002	0.003734	T	T	T
158	8/29/2014	691.130005	-0.01481	T	T	T
159	9/1/2014	699.5	0.012111	T	T	T
160	9/2/2014	703.049988	0.005075	T	T	T
161	9/3/2014	707.219971	0.005931	T	T	T
162	9/4/2014	702.22998	-0.00706	T	T	T
163	9/5/2014	702.849976	0.000883	T	T	T
164	9/8/2014	707.97998	0.007299	T	T	T
165	9/9/2014	698.210022	-0.0138	T	T	T
166	9/10/2014	688.650024	-0.01369	T	T	T
167	9/11/2014	683.320007	-0.00774	T	T	T
168	9/12/2014	688.679993	0.007844	T	T	T
169	9/15/2014	691.599976	0.00424	T	T	T
170	9/16/2014	691	-0.00087	T	T	T
171	9/17/2014	699.090027	0.011708	T	T	T
172	9/18/2014	702.719971	0.005192	T	T	T
173	9/19/2014	704.710022	0.002832	T	T	T
174	9/22/2014	702.419983	-0.00325	T	T	T
175	9/23/2014	696.190002	-0.00887	T	T	T
176	9/24/2014	692.530029	-0.00526	T	T	T
177	9/25/2014	695	0.003567	T	T	T

178	9/26/2014	687.630005	-0.0106	T	T	T
179	9/29/2014	689.47998	0.00269	T	T	T
180	9/30/2014	687.619995	-0.0027	T	T	T
181	10/1/2014	682.390015	-0.00761	F	T	T
182	10/2/2014	661.700012	-0.03032	T	T	T
183	10/3/2014	658.98999	-0.0041	T	T	T
184	10/6/2014	665.119995	0.009302	T	T	T
185	10/7/2014	671.01001	0.008856	T	T	T
186	10/8/2014	659.349976	-0.01738	T	T	T
187	10/9/2014	662.820007	0.005263	T	T	T
188	10/10/2014	655.98999	-0.0103	T	T	T
189	10/13/2014	647.23999	-0.01334	T	T	T
190	10/14/2014	650.340027	0.00479	T	T	T
191	10/15/2014	652.77002	0.003736	T	T	T
192	10/16/2014	651.97998	-0.00121	T	T	T
193	10/17/2014	663.570007	0.017777	T	T	T
194	10/20/2014	662.619995	-0.00143	T	T	T
195	10/21/2014	661.880005	-0.00112	T	T	T
196	10/22/2014	668.130005	0.009443	T	T	T
197	10/23/2014	671.070007	0.0044	T	T	T
198	10/24/2014	666.409973	-0.00694	T	T	T
199	10/27/2014	658.700012	-0.01157	T	T	T
200	10/28/2014	652.619995	-0.00923	T	T	T
201	10/29/2014	667.799988	0.02326	T	T	T

202	10/30/2014	666.809998	-0.00148	T	T	T
203	10/31/2014	670.440002	0.005444	T	T	T
204	11/3/2014	670.190002	-0.00037	T	T	T
205	11/4/2014	664.450012	-0.00856	T	T	T
206	11/5/2014	665.429993	0.001475	T	T	T
207	11/6/2014	662.140015	-0.00494	T	T	T
208	11/7/2014	654.02002	-0.01226	T	T	T
209	11/10/2014	649.650024	-0.00668	T	T	T
210	11/11/2014	661.679993	0.018518	T	T	T
211	11/12/2014	663.919983	0.003385	T	T	T
212	11/13/2014	665.700012	0.002681	T	T	T
213	11/14/2014	665.840027	0.00021	T	T	T
214	11/17/2014	668.51001	0.00401	T	T	T
215	11/18/2014	675.76001	0.010845	T	T	T
216	11/19/2014	678.640015	0.004262	T	T	T
217	11/20/2014	672.590027	-0.00891	T	T	T
218	11/21/2014	677.52002	0.00733	T	T	T
219	11/24/2014	686.48999	0.013239	T	T	T
220	11/25/2014	680.099976	-0.00931	T	T	T
221	11/26/2014	681.599976	0.002206	T	T	T
222	11/27/2014	684.710022	0.004563	T	T	T
223	11/28/2014	683.02002	-0.00247	T	T	T
224	12/1/2014	685.400024	0.003485	T	T	T
225	12/2/2014	685.919983	0.000759	T	T	T

