

**ANALISIS RISIKO INVESTASI PASANGAN SAHAM SYARIAH  
DENGAN METODE *FRANK COPULA*  
(Studi Kasus : Saham SMGR.JK dan INTP.JK  
periode 01 Januari 2014 sampai 22 April 2015)**

Skripsi

untuk memenuhi sebagian persyaratan  
mencapai derajat Sarjana S-1

Program Studi Matematika



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YOGYAKARTA  
2015**

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UIN Sunan Kalijaga Yogyakarta  
di Yogyakarta

*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.

Dengan ini kami berharap agar skripsi/tugas akhir Saudara tersebut di atas dapat segera dimunaqosyahkan. Atas perhatiannya kami ucapkan terima kasih.

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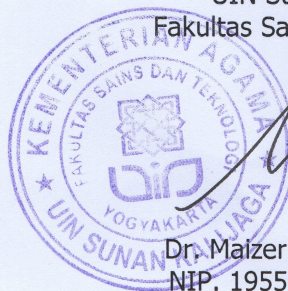
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menyatakan dengan sesungguhnya bahwa dalam skripsi saya ini **tidak terdapat karya serupa yang diajukan untuk memperoleh gelar kesarjanaan disuatu perguruan tinggi lain** dan skripsi saya ini adalah asli karya saya sendiri dan bukan meniru hasil skripsi karya orang lain.

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Yang menyatakan,



Dimas Prabawan A.P.

11610011

## HALAMAN PERSEMBAHAN

*ALLAH SWT*

*My great MOM*

*Mitut Raharjo*

*My strrong FATHER*

*Raharjo*

*My lazy SISTER*

*Mangesti*

*My beautifull BROTHER*

*Arjuna*

*My cmemew*

*Neffy ^^*

## MOTTO

*Semakin sakit pengalamammu semakin kuat kau akan tumbuh*

*My life my rules*

*Imagination is more important than knowledge*

*(Penulis)*



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Yogyakarta, 6 Juli 2015

Yang menyatakan,

Dimas Prabawan A.P.

11610011



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## DAFTAR SIMBOL

|                 |   |
|-----------------|---|
| $E(x)$          | : nilai ekspektasi                                  |
| $\mu$           | : <i>mean</i>                                       |
| $\sigma^2$      | : variansi  |
| $\sigma$        | : standar deviasi                                   |
| $R_t$           | : <i>return</i> harga saham pada periode t          |
| $R_{pt}$        | : <i>return</i> pasangan harga saham pada periode t |
| $P_t$           | : harga saham pada saat t                           |
| $P_{t-1}$       | : harga saham pada saat t-1                         |
| $P$             | : probabilitas                                      |
| $\varepsilon_t$ | : nilai kesalahan ( <i>residual</i> ) pada saat t   |
| $c$             | : nilai konstanta                                   |
| $y_t$           | : variabel y pada saat t                            |
| $\bar{y}$       | : nilai rata-rata ( <i>mean</i> )                   |
| $\lambda$       | : parameter transformasi                            |
| $\beta_p$       | : parameter <i>autoregressive</i> ke-p              |
| $\varrho_q$     | : parameter <i>moving average</i> ke-q              |
| $C$             | : <i>copula</i>                                     |
| $C'$            | : <i>sub-copula</i>                                 |
| $C(u, v)$       | : fungsi copula bivariat                            |
| $K$             | : konkordan   |
| $D$             | : diskordan   |



|             |   |
|-------------|---|
| $S$         | : <i>skewness</i>   |
| $K$         | : <i>kurtosis</i>   |
| $\phi$      | : generator   |
| $\phi^{-1}$ | : invers dari generator $\phi$                              |
| $u$         | : residual saham WIKA.JK yang berdistribusi <i>uniform</i>  |
| $v$         | : residual saham PTPP.JK. yang berdistribusi <i>uniform</i> |
| $\tau$      | : fungsi <i>Kendall's Tau</i>                               |
| $\tau_A$    | : fungsi <i>Kendall's Tau</i> copula <i>Archimedean</i>     |
| $\tau_F$    | : fungsi <i>Kendall's Tau</i> copula <i>Gumbel</i>          |
| $\theta$    | : parameter <i>frank copula</i>                             |
| $H$         | : fungsi distribusi gabungan                                |
| $F$ dan $G$ | : fungsi distribusi marginal                                |
| $\equiv$    | : didefinisikan sebagai                                     |

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Periode 01 Januari 2014 – 22 April 2015)**

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11610011**

**ABSTRAK**

Investasi saham menjadikan harta yang dimiliki menjadi lebih produktif dan meningkatkan pertumbuhan ekonomi bagi masyarakat. Investasi saham memiliki risiko dan *return*. Risiko dapat diukur dengan menganalisa data saham menggunakan alat *Value at Risk* (VaR). VaR memiliki asumsi normalitas yang sulit terpenuhi oleh data saham. Oleh karena itu, dikembangkan sebuah metode yaitu metode *frank copula* untuk mengatasi permasalahan tersebut. Metode *frank copula* tidak mengasumsikan data berdistribusi normal dan mampu menangkap depedensi dengan nilai negatif maupun positif dari pasangan saham. Metode *frank copula* dapat digunakan untuk estimasi VaR dengan pendekatan simulasi *monte carlo*.

Data saham yang digunakan adalah data *return* pasangan saham syariah Semen Indonesia Tbk. (SMGR.JK) dan *Indocement* Tunggul Prakasa Tbk. (INTP.JK) pada periode 01 januari 2014 sampai 22 april 2015. Langkah-langkah dalam analisis risiko pasangan saham dengan metode *frank copula*, adalah memodelkan masing-masing data saham, estimasi parameter model *frank copula*, transformasi masing-masing data residual saham, bentuk struktur depedensi *frank copula*, bangkitkan variabel acak dengan model *frank copula*, dan yang terakhir melakukan simulasi *monte carlo* untuk memperoleh nilai VaR.

Berdasarkan langkah analisis diperoleh model *frank copula* dari pasangan saham SMGR.JK dan INTP.JK periode 01 januari 2014 sampai 22 april 2015 adalah  $C(u, v) = -\frac{1}{7.1128} \ln\{1 + ((e^{-7.1128u} - 1)(e^{-7.1128v} - 1)/(e^{-7.1128u} - 1))\}$ , diperoleh bahwa, dengan investasi sebesar Rp.100.000.000,00 menghasilkan perkiraan risiko pada tingkat kepercayaan 90%, 95%, dan 99% secara berturut-turut adalah sebesar Rp.4.936.200,00, Rp.5.744.000,00, dan Rp.7.164.300,00

**Kata kunci :** *Copula, Frank Copula, simulasi monte carlo, Value at Risk (VaR).*

# BAB I PENDAHULUAN

## 1.1. Latar Belakang

Investasi merupakan aktivitas muamalah yang sangat dianjurkan, karena dengan berinvestasi harta yang dimiliki menjadi lebih produktif dan meningkatkan pertumbuhan ekonomi bagi masyarakat. Proses investasi harus dimulai dengan akad yang jelas dan transparan, dengan menghindari hal-hal yang bersifat *maysir* (judi), *gharar* (tidak jelas), dan *riba*, setelah semua hal itu terpenuhi baru dipikirkan aspek pertimbangan rasional (Najib dkk, 2008 : 93). Jenis investasi yang sedang populer saat ini adalah saham. Investasi saham memiliki risiko dan *return*, semakin tinggi risiko semakin tinggi juga keuntungannya. Risiko dapat diukur dengan alat ukur *Value at Risk* (VaR) yang diperoleh dengan menganalisis data saham.

Data saham merupakan data yang diperoleh dari pengamatan harga saham dalam kurun waktu tertentu. Oleh karena itu karakteristik data saham dapat dikategorikan ke dalam data runtun waktu, akan tetapi sebagian data runtun waktu mengandung masalah *Autocorrelation* dan *Heterocedasticity* sehingga harus dimodelkan terlebih dahulu. Pemodelan data runtun waktu yang paling populer dan banyak digunakan adalah model *Autoregressive Integrated Moving Average* (ARIMA) dan model *Generalized Autoregressive Conditional Heterocedasticity* (GARCH) (Makridakis, 1998 : 381). Pemodelan ARIMA-GARCH pada data saham, sering ditemukan permasalahan umum yaitu, data saham sulit untuk berdistribusi normal dan berbentuk *leptokurtic* sehingga perhitungan VaR kurang

tepat. (Kirabo, 2013 : 16). Untuk mengatasi permasalahan tersebut diperkenalkan sebuah alat yaitu *copula*.

Teori *copula* pertama kali dikembangkan oleh Sklar (1959). *Copula* tidak memerlukan asumsi apapun termasuk asumsi distribusi normal yang sulit dipenuhi dari data saham. *Copula* merupakan pemodelan distribusi gabungan (*joint distribution*) yang dapat digunakan untuk mengukur VaR (*Value at Risk*) dengan menggunakan pendekatan simulasi *monte carlo*. *Copula* dapat menangkap struktur dependensi dari distribusi gabungan, oleh karena itu pada penelitian ini akan menggabungkan (memasangkan) dua saham syariah dalam *Jakarta Islamic Index* (JII).

*Copula* mempunyai banyak kelas salah satunya adalah *archimedean copula*, yang mudah digunakan, memiliki banyak variasi, dan fleksibel (Nelsen, 2006 : 109). *Archimedean copula* memiliki beberapa anggota keluarga, yaitu *clayton copula*, *frank copula*, dan *gumbel copula*. *Frank copula* cukup terkenal untuk beberapa alasan yaitu, *frank copula* dapat menyatakan hubungan dependensi dalam positif ataupun negatif, struktur dependensi *frank copula* simetris, dan cakupan jarak dependensi yang diijinkan sangat luas (Pravin K., 2007 : 18).

Berdasarkan latar belakang tersebut, maka digunakan *copula* untuk menganalisis risiko investasi pasangan saham syariah. Dalam penelitian ini dipilih salah satu keluarga dari *archimedean copula* yaitu *frank copula*. Oleh karena itu judul dari penelitian ini adalah “Analisis risiko investasi pasangan saham syariah dengan metode *Frank Copula*”.

## 1.2. Batasan Masalah

Pada penelitian ini terdapat beberapa batasan-batasan yang akan diteliti untuk mempermudah peneliti dalam penelitian, yaitu :

1. Masalah yang dibahas pada penelitian ini dibatasi hanya pada perhitungan risiko pasangan saham SMGR.JK (Semen Indonesia Tbk.) dan INTP.JK (*Indocement* Tunggak Prakasa Tbk.) periode 1 Januari 2014 sampai 22 April 2015 dengan *Frank Copula*.
2. Menghitung estimasi parameter model *Frank Copula* dengan menggunakan pendekatan *Kendall's Tau*.
3. Model *Frank Copula* pada penelitian ini dibatasi pada kasus bivariat.
4. Data yang digunakan adalah data harga penutupan saham SMGR.JK (Semen Indonesia Tbk.) dan saham INTP.JK (*Indocement* Tunggak Prakasa Tbk.) periode 1 Januari 2014 sampai 22 April 2015.
5. *Software* yang digunakan dalam penelitian ini adalah : E-Views 7 dan MATLAB R2013a.

## 1.3. Rumusan Masalah

Berdasarkan latar belakang di atas, dapat dirumuskan permasalahan sebagai berikut :

1. Bagaimana langkah-langkah analisis risiko investasi pasangan saham SMGR.JK (Semen Indonesia Tbk.) dan INTP.JK (*Indocement* Tunggak Prakasa Tbk.) periode 1 Januari 2014 sampai 22 April 2015, dengan menggunakan metode *frank copula*?

2. Bagaimana bentuk model *frank copula* untuk mengukur besar risiko investasi pasangan saham SMGR.JK (Semen Indonesia Tbk.) dan INTP.JK (*Indocement* Tunggak Prakasa Tbk.) periode 1 Januari 2014 sampai 22 April 2015?
3. Berapa besar risiko investasi pada pasangan saham SMGR.JK (Semen Indonesia Tbk.) dan INTP.JK (*Indocement* Tunggak Prakasa Tbk.) periode 1 Januari 2014 sampai 22 April 2015, menggunakan metode *frank copula*?