226	12/3/2014	681.73999	-0.00609	T	T	T
227	12/4/2014	686.690002	0.007261	T	T	T
228	12/5/2014	688.280029	0.002315	T	T	T
229	12/8/2014	680.77002	-0.01091	T	T	T
230	12/9/2014	678.710022	-0.00303	T	T	T
231	12/10/2014	682.719971	0.005908	T	T	T
232	12/11/2014	679.659973	-0.00448	T	T	T
233	12/12/2014	680.390015	0.001074	T	T	T
234	12/15/2014	674.280029	-0.00898	T	T	T
235	12/16/2014	663.390015	-0.01615	T	T	T
236	12/17/2014	661.599976	-0.0027	T	T	T
237	12/18/2014	675.48999	0.020995	T	T	T
238	12/19/2014	679.179993	0.005463	T	T	T
239	12/29/2014	685.840027	0.009806	T	T	T
240	12/30/2014	691.039978	0.007582	T	T	T
241	12/31/2014	691.039978	0	T	T	T
242	1/2/2015	694.469971	0.004964	T	T	T
243	1/5/2015	689.090027	-0.00775	T	T	T
244	1/6/2015	681.070007	-0.01164	T	T	T
245	1/7/2015	687.51001	0.009456	T	T	T
246	1/8/2015	688.140015	0.000916	T	T	T
247	1/9/2015	688.950012	0.001177	T	T	T
248	1/12/2015	683.780029	-0.0075	T	T	T
249	1/13/2015	692.150024	0.012241	T	T	T

250	1/14/2015	681.659973	-0.01516	T	T	T
251	1/15/2015	687.570007	0.00867	T	T	T
252	1/16/2015	681.690002	-0.00855	T	T	T
253	1/19/2015	681.640015	-7.3E-05	T	T	T
254	1/20/2015	688.619995	0.01024	T	T	T
255	1/21/2015	702.099976	0.019575	T	T	T
256	1/22/2015	708.840027	0.0096	T	T	T
257	1/23/2015	716.72998	0.011131	T	T	T
258	1/26/2015	705.429993	-0.01577	T	T	T
259	1/27/2015	707.710022	0.003232	T	T	T
260	1/28/2015	706.090027	-0.00229	T	T	T
261	1/29/2015	703.099976	-0.00423	T	T	T
262	1/30/2015	706.679993	0.005092	T	T	T
263	2/2/2015	701.5	-0.00733	T	T	T
264	2/3/2015	704.640015	0.004476	T	T	T
265	2/4/2015	708.719971	0.00579	T	T	T
266	2/5/2015	700.400024	-0.01174	T	T	T
267	2/6/2015	711.52002	0.015877	T	T	T
268	2/9/2015	710.890015	-0.00089	T	T	T
269	2/10/2015	707.01001	-0.00546	T	T	T
270	2/11/2015	712.140015	0.007256	T	T	T
271	2/12/2015	713.97998	0.002584	T	T	T
272	2/13/2015	721.530029	0.010575	T	T	T
273	2/16/2015	709.599976	-0.01653	T	T	T

274	2/17/2015	714.340027	0.00668	T	T	T
275	2/18/2015	718.679993	0.006075	T	T	T
276	2/19/2015	718.679993	0	T	T	T
277	2/20/2015	715.359985	-0.00462	T	T	T
278	2/23/2015	718.390015	0.004236	T	T	T
279	2/24/2015	720.429993	0.00284	T	T	T
280	2/25/2015	727.440002	0.00973	T	T	T
281	2/26/2015	727.369995	-9.6E-05	T	T	T
282	2/27/2015	722.099976	-0.00725	T	T	T
283	3/2/2015	728.609985	0.009015	T	T	T
284	3/3/2015	730.200012	0.002182	T	T	T
285	3/4/2015	723.390015	-0.00933	T	T	T
286	3/5/2015	722.090027	-0.0018	T	T	T
287	3/6/2015	734.849976	0.017671	T	T	T
288	3/9/2015	724.650024	-0.01388	T	T	T
289	3/10/2015	725.849976	0.001656	T	T	T
290	3/11/2015	720.530029	-0.00733	T	T	T
291	3/12/2015	723.77002	0.004497	T	T	T
292	3/13/2015	723.679993	-0.00012	T	T	T
293	3/16/2015	725.349976	0.002308	T	T	T
294	3/17/2015	724.679993	-0.00092	T	T	T
295	3/18/2015	718.320007	-0.00878	T	T	T
296	3/19/2015	724.859985	0.009105	T	T	T
297	3/20/2015	721.669983	-0.0044	T	T	T