#### **1.4. Tujuan Penelitian**

Berdasarkan rumusan masalah di atas, penelitian ini bertujuan untuk :

1. Mengetahui langkah-langkah analisis risiko investasi pasangan saham SMGR.JK (Semen Indonesia Tbk.) dan INTP.JK (*Indocement* Tunggak Prakasa Tbk.) periode 1 Januari 2014 sampai 22 April 2015, dengan menggunakan metode *frank copula*.
2. Mengetahui bentuk model *frank copula* untuk mengukur besar risiko investasi pada pasangan saham SMGR.JK (Semen Indonesia Tbk.) dan INTP.JK (*Indocement* Tunggak Prakasa Tbk.) periode 1 Januari 2014 sampai 22 April 2015.
3. Mengetahui besar risiko investasi pada pasangan saham SMGR.JK (Semen Indonesia Tbk.) dan INTP.JK (*Indocement* Tunggak Prakasa Tbk.) periode 1 Januari 2014 sampai 22 April 2015 menggunakan metode *frank copula*.

### 1.5. Manfaat Penelitian

1. Bagi penulis, untuk lebih memahami penerapan ilmu statistika dalam bidang keuangan khususnya investasi dalam saham syariah serta menambah wawasan ilmu pengetahuan yang lebih luas.
2. Bagi bidang matematika, menambah serta memperkaya wawasan serta referensi mengenai penerapan model *Frank Copula* dalam bidang keuangan khususnya investasi saham.
3. Bagi investor, memberikan informasi para investor dalam mempertimbangkan pengambilan keputusan berinvestasi, sehingga dapat meminimalisir adanya risiko.

### 1.6. Tinjauan Pustaka

Tinjauan pustaka penelitian ini terdiri dari beberapa karya ilmiah lain, buku, dan situs internet sebagai referensi pelengkap untuk menunjang kelengkapan penelitian. Adapun beberapa penelitian yang relevan dengan tema yang diambil oleh peneliti, yaitu :

1. Jurnal Novella Putri Iriani, Muhammad Sjahid Akbar, Dan Haryono (2013) yang berjudul "*Estimasi Value at Risk (VaR) pada portofolio saham dengan Copula Clayton*". Pada jurnal ini telah dijelaskan langkah-langkah dalam mengestimasi *Value at Risk* (VaR) dengan *copula*, yaitu setelah dipeoleh model GARCH (1,1) dari masing-masing saham dapat ditemukan model *residual* GARCH (1,1) dengan metode *copula*.
2. Jurnal M. Mahfoud (2012) yang berjudul "*Bivariate Archimedean Copulas : An Application to Stock Market Indices*". Pada penelitian ini diaplikasikan

pada nilai indeks saham Dax-30 Jerman dan Indeks saham CAC-40 Prancis. Penelitian ini menggunakan pemodelan ARMA-GARCH dengan distribusi student-t yang selanjutnya digunakan untuk pemodelan *copula Archimedean*.

3. Jurnal Ngoga Kirabo Bob (2013) yang berjudul “*Value at Risk Estimation. A GARCH-Copula-EVT Approach*”. Pada penelitian ini dijelaskan secara umum tentang estimasi VaR dengan *copula*.

Tabel 1.1 Kajian Pustaka

| No. | Nama Peneliti   | Judul  | Metode                       | Objek  |
|-----|---|--|------------------------------|--|
| 1   | Novella Putri Iriani, Muhammad Sjahid Akbar, Dan Haryono (2013) | Estimasi <i>Value at Risk</i> (VaR) pada portofolio saham dengan <i>Copula</i>   | VaR ( <i>Copula-GARCH</i> )  | INDF, TLKM, GGRM, BBRI, ASII                   |
| 2   | M. Mahfoud (2012)   | <i>Bivariate Archimedean Copula : An Application to two Stock Market Indices</i> | <i>Copula Archimedean</i>    | Indeks Dax-30 Jerman dan indeks CAC-40 Prancis |
| 3   | Ngoga Kirabo Bob (2013)   | <i>Value at Risk Estimation. A GARCH-Copula-EVT Approach</i>                     | VaR-GARCH-EVT- <i>Copula</i> | DAX, IBEX 35, FTSE MIB, dan CAC 40             |

### 1.7. Sistematika Penulisan

Penelitian ini ditulis dengan beberapa bab yang berisikan sub-sub yang telah disusun sedemikian rupa untuk memudahkan pembaca untuk memahami isi tulisan dalam penelitian ini. Adapun Sistematika penulisan Penelitian ini, yaitu :



1. BAB I PENDAHULUAN

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

2. BAB II LANDASAN TEORI

Berisi tentang suatu tinjauan yang merupakan uraian teori dari semua hal yang diperlukan dalam pembahasan analisis risiko investasi saham syariah dengan metode *frank copula*.

3. BAB III METODE PENELITIAN

Berisi berbagai penjelasan mengenai proses pelaksanaan penelitian ini. Mulai dari jenis penelitian, sumber penelitian, metode pengumpulan data, variabel penelitian, alat penelitian, metode analisis data, dan flow chart.

4. BAB IV PEMBAHASAN

Berisi tentang pembahasan mengenai analisis risiko investasi saham syariah dengan metode *frank copula*.

5. BAB V STUDI KASUS

Berisi tentang penerapan dan aplikasi analisis risiko investasi saham syariah dengan metode *frank copula* pada pasangan saham SMGR.JK dan INTP.JK serta memberikan interpretasi terhadap hasil yang diperoleh.

6. BAB VI KESIMPULAN DAN SARAN

Berisi tentang suatu kesimpulan dari seluruh pembahasan permasalahan yang ada dan pemecahan masalah serta saran-saran yang berkaitan dengan penelitian berikutnya.

## BAB VI PENUTUP

### 6.1. Kesimpulan

Berdasarkan hasil studi literatur dan studi kasus yang telah dilakukan pada bab-bab sebelumnya, dapat disimpulkan sebagai berikut :

1. Terdapat beberapa langkah dalam analisis risiko investasi pasangan saham syariah dengan metode *frank copula*, yaitu mengumpulkan data penutupan 30 saham syariah yang tergabung dalam JII periode 1 Januari sampai 22 April 2015, menghitung nilai *return*, menghitung korelasi antar saham, memilih pasangan saham dengan korelasi kuat, menguji stasioneritas, menguji normalitas, jika tidak berdistribusi normal ubah periode saham ke mingguan atau bulanan, pemodelan ARIMA-GARCH, pemodelan *frank copula*, dan yang terakhir menghitung nilai VaR dengan pendekatan simulasi *Monte-Carlo*.
2. Setelah proses estimasi menggunakan pendekatan *Kendall's Tau* diperoleh model *frank copula* yang akan digunakan untuk membangkitkan variabel acak untuk simulasi, sebagai berikut :

$$C(u, v) = -\frac{1}{7.1128} \ln \left\{ 1 + \frac{(e^{-7.1128u} - 1)(e^{-7.1128v} - 1)}{(e^{-7.1128u} - 1)} \right\}$$

3. Risiko yang diperoleh dari analisis risiko pasangan saham SMGR.JK dan INTJ.JK dengan metode *frank copula* pada tingkat kepercayaan 90%, 95%, dan 99% secara berturut-turut adalah sebesar Rp.4.936.200,00, Rp.5.744.000,00, dan Rp.7.164.300,00

## 6.2. Saran

Berdasarkan hasil penelitian yang menjelaskan tentang analisis risiko pada pasangan saham syariah dengan menggunakan metode *frank copula*. Saran yang dapat disampaikan peneliti adalah :

- a. Nilai VaR dengan metode *frank copula* pada penelitian ini diharapkan mampu menjadi pertimbangan para investor dalam berinvestasi saham, sehingga dapat meminimalkan kerugian.
- b. Melanjutkan objek penelitian yang lebih dari sepasang saham syariah.
- c. Memperluas pembahasan mengenai pemodelan menggunakan *frank copula* pada jenis data lain seperti data pengeluaran-pendapatan, data klimatologi, dan lainnya.
- d. Memperluas penggunaan teori *copula* dalam perhitungan VaR dengan jenis *copula* lain seperti *studen-t copula*, *gaussian copula*, *clayton copula*, dan lainnya.

Demikian saran yang dapat peneliti sampaikan, semoga bermanfaat bagi para investor dalam berinvestasi saham, dan membantu para peneliti lain dalam pembelajaran mengenai teori *copula* dalam analisis risiko untuk melanjutkan dan mengembangkan penelitian ini menjadi lebih baik.

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**Lampiran 1 : Data return 30 saham syariah JII**

a. 10 saham pertama

| Date      | AAJI     | ADRO     | AKRA     | ANTM     | ASRI     | ASII     | BMTR     | BSDE     | CPIN     | ICBP     |
|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 1/1/2014  |          |          |          |          |          |          |          |          |          |          |
| 1/2/2014  | -0.01809 | -0.02791 | 0.0226   | -0.00922 | 0.056512 | 0.021819 | 0        | 0.02299  | 0.043485 | 0.024214 |
| 1/3/2014  | -0.04991 | -0.04832 | 0        | -0.03774 | -0.02222 | -0.0292  | -0.00528 | -0.02299 | -0.03611 | -0.02421 |
| 1/6/2014  | -0.06269 | -0.08252 | -0.00898 | -0.03423 | -0.03429 | 0.014706 | -0.02681 | -0.0315  | -0.0059  | -0.00738 |
| 1/7/2014  | -0.02413 | -0.05526 | -0.00339 | 0        | -0.0117  | -0.00366 | -0.03035 | -0.03252 | -0.02395 | -0.00247 |
| 1/8/2014  | 0.058708 | 0.065958 | 0.00564  | 0.004963 | 0.052704 | -0.00367 | 0.027626 | 0.044452 | 0.022473 | -0.00248 |
| 1/9/2014  | -0.01325 | 0.005305 | 0.003369 | -0.00496 | -0.00897 | -0.00368 | -0.00273 | 0.003945 | 0.020529 | -0.00998 |
| 1/10/2014 | -0.05246 | -0.00531 | 0.013363 | -0.02519 | 0.031045 | -0.0037  | 0.002729 | 0.075794 | 0.030024 | 0.002503 |
| 1/13/2014 | -0.00823 | 0.015831 | 0.049633 | 0.010152 | 0.083731 | 0.036368 | 0.013532 | 0.107184 | 0.069368 | 0.014889 |
| 1/14/2014 | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 1/15/2014 | -0.01667 | -0.00525 | 0        | 0        | -0.00402 | 0.041964 | 0.008032 | -0.02322 | 0.032323 | 0.057432 |
| 1/16/2014 | 0.005984 | 0.025975 | -0.02559 | 0.029853 | 0.037591 | 0        | 0.015873 | -0.03761 | 0.001271 | 0.009259 |
| 1/17/2014 | -0.00359 | 0        | 0.011809 | -0.01482 | 0.009662 | -0.05274 | 0.002621 | 0.013841 | -0.0051  | 0.006889 |
| 1/20/2014 | 0.03876  | 0        | -0.00965 | 0.024571 | 0.009569 | -0.01455 | 0.013004 | 0        | -0.00128 | 0.004566 |
| 1/21/2014 | 0.009174 | 0.005115 | -0.00216 | 0.047402 | 0.028171 | -0.01105 | 0        | 0.04041  | 0.003829 | 0.011325 |
| 1/22/2014 | 0.006826 | 0.044895 | -0.01086 | -0.0093  | -0.03774 | 0.00738  | -0.00259 | -0.00662 | 0.0264   | 0.04406  |
| 1/23/2014 | 0.040005 | 0        | -0.02992 | -0.02364 | 0.009569 | 0        | 0        | -0.02013 | -0.02259 | -0.0262  |
| 1/24/2014 | -0.00875 | 0.014528 | 0.005609 | -0.0048  | -0.02899 | -0.04128 | -0.03964 | -0.02401 | -0.01406 | -0.00889 |
| 1/27/2014 | -0.06821 | -0.07485 | -0.02721 | -0.02927 | -0.02985 | -0.01934 | -0.0301  | -0.07197 | -0.00646 | -0.03175 |
| 1/28/2014 | 0.008202 | -0.03158 | -0.03748 | -0.00496 | 0.01005  | -0.00391 | 0.016529 | 0.029414 | 0.035627 | -0.01626 |
| 1/29/2014 | 0.006977 | 0.021165 | 0.051174 | 0.004963 | 0.039221 | 0.007813 | 0.013569 | 0.056353 | 0.018576 | 0.048009 |
| 1/30/2014 | -0.00465 | -0.00525 | -0.00227 | 0.019608 | -0.01942 | 0        | -0.0027  | -0.01379 | 0.014617 | -0.01802 |