298	3/23/2015	721	-0.00093	T	T	T
299	3/24/2015	721.5	0.000693	T	T	T
300	3/25/2015	711.030029	-0.01451	T	T	T
301	3/26/2015	703.47998	-0.01062	T	T	T
302	3/27/2015	709.97998	0.00924	T	T	T
303	3/30/2015	720.5	0.014817	T	T	T
304	3/31/2015	728.200012	0.010687	T	T	T
305	4/1/2015	718.590027	-0.0132	T	T	T
306	4/2/2015	716.799988	-0.00249	T	T	T
307	4/6/2015	720.869995	0.005678	T	T	T
308	4/7/2015	727.559998	0.00928	T	T	T
309	4/8/2015	719.98999	-0.0104	T	T	T
310	4/9/2015	723.849976	0.005361	T	T	T
311	4/10/2015	722.080017	-0.00245	T	T	T
312	4/13/2015	717.429993	-0.00644	T	T	T
313	4/14/2015	711.109985	-0.00881	T	T	T
314	4/15/2015	711.090027	-2.8E-05	T	T	T
315	4/16/2015	710.409973	-0.00096	T	T	T
316	4/17/2015	709.330017	-0.00152	T	T	T
317	4/20/2015	704.25	-0.00716	T	T	T
318	4/21/2015	717.97998	0.019496	T	T	T
319	4/22/2015	716.119995	-0.00259	T	T	T
320	4/23/2015	718.849976	0.003812	T	T	T
321	4/24/2015	723.289978	0.006177	F	T	T

322	4/27/2015	698.23999	-0.03463	T	T	T
323	4/28/2015	701.080017	0.004067	F	T	T
324	4/29/2015	674.869995	-0.03739	T	T	T
325	4/30/2015	664.799988	-0.01492	T	T	T
326	5/1/2015	664.799988	0	T	T	T
327	5/4/2015	679.159973	0.0216	T	T	T
328	5/5/2015	686.25	0.010439	T	T	T
329	5/6/2015	692.299988	0.008816	T	T	T
330	5/7/2015	685.969971	-0.00914	T	T	T
331	5/8/2015	696.700012	0.015642	T	T	T
332	5/11/2015	696.159973	-0.00078	T	T	T
333	5/12/2015	696.950012	0.001135	T	T	T
334	5/13/2015	706.030029	0.013028	T	T	T
335	5/15/2015	708.849976	0.003994	T	T	T
336	5/18/2015	708.51001	-0.00048	T	T	T
337	5/19/2015	711.75	0.004573	T	T	T
338	5/20/2015	714.799988	0.004285	T	T	T
339	5/21/2015	712.280029	-0.00353	T	T	T
340	5/22/2015	711.77002	-0.00072	T	T	T
341	5/25/2015	711.27002	-0.0007	T	T	T
342	5/26/2015	719.299988	0.01129	T	T	T
343	5/27/2015	707.77002	-0.01603	T	T	T
344	5/28/2015	707.159973	-0.00086	T	T	T
345	5/29/2015	698.070007	-0.01285	T	T	T

346	6/1/2015	700.650024	0.003696	T	T	T
347	6/3/2015	692.400024	-0.01177	T	T	T
348	6/4/2015	685.289978	-0.01027	T	T	T
349	6/5/2015	684.75	-0.00079	T	T	T
350	6/8/2015	672.869995	-0.01735	F	T	T
351	6/9/2015	655.700012	-0.02552	T	T	T
352	6/10/2015	664.75	0.013802	T	T	T
353	6/11/2015	666.599976	0.002783	T	T	T
354	6/12/2015	665.659973	-0.00141	F	T	T
355	6/15/2015	648.039978	-0.02647	T	T	T
356	6/16/2015	653.030029	0.0077	T	T	T
357	6/17/2015	660.820007	0.011929	T	T	T
358	6/18/2015	665.059998	0.006416	T	T	T
359	6/19/2015	666.820007	0.002646	T	T	T
360	6/22/2015	661.640015	-0.00777	T	T	T
361	6/23/2015	657.109985	-0.00685	T	T	T
362	6/24/2015	666.369995	0.014092	T	T	T
363	6/25/2015	659.789978	-0.00987	T	T	T
364	6/26/2015	658.849976	-0.00142	T	T	T
365	6/29/2015	652.820007	-0.00915	T	T	T
366	6/30/2015	656.98999	0.006388	T	T	T
367	7/1/2015	654.809998	-0.00332	T	T	T
368	7/2/2015	662.419983	0.011622	T	T	T