| Date      | AALI     | ADRO     | AKRA     | ANTM     | ASRI     | ASII     | BMTR     | BSDE     | CPIN     | ICBP     |
|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 1/31/2014 | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 2/3/2014  | 0.008116 | -0.04302 | 0        | -0.00976 | 0.009756 | -0.01174 | -0.0274  | 0        | -0.02572 | -0.02532 |
| 2/4/2014  | -0.01395 | -0.01662 | -0.00684 | -0.01482 | -0.01961 | -0.01587 | -0.01964 | -0.01399 | -0.01752 | 0.004651 |
| 2/5/2014  | 0.002339 | 0.011111 | -0.01964 | -0.00499 | 0.009852 | 0.019803 | -0.00568 | 0.010508 | -0.01399 | 0.018391 |
| 2/6/2014  | 0.027652 | 0.00551  | -0.02004 | 0        | 0.047856 | 0.003914 | 0.030858 | 0.0443   | 0.003834 | 0.011325 |
| 2/7/2014  | 0.006795 | -0.00551 | 0.020036 | 0.00995  | 0.036701 | 0.019343 | 0.013718 | 0.026317 | 0.020203 | 0.004494 |
| 2/10/2014 | 0.010107 | 0.00551  | 0.035534 | 0.004938 | -0.0274  | -0.00384 | -0.01096 | -0.00325 | -0.04082 | -0.00449 |
| 2/11/2014 | 0.03297  | 0.03774  | 0.014534 | 0.024332 | 0.054067 | 0.011472 | -0.0083  | 0.019355 | 0.014221 | -0.00451 |
| 2/12/2014 | 0.016086 | -0.00531 | -0.00111 | -0.00482 | 0        | 0.011342 | 0.016529 | -0.01286 | 0.010217 | -0.00909 |
| 2/13/2014 | -0.01501 | -0.00533 | -0.00334 | -0.01951 | -0.0177  | 0        | -0.01099 | 0.006452 | -0.00254 | -0.00229 |
| 2/14/2014 | 0.002157 | 0.010638 | 0.003339 | 0        | 0.0177   | 0.007491 | 0.021859 | 0        | 0.006349 | -0.00459 |
| 2/17/2014 | -0.01302 | 0.031253 | 0.013245 | 0.019513 | 0.034486 | 0.018485 | 0.03714  | 0.01278  | 0.015076 | -0.00692 |
| 2/18/2014 | 0.013015 | -0.02073 | 0.004376 | 0.023867 | -0.01709 | -0.00367 | 0.023167 | -0.016   | -0.0025  | -0.0093  |
| 2/19/2014 | 0.027632 | -0.00525 | -0.02319 | 0        | 0        | 0.021819 | 0.064061 | -0.00323 | 0        | 0.009302 |
| 2/20/2014 | -0.0042  | 0.025975 | 0.013319 | -0.01425 | -0.0262  | -0.00722 | 0.002384 | 0.006452 | -0.00125 | -0.00232 |
| 2/21/2014 | -0.01058 | -0.00514 | 0.008782 | 0.009524 | 0.051736 | 0.010811 | 0.004751 | 0.015949 | 0.013673 | 0.011534 |
| 2/24/2014 | 0.012685 | 0        | 0.003273 | -0.00475 | 0        | -0.02909 | -0.00713 | -0.01274 | 0.029199 | 0.027151 |
| 2/25/2014 | -0.0021  | -0.03142 | -0.00985 | -0.01439 | -0.01695 | -0.01113 | -0.00719 | -0.01942 | 0.003591 | 0.004454 |
| 2/26/2014 | 0.003153 | -0.00533 | 0        | 0        | -0.03479 | -0.02264 | 0.019048 | -0.04683 | -0.01323 | -0.03161 |
| 2/27/2014 | 0.055116 | 0.015915 | 0.012029 | 0.009615 | 0.026202 | 0.022642 | 0.014052 | 0.036979 | 0.016807 | 0.009132 |
| 2/28/2014 | 0.012827 | 0.046281 | -0.00873 | -0.0048  | -0.00866 | 0.036634 | 0.016148 | 0.013115 | 0.008299 | 0.015784 |
| 3/3/2014  | -0.00393 | -0.01519 | 0.008734 | 0        | -0.01754 | -0.02182 | -0.02549 | -0.01642 | -0.01547 | -0.00448 |
| 3/4/2014  | -0.00197 | 0.035091 | 0.025752 | 0        | 0.026202 | 0.00367  | 0.007018 | 0.013158 | -0.00843 | -0.01814 |
| 3/5/2014  | 0.066755 | 0.004914 | 0.012632 | 0.03774  | 0.008584 | 0.028883 | 0.011588 | 0.006515 | 0.010824 | 0.002286 |
| 3/6/2014  | 0.018282 | 0        | -0.0063  | 0.045257 | 0.033617 | 0        | 0.036203 | 0.022473 | -0.00359 | -0.00229 |