369	7/3/2015	670.929993	0.012847	T	T	T
370	7/6/2015	661.369995	-0.01425	T	T	T
371	7/7/2015	657.719971	-0.00552	T	T	T
372	7/8/2015	653.25	-0.0068	T	T	T
373	7/9/2015	645.590027	-0.01173	T	T	T
374	7/10/2015	648.73999	0.004879	T	T	T
375	7/13/2015	654.820007	0.009372	T	T	T
376	7/14/2015	655.900024	0.001649	T	T	T
377	7/15/2015	653.650024	-0.00343	T	T	T
378	7/22/2015	658.390015	0.007252	T	T	T
379	7/23/2015	656.340027	-0.00311	T	T	T
380	7/24/2015	646.940002	-0.01432	F	T	T
381	7/27/2015	632.140015	-0.02288	T	T	T
382	7/28/2015	628.630005	-0.00555	T	T	T
383	7/29/2015	629.099976	0.000748	T	T	T
384	7/30/2015	628.900024	-0.00032	T	T	T
385	7/31/2015	641.969971	0.020782	T	T	T
386	8/3/2015	636.98999	-0.00776	T	T	T
387	8/4/2015	634.219971	-0.00435	T	T	T
388	8/5/2015	644.25	0.015815	T	T	T
389	8/6/2015	634.640015	-0.01492	T	T	T
390	8/7/2015	631.77002	-0.00452	T	T	T

391	8/10/2015	628.830017	-0.00465	F	T	T
392	8/11/2015	607.75	-0.03352	F	T	T
393	8/12/2015	585.320007	-0.03691	T	T	T
394	8/13/2015	605.299988	0.034135	T	T	T
395	8/14/2015	606.409973	0.001834	T	T	T
396	8/18/2015	597.190002	-0.0152	T	T	T
397	8/19/2015	592.130005	-0.00847	T	T	T
398	8/20/2015	587.98999	-0.00699	F	T	T
399	8/21/2015	572.01001	-0.02718	F	T	T
400	8/24/2015	544.390015	-0.04829	T	F	T
401	8/25/2015	554.869995	0.019251	T	T	T
402	8/26/2015	553.090027	-0.00321	T	T	T
403	8/27/2015	585.169983	0.058001	T	T	T
404	8/28/2015	586.090027	0.001572	T	T	T
405	8/31/2015	598.280029	0.020799	F	T	T
406	9/1/2015	584.099976	-0.0237	T	T	T
407	9/2/2015	582.659973	-0.00247	T	T	T
408	9/3/2015	590.890015	0.014125	T	T	T
409	9/4/2015	589.140015	-0.00296	F	T	T
410	9/7/2015	565.330017	-0.04041	T	T	T
411	9/8/2015	567.340027	0.003555	T	T	T
412	9/9/2015	574.98999	0.013484	T	T	T

413	9/10/2015	577.059998	0.0036	T	T	T
414	9/11/2015	584.900024	0.013586	T	T	T
415	9/14/2015	591.679993	0.011592	T	T	T
416	9/15/2015	580.280029	-0.01927	T	T	T
417	9/16/2015	577.070007	-0.00553	T	T	T
418	9/17/2015	584.429993	0.012754	T	T	T
419	9/18/2015	584.840027	0.000702	T	T	T
420	9/21/2015	583.280029	-0.00267	T	T	T
421	9/22/2015	576.159973	-0.01221	F	T	T
422	9/23/2015	561.530029	-0.02539	T	T	T
423	9/25/2015	557.22998	-0.00766	F	T	T
424	9/28/2015	542	-0.02733	T	T	T
425	9/29/2015	554.429993	0.022934	T	T	T
426	9/30/2015	556.090027	0.002994	T	T	T
427	10/1/2015	563.059998	0.012534	T	T	T
428	10/2/2015	553.869995	-0.01632	T	T	T
429	10/5/2015	576.340027	0.040569	T	T	T
430	10/6/2015	596.679993	0.035292	T	T	T
431	10/7/2015	602.549988	0.009838	T	T	T
432	10/8/2015	601.150024	-0.00232	T	T	T
433	10/9/2015	615.429993	0.023754	T	T	T
434	10/12/2015	619.080017	0.005931	F	T	T

435	10/13/2015	592.97998	-0.04216	T	T	T
436	10/15/2015	599.47998	0.010962	T	T	T
437	10/16/2015	602.01001	0.00422	T	T	T
438	10/19/2015	612.109985	0.016777	T	T	T
439	10/20/2015	612.840027	0.001193	T	T	T
440	10/21/2015	616.929993	0.006674	T	T	T
441	10/22/2015	611.340027	-0.00906	T	T	T
442	10/23/2015	620.23999	0.014558	T	T	T
443	10/26/2015	623.609985	0.005433	T	T	T
444	10/27/2015	620.940002	-0.00428	T	T	T
445	10/28/2015	610.900024	-0.01617	F	T	T
446	10/29/2015	586.969971	-0.03917	T	T	T
447	10/30/2015	586.099976	-0.00148	T	T	T
448	11/2/2015	593.580017	0.012762	T	T	T
449	11/3/2015	599.469971	0.009923	T	T	T
450	11/4/2015	610.469971	0.01835	T	T	T
451	11/5/2015	605.22998	-0.00858	T	T	T
452	11/6/2015	603.789978	-0.00238	F	T	T
453	11/9/2015	591.369995	-0.02057	T	T	T
454	11/10/2015	582.210022	-0.01549	T	T	T
455	11/11/2015	584.880005	0.004586	T	T	T
456	11/12/2015	582.47998	-0.0041	T	T	T

457	11/13/2015	587.549988	0.008704	T	T	T
458	11/16/2015	581.530029	-0.01025	T	T	T
459	11/17/2015	589.299988	0.013361	T	T	T
460	11/18/2015	593.789978	0.007619	T	T	T
461	11/19/2015	596.859985	0.00517	T	T	T
462	11/20/2015	604.539978	0.012867	T	T	T
463	11/23/2015	595.599976	-0.01479	T	T	T
464	11/24/2015	594.880005	-0.00121	T	T	T
465	11/25/2015	599.280029	0.007396	T	T	T
466	11/26/2015	601.789978	0.004188	T	T	T
467	11/27/2015	601.039978	-0.00125	F	T	T
468	11/30/2015	579.799988	-0.03534	T	T	T
469	12/1/2015	598.030029	0.031442	T	T	T
470	12/2/2015	596.900024	-0.00189	T	T	T
471	12/3/2015	596.570007	-0.00055	T	T	T
472	12/4/2015	592.900024	-0.00615	T	T	T
473	12/7/2015	595.719971	0.004756	F	T	T
474	12/8/2015	582.210022	-0.02268	T	T	T
475	12/10/2015	578.299988	-0.00672	F	T	T
476	12/11/2015	565.090027	-0.02284	T	T	T
477	12/14/2015	565.630005	0.000956	T	T	T
478	12/15/2015	573.179993	0.013348	T	T	T

479	12/16/2015	583.169983	0.017429	T	T	T
480	12/17/2015	600.52002	0.029751	F	T	T
481	12/18/2015	588.219971	-0.02048	T	T	T
482	12/21/2015	591.690002	0.005899	T	T	T
483	12/22/2015	595.599976	0.006608	T	T	T
484	12/23/2015	593.25	-0.00395	T	T	T
485	12/28/2015	597.280029	0.006793	T	T	T
486	12/29/2015	599.440002	0.003616	T	T	T
487	12/30/2015	603.349976	0.006523	T	T	T
488	1/4/2016	592.109985	-0.01863	T	T	T
489	1/5/2016	597.26001	0.008698	T	T	T
490	1/6/2016	612.219971	0.025048	F	T	T
491	1/7/2016	599.380005	-0.02097	T	T	T
492	1/8/2016	600.47998	0.001835	F	T	T
493	1/11/2016	586.710022	-0.02293	T	T	T
494	1/12/2016	596.039978	0.015902	T	T	T
495	1/13/2016	601.859985	0.009764	T	T	T
496	1/14/2016	594.119995	-0.01286	T	T	T
497	1/15/2016	594.640015	0.000875	T	T	T
498	1/18/2016	587.5	-0.01201	T	T	T
499	1/19/2016	592.400024	0.00834	T	T	T
500	1/20/2016	582.799988	-0.01621	T	T	T