| Date      | AALI     | ADRO     | AKRA     | ANTM     | ASRI     | ASII     | BMTR     | BSDE     | CPIN     | ICBP     |
|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 3/7/2014  | -0.00091 | -0.00491 | -0.00105 | 0        | 0        | -0.00357 | 0.064539 | 0.028171 | 0.007177 | -0.00229 |
| 3/10/2014 | 0.011717 | -0.01489 | 0.010482 | -0.02691 | -0.01667 | 0.038534 | 0        | 0.01227  | 0.001191 | -0.0023  |
| 3/11/2014 | -0.00269 | -0.03563 | -0.00733 | 0.013544 | 0.041158 | -0.00344 | 0.016529 | 0.021117 | 0.00119  | 0.011429 |
| 3/12/2014 | -0.01357 | -0.02094 | -0.01802 | -0.0181  | -0.0081  | -0.00345 | -0.01861 | 0        | -0.00357 | 0        |
| 3/13/2014 | -0.0428  | 0.026111 | -0.00536 | 0.009091 | 0        | 0.006897 | 0        | -0.00299 | 0.002384 | 0.00227  |
| 3/14/2014 | -0.00859 | 0        | 0.027573 | 0        | 0.032003 | 0.06968  | -0.01472 | 0.011905 | 0.02353  | 0.00678  |
| 3/17/2014 | 0.002872 | 0.010257 | 0.054948 | -0.00454 | 0.038615 | 0.015899 | 0.010538 | 0.011765 | 0.011561 | 0.004494 |
| 3/18/2014 | -0.00383 | -0.00512 | -0.00496 | 0.022473 | -0.0076  | -0.0288  | 0.008351 | -0.01473 | -0.01272 | -0.02727 |
| 3/19/2014 | 0.014293 | 0.025318 | -0.03031 | 0.047731 | 0.007605 | 0.022473 | 0.032723 | 0.0118   | -0.02475 | -0.00231 |
| 3/20/2014 | -0.02007 | -0.04082 | -0.00927 | -0.0433  | -0.04652 | -0.04215 | -0.0348  | -0.05114 | -0.03275 | -0.00231 |
| 3/21/2014 | 0.007692 | 0.030772 | 0.009274 | 0.004415 | 0.007905 | -0.02685 | 0.002081 | 0.033387 | 0.019537 | 0.016074 |
| 3/24/2014 | 0.008584 | -0.01527 | -0.03337 | 0.017468 | 0        | -0.01026 | 0.022611 | 0.002981 | 0.016787 | -0.07323 |
| 3/25/2014 | -0.05465 | 0.005115 | 0.017867 | -0.0087  | -0.01587 | -0.00344 | -0.01846 | 0.002972 | -0.01076 | -0.0198  |
| 3/26/2014 | 0.018878 | -0.00512 | 0.007265 | 0        | -0.00803 | 0.006873 | 0.006192 | 0        | -0.01697 | 0.004988 |
| 3/27/2014 | 0        | -0.00514 | -0.00207 | -0.00877 | 0        | -0.00687 | -0.01869 | -0.00595 | -0.0235  | 0.009901 |
| 3/28/2014 | 0.023347 | 0.010257 | 0.00207  | 0        | -0.04116 | 0.017094 | -0.01478 | -0.02417 | 0        | -0.00494 |
| 3/31/2014 | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 4/1/2014  | 0.006708 | 0.005089 | 0.048445 | 0.008772 | 0.041158 | 0.039872 | 0.008475 | 0.030123 | 0.038065 | -0.00248 |
| 4/2/2014  | -0.01443 | -0.00509 | 0        | -0.00438 | 0.008032 | 0.006494 | 0.006309 | -0.00894 | -0.00969 | -0.00747 |
| 4/3/2014  | -0.0176  | 0.005089 | -0.02899 | 0.013072 | 0        | 0.009662 | -0.01054 | -0.003   | -0.00244 | 0.004988 |
| 4/4/2014  | 0        | -0.01535 | -0.01122 | -0.0087  | -0.01613 | 0        | -0.01065 | -0.01513 | -0.01971 | -0.00499 |
| 4/7/2014  | 0.013712 | 0.010257 | 0.011219 | -0.01319 | 0.016129 | 0.025318 | 0.006403 | 0.003044 | 0.046181 | 0.007472 |
| 4/8/2014  | 0.021175 | -0.01026 | -0.0061  | -0.00443 | -0.00803 | 0.00312  | -0.02151 | 0.003035 | 0.009456 | -0.00747 |
| 4/9/2014  | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 4/10/2014 | 0.001903 | -0.01558 | -0.03849 | -0.02703 | -0.12893 | -0.06433 | -0.02867 | -0.09198 | -0.0335  | -0.00753 |



| Date      | AALI     | ADRO     | AKRA     | ANTM     | ASRI     | ASII     | BMTR     | BSDE     | CPIN     | ICBP     |
|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 5/16/2014 | 0.006926 | 0.008065 | -0.01497 | -0.03226 | -0.0093  | 0.013115 | -0.00881 | 0        | 0.015114 | 0.002424 |
| 5/19/2014 | 0.005164 | 0.023811 | -0.01739 | -0.01653 | -0.0381  | 0.003252 | -0.02011 | -0.04474 | 0        | -0.00973 |
| 5/20/2014 | -0.05741 | 0.019418 | -0.04027 | -0.00418 | -0.03558 | -0.02632 | -0.01135 | -0.00327 | -0.03692 | -0.02475 |
| 5/21/2014 | -0.02578 | -0.01161 | 0.009091 | -0.00419 | 0.006018 | 0        | 0.006826 | 0.022691 | -0.01174 | 0.007491 |
| 5/22/2014 | 0.003724 | 0.011606 | 0.00564  | 0.04919  | 0.00995  | 0.013245 | -0.00455 | 0.019048 | 0.022064 | -0.00749 |
| 5/23/2014 | 0.003711 | 0.003839 | -0.00225 | -0.00803 | -0.00995 | -0.01325 | -0.02071 | -0.00631 | 0.008946 | 0.022306 |
| 5/26/2014 | -0.00557 | 0        | 0.001127 | -0.01626 | -0.00602 | -0.00669 | 0        | -0.01274 | 0.008866 | -0.00245 |
| 5/27/2014 | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 5/28/2014 | 0.03477  | -0.01156 | 0.004494 | 0.008163 | 0.006018 | 0        | -0.02591 | 0.028438 | 0.007538 | 0.00978  |
| 5/29/2014 | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 5/30/2014 | -0.01723 | -0.0517  | -0.07808 | -0.02469 | 0        | -0.05165 | -0.02171 | 0.00311  | -0.05664 | -0.00733 |
| 6/2/2014  | -0.01661 | 0.036076 | 0.041549 | -0.02105 | -0.0141  | 0.02098  | -0.01722 | -0.03476 | 0.006601 | -0.01233 |
| 6/3/2014  | -0.00093 | 0.003929 | 0.013857 | 0.021053 | 0.002026 | 0        | 0.012331 | -0.00645 | 0.002628 | 0        |
| 6/4/2014  | -0.00186 | 0.003914 | 0.005718 | -0.00837 | -0.00203 | -0.00694 | 0.014599 | 0.019231 | 0        | 0.012331 |
| 6/5/2014  | 0.002795 | 0        | -0.00916 | 0.004193 | -0.00407 | -0.00349 | 0.00722  | 0.006329 | 0.007843 | -0.00985 |
| 6/6/2014  | -0.00093 | 0.030772 | -0.01157 | -0.01263 | -0.00613 | 0.006969 | 0        | 0.009419 | 0        | 0        |
| 6/9/2014  | -0.0226  | -0.03077 | -0.00818 | -0.03011 | -0.04185 | 0.003466 | -0.01206 | -0.01893 | -0.02238 | -0.00745 |
| 6/10/2014 | 0.015123 | 0.015504 | 0.031198 | 0.004357 | 0        | 0.023933 | 0.014458 | 0.006349 | 0.014541 | 0.017306 |
| 6/11/2014 | 0        | 0.019048 | 0.028044 | 0.012959 | 0.021142 | 0.016751 | 0.035256 | 0.009449 | 0.032282 | 0        |
| 6/12/2014 | -0.00943 | -0.0424  | 0.006615 | -0.02609 | -0.0084  | -0.01002 | 0.013762 | -0.00945 | 0.00127  | 0        |
| 6/13/2014 | 0.002837 | 0.007843 | 0.012015 | 0.004396 | -0.01488 | -0.00673 | -0.01607 | -0.00317 | -0.01149 | 0.002448 |
| 6/16/2014 | 0.00471  | -0.04392 | -0.00109 | 0        | -0.01728 | -0.02048 | 0.002312 | 0        | -0.00773 | -0.02225 |
| 6/17/2014 | 0.015851 | 0.047818 | -0.01093 | 0.013072 | 0.002176 | -0.00345 | -0.00695 | 0.00317  | 0.006447 | 0        |
| 6/18/2014 | 0.004615 | -0.01569 | 0.006572 | 0        | -0.01976 | -0.00694 | 0.00464  | -0.00635 | 0.001285 | 0        |
| 6/19/2014 | -0.00554 | -0.02806 | -0.0154  | -0.01307 | -0.02925 | -0.00349 | -0.02105 | -0.02908 | -0.00903 | 0.00995  |

| Date      | AALI     | ADRO     | AKRA     | ANTM     | ASRI     | ASII     | BMTR     | BSDE     | CPIN     | ICBP     |
|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 6/20/2014 | 0.014706 | -0.03727 | -0.02242 | -0.01325 | 0.046831 | 0        | -0.00712 | 0.025891 | 0.010309 | 0        |
| 6/23/2014 | 0        | -0.02564 | 0.005653 | -0.00445 | -0.02426 | 0.010435 | -0.00717 | -0.03247 | -0.0142  | -0.01245 |
| 6/24/2014 | 0.035846 | -0.01747 | 0.01455  | -0.00447 | 0.004454 | 0.006897 | 0.004785 | -0.00995 | 0        | 0.002503 |
| 6/25/2014 | 0.020907 | 0.008772 | 0.006645 | -0.03189 | -0.02703 | -0.01036 | -0.00478 | -0.0202  | -0.00652 | -0.0025  |
| 6/26/2014 | 0.010292 | 0.046917 | -0.02119 | 0.009217 | -0.00229 | 0.003466 | 0.002395 | 0        | 0.010417 | 0.002503 |
| 6/27/2014 | -0.02069 | -0.01258 | -0.01248 | -0.01852 | 0        | 0.017153 | 0.007151 | -0.0241  | -0.02492 | -0.01005 |
| 6/30/2014 | -0.01846 | -0.00847 | -0.01148 | 0.018519 | 0.011377 | -0.01026 | 0.009456 | 0.03425  | 0.001327 | 0.01005  |
| 7/1/2014  | -0.03155 | -0.00855 | -0.01161 | 0.009132 | -0.00227 | 0.010257 | 0.00235  | -0.01015 | -0.00266 | 0.007472 |
| 7/2/2014  | 0.010929 | 0.0296   | 0.02081  | -0.00913 | 0.00678  | 0.013514 | 0        | 0.020203 | 0.015831 | 0.014779 |
| 7/3/2014  | -0.01368 | -0.00837 | 0.025975 | 0.040455 | 0.054778 | -0.01351 | -0.01896 | 0.003328 | 0.005222 | -0.00736 |
| 7/4/2014  | 0.01005  | 0        | 0.007773 | 0.013129 | 0.016914 | 0        | -0.0024  | 0.032683 | -0.01443 | -0.00742 |
| 7/7/2014  | 0.00995  | 0.004193 | 0.012095 | 0        | 0.047092 | 0.020203 | -0.0024  | 0.022258 | 0.028648 | 0.014779 |
| 7/8/2014  | -0.0283  | -0.01263 | -0.0132  | -0.00873 | 0        | 0.019803 | -0.01453 | 0        | -0.00515 | 0        |
| 7/9/2014  | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 7/10/2014 | 0.00554  | 0        | 0.043344 | -0.0044  | 0.019803 | 0.022618 | 0.00729  | 0.018692 | 0        | 0.012151 |
| 7/11/2014 | -0.02423 | -0.0433  | -0.01281 | -0.0133  | -0.02381 | -0.03578 | -0.02451 | -0.04095 | -0.00777 | -0.02693 |
| 7/14/2014 | -0.00094 | -0.02237 | -0.02281 | 0        | 0        | -0.00664 | -0.00998 | 0.028528 | -0.0013  | -0.00498 |
| 7/15/2014 | -0.02003 | 0.035559 | 0.016349 | 0.008889 | 0.023811 | 0.013245 | -0.00251 | 0.018576 | 0.003899 | -0.005   |
| 7/16/2014 | 0.004805 | 0.004357 | 0.018212 | 0.008811 | 0.038466 | 0        | 0        | 0.018238 | 0.05058  | 0.051293 |
| 7/17/2014 | -0.00673 | -0.0354  | -0.03456 | -0.01325 | 0        | 0        | -0.0101  | -0.02439 | -0.01867 | 0        |
| 7/18/2014 | 0.009606 | 0.004494 | -0.00883 | 0.026317 | 0.00939  | 0.006557 | -0.01277 | 0.009217 | -0.00252 | -0.00238 |
| 7/21/2014 | 0.003817 | 0.013363 | 0.002215 | 0.008621 | 0.027652 | 0.009756 | 0.005128 | 0.018182 | 0.001259 | 0.002384 |
| 7/22/2014 | -0.00957 | -0.03146 | -0.02577 | -0.02609 | -0.01835 | 0        | 0.015229 | -0.00905 | -0.01266 | -0.00477 |
| 7/23/2014 | 0        | 0.009091 | 0.006787 | 0        | -0.0093  | -0.00324 | -0.00252 | 0        | 0.0114   | 0.007151 |
| 7/24/2014 | 0.021874 | 0.044255 | 0.013438 | 0.108439 | -0.01887 | -0.00325 | -0.00506 | -0.02454 | 0.005025 | -0.00476 |