501	1/21/2016	581.780029	-0.00175	T	T	T
502	1/22/2016	590.669983	0.015281	T	T	T
503	1/25/2016	595.409973	0.008025	T	T	T
504	1/26/2016	594.950012	-0.00077	T	T	T
505	1/27/2016	605.22998	0.017279	T	T	T
506	1/28/2016	607.75	0.004164	T	T	T
507	1/29/2016	612.75	0.008227	T	T	T
508	2/1/2016	611.099976	-0.00269	T	T	T
509	2/2/2016	603.719971	-0.01208	T	T	T
510	2/3/2016	610.22998	0.010783	T	T	T
511	2/4/2016	621.97998	0.019255	T	T	T
512	2/5/2016	642.549988	0.033072	T	T	T
513	2/9/2016	636.130005	-0.00999	T	T	T
514	2/10/2016	634.169983	-0.00308	T	T	T
515	2/11/2016	643.97998	0.015469	F	T	T
516	2/12/2016	630.48999	-0.02095	T	T	T
517	2/15/2016	633.969971	0.005519	T	T	T
518	2/16/2016	635.289978	0.002082	T	T	T
519	2/17/2016	638.289978	0.004722	T	T	T
520	2/18/2016	641.419983	0.004904	T	T	T
521	2/19/2016	631.059998	-0.01615	T	T	T
522	2/22/2016	631.76001	0.001109	T	T	T

523	2/23/2016	623.530029	-0.01303	T	T	T
524	2/24/2016	620.820007	-0.00435	T	T	T
525	2/25/2016	623.929993	0.005009	T	T	T
526	2/26/2016	636.619995	0.020339	T	T	T
527	2/29/2016	641.859985	0.008231	T	T	T
528	3/1/2016	648.919983	0.010999	T	T	T
529	3/2/2016	660	0.017075	T	T	T
530	3/3/2016	657.369995	-0.00398	T	T	T
531	3/4/2016	654.52002	-0.00434	T	T	T
532	3/7/2016	650.559998	-0.00605	T	T	T
533	3/8/2016	648.359985	-0.00338	T	T	T
534	3/10/2016	649.179993	0.001265	T	T	T
535	3/11/2016	653.01001	0.0059	T	T	T
536	3/14/2016	665.469971	0.019081	T	T	T
537	3/15/2016	658.030029	-0.01118	T	T	T
538	3/16/2016	661.669983	0.005532	T	T	T
539	3/17/2016	668.140015	0.009778	T	T	T
540	3/18/2016	669.299988	0.001736	T	T	T
541	3/21/2016	668.26001	-0.00155	T	T	T
542	3/22/2016	664.190002	-0.00609	T	T	T
543	3/23/2016	656.98999	-0.01084	T	T	T
544	3/24/2016	653.179993	-0.0058	T	T	T

545	3/28/2016	646.070007	-0.01089	T	T	T
546	3/29/2016	645	-0.00166	T	T	T
547	3/30/2016	650.669983	0.008791	T	T	T
548	3/31/2016	652.690002	0.003105	T	T	T
549	4/1/2016	657.01001	0.006619	T	T	T
550	4/4/2016	662.130005	0.007793	T	T	T
551	4/5/2016	658.549988	-0.00541	T	T	T
552	4/6/2016	660.390015	0.002794	T	T	T
553	4/7/2016	661.059998	0.001015	T	T	T
554	4/8/2016	660.429993	-0.00095	T	T	T
555	4/11/2016	650.169983	-0.01554	T	T	T
556	4/12/2016	658.73999	0.013181	T	T	T
557	4/13/2016	661.890015	0.004782	T	T	T
558	4/14/2016	654.909973	-0.01055	T	T	T
559	4/15/2016	667.809998	0.019697	T	T	T
560	4/18/2016	673.349976	0.008296	T	T	T
561	4/19/2016	679.51001	0.009148	T	T	T
562	4/20/2016	678.590027	-0.00135	T	T	T
563	4/21/2016	682.559998	0.00585	T	T	T
564	4/22/2016	683.119995	0.00082	T	T	T
565	4/25/2016	678.809998	-0.00631	T	T	T
566	4/26/2016	666.419983	-0.01825	T	T	T

567	4/27/2016	663.190002	-0.00485	T	T	T
568	4/28/2016	656.409973	-0.01022	T	T	T
569	4/29/2016	653.26001	-0.0048	T	T	T
570	5/2/2016	645.599976	-0.01173	T	T	T
571	5/3/2016	645.719971	0.000186	T	T	T
572	5/4/2016	650.47998	0.007372	T	T	T
573	5/9/2016	640.72998	-0.01499	T	T	T
574	5/10/2016	643.789978	0.004776	T	T	T
575	5/11/2016	651.070007	0.011308	T	T	T
576	5/12/2016	648.969971	-0.00323	T	T	T
577	5/13/2016	640.130005	-0.01362	T	T	T
578	5/16/2016	634.320007	-0.00908	T	T	T
579	5/17/2016	636.47998	0.003405	T	T	T
580	5/18/2016	639.119995	0.004148	T	T	T
581	5/19/2016	632.159973	-0.01089	T	T	T
582	5/20/2016	632.909973	0.001186	T	T	T
583	5/23/2016	638.890015	0.009448	T	T	T
584	5/24/2016	635.26001	-0.00568	T	T	T
585	5/25/2016	648.48999	0.020826	T	T	T
586	5/26/2016	649.359985	0.001342	T	T	T
587	5/27/2016	655.650024	0.009687	T	T	T
588	5/30/2016	653.940002	-0.00261	T	T	T

589	5/31/2016	648.849976	-0.00778	T	T	T
590	6/1/2016	654.669983	0.00897	T	T	T
591	6/2/2016	653.48999	-0.0018	T	T	T
592	6/3/2016	658	0.006901	T	T	T
593	6/6/2016	667.530029	0.014483	T	T	T
594	6/7/2016	674.030029	0.009737	T	T	T
595	6/8/2016	669.119995	-0.00728	T	T	T
596	6/9/2016	663.700012	-0.0081	T	T	T
597	6/10/2016	657.700012	-0.00904	T	T	T
598	6/13/2016	652.909973	-0.00728	T	T	T
599	6/14/2016	655.590027	0.004105	T	T	T
600	6/15/2016	660.359985	0.007276	T	T	T
601	6/16/2016	657.039978	-0.00503	T	T	T
602	6/17/2016	662.549988	0.008386	T	T	T
603	6/20/2016	666.909973	0.006581	T	T	T
604	6/21/2016	668.640015	0.002594	T	T	T
605	6/22/2016	672.98999	0.006506	T	T	T
606	6/23/2016	670	-0.00444	T	T	T
607	6/24/2016	663.940002	-0.00904	T	T	T
608	6/27/2016	665.570007	0.002455	T	T	T
609	6/28/2016	671.02002	0.008188	T	T	T
610	6/29/2016	688.849976	0.026571	T	T	T

611	6/30/2016	694.340027	0.00797	T	T	T
612	7/1/2016	686.840027	-0.0108	T	T	T
613	7/11/2016	701.659973	0.021577	T	T	T
614	7/12/2016	703.059998	0.001995	T	T	T
615	7/13/2016	714.390015	0.016115	T	T	T
616	7/14/2016	700.159973	-0.01992	T	T	T
617	7/15/2016	704.659973	0.006427	T	T	T
618	7/18/2016	708.559998	0.005535	T	T	T
619	7/19/2016	712.440002	0.005476	T	T	T
620	7/20/2016	717.960022	0.007748	T	T	T
621	7/21/2016	709.809998	-0.01135	T	T	T
622	7/22/2016	709.440002	-0.00052	T	T	T
623	7/25/2016	719.859985	0.014688	T	T	T
624	7/26/2016	722.48999	0.003653	T	T	T
625	7/27/2016	733.72998	0.015557	T	T	T
626	7/28/2016	740.450012	0.009159	T	T	T
627	7/29/2016	726.609985	-0.01869	T	T	T
			Total *Failures*	0	29	1

DAFTAR RIWAYAT HIDUP

Nama : Mohammad Amin Nur Rosyid

Jenis Kelamin : Laki-Laki

Alamat : Jebresan RT/RW 005/021 Kalitirto Berbah Sleman Yogyakarta

Tempat/Tanggal Lahir : Klaten 28 April 1994

Status : Belum Menikah

Agama : Islam

Phone : 0857 1227 19710

Pendidikan Formal

2012 - 2017 : Fakultas Sains dan Teknologi, Universitas Islam Negeri Sunan Kalijaga Yogyakarta

2009 - 2012 : SMA Muhammadiyah 1 Prambanan

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2000 - 2006 : SD Muhammadiyah Karang Harjo