| Date      | AALI     | ADRO     | AKRA     | ANTM     | ASRI     | ASII     | BMTR     | BSDE     | CPIN     | ICBP     |
|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 7/25/2014 | 0.004693 | 0.025642 | -0.02136 | 0.003945 | 0        | 0.006494 | -0.02571 | -0.01565 | -0.01008 | -0.00239 |
| 7/28/2014 | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 7/29/2014 | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 7/30/2014 | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 7/31/2014 | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 8/1/2014  | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 8/4/2014  | -0.017   | 0.041328 | 0.04879  | -0.04017 | -0.01923 | 0.022401 | -0.02906 | -0.00633 | -0.00127 | 0.014252 |
| 8/5/2014  | 0.000952 | 0.016065 | 0        | 0.008163 | 0.02871  | -0.01274 | 0.002677 | 0.015748 | 0.005057 | -0.00473 |
| 8/6/2014  | 0.014171 | 0        | 0.006473 | -0.00407 | 0.018692 | -0.02269 | -0.02985 | -0.01893 | -0.00379 | -0.01914 |
| 8/7/2014  | -0.00753 | 0.011881 | -0.00972 | 0.032131 | 0        | 0.006536 | -0.01387 | 0.018928 | -0.01917 | 0.012005 |
| 8/8/2014  | -0.00854 | -0.01188 | -0.00109 | -0.01594 | -0.0093  | -0.01642 | -0.01975 | 0        | -0.00388 | -0.012   |
| 8/11/2014 | 0.010432 | 0.007937 | 0.019376 | -0.00402 | 0        | 0.013158 | 0.019747 | 0.009331 | 0.026839 | 0.002413 |
| 8/12/2014 | -0.00948 | 0        | -0.0032  | 0.008032 | 0        | 0        | 0.01387  | 0.003091 | 0.005031 | 0        |
| 8/13/2014 | 0.000952 | 0.015687 | 0.026387 | -0.00401 | 0.018519 | 0.009756 | 0.005495 | 0.006154 | 0.021106 | 0.011976 |
| 8/14/2014 | 0        | 0.007752 | 0        | -0.00806 | 0.018182 | 0        | 0.010899 | 0.006116 | -0.00988 | -0.00477 |
| 8/15/2014 | -0.0086  | 0        | 0.026723 | 0        | -0.00905 | -0.00976 | 0.021449 | -0.00612 | 0.009877 | 0.002389 |
| 8/18/2014 | 0.000959 | 0.019121 | 0.024049 | -0.00406 | -0.00913 | 0.003263 | 0.010554 | -0.00307 | -0.00864 | -0.00239 |
| 8/19/2014 | 0.018053 | 0.007547 | -0.02    | 0        | 0.009132 | 0        | 0.023347 | -0.00617 | -0.02383 | -0.02177 |
| 8/20/2014 | -0.00756 | -0.00755 | -0.02144 | 0.004057 | 0        | 0.006494 | 0.022815 | 0.009245 | 0.016363 | 0.004878 |
| 8/21/2014 | -0.00666 | -0.03077 | 0.029489 | 0.00404  | 0        | 0.006452 | 0.009975 | 0        | 0.013639 | -0.00244 |
| 8/22/2014 | -0.00096 | -0.01972 | 0.011952 | -0.0081  | -0.01835 | -0.00645 | 0.002478 | 0.006116 | -0.00742 | -0.01474 |
| 8/25/2014 | -0.00961 | -0.02012 | -0.00995 | -0.00407 | -0.02817 | -0.01303 | 0        | -0.00612 | 0.00124  | 0.019608 |
| 8/26/2014 | -0.00193 | 0.032003 | -0.00401 | -0.02899 | -0.0528  | -0.00328 | -0.00248 | 0        | 0        | -0.00243 |
| 8/27/2014 | 0.001932 | 0.053653 | -0.01314 | 0        | 0.004008 | 0        | -0.03023 | 0        | -0.00124 | 0.021661 |
| 8/28/2014 | 0.003854 | -0.01883 | 0.036949 | 0.012526 | 0.019803 | 0.00982  | -0.00513 | -0.00307 | 0.004951 | 0.004751 |

| Date      | AALI     | ADRO     | AKRA     | ANTM     | ASRI     | ASII     | BMTR     | BSDE     | CPIN     | ICBP     |
|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 8/29/2014 | -0.01942 | 0        | 0.028988 | -0.00833 | 0        | -0.01311 | -0.00515 | -0.01238 | -0.05194 | -0.00475 |
| 9/1/2014  | 0.001959 | 0.003795 | 0.04652  | -0.02973 | -0.0198  | 0.006579 | 0.005155 | 0.009302 | 0.046993 | 0.037388 |
| 9/2/2014  | 0.002931 | 0.0113   | 0.031322 | 0        | 0        | 0.01303  | 0.005128 | 0.006154 | 0.003715 | 0        |
| 9/3/2014  | 0.008742 | 0.025879 | -0.0133  | -0.00432 | 0.00995  | -0.00649 | 0.022757 | 0.006116 | 0.001235 | 0.004577 |
| 9/4/2014  | -0.01363 | 0.003643 | -0.05506 | 0.034046 | -0.01798 | -0.01642 | -0.05129 | -0.00612 | 0        | -0.00458 |
| 9/5/2014  | 0.011696 | -0.01465 | -0.00948 | -0.01263 | -0.00202 | 0.013158 | 0.028536 | 0.00916  | -0.01618 | 0        |
| 9/8/2014  | -0.00097 | 0.021899 | 0.009479 | 0.025106 | 0.002018 | -0.00985 | -0.0077  | -0.02151 | 0.0075   | 0.006857 |
| 9/9/2014  | -0.0186  | -0.04052 | 0.004706 | -0.01667 | -0.01421 | -0.00995 | -0.00517 | -0.0125  | -0.01253 | -0.01145 |
| 9/10/2014 | -0.0352  | -0.03442 | 0        | -0.03419 | -0.0165  | -0.02361 | 0        | -0.03847 | -0.02167 | -0.00694 |
| 9/11/2014 | -0.03648 | 0        | -0.01418 | -0.00873 | 0        | -0.01029 | -0.02094 | 0.006515 | -0.02083 | -0.01167 |
| 9/12/2014 | -0.00853 | 0.015444 | -0.00477 | 0        | 0.004149 | -0.00345 | 0.020943 | 0.006473 | 0.03618  | 0.057028 |
| 9/15/2014 | -0.00214 | -0.02326 | 0        | -0.0044  | -0.00415 | 0.010327 | 0        | -0.01954 | 0.065094 | -0.00222 |
| 9/16/2014 | -0.01296 | -0.00393 | 0        | 0        | -0.00626 | -0.00687 | 0.030615 | 0        | 0.01182  | -0.02475 |
| 9/17/2014 | 0.003256 | 0.038615 | 0        | 0.004396 | 0.024795 | 0.003442 | -0.01774 | 0.054413 | -0.00235 | 0.020294 |
| 9/18/2014 | 0.033034 | -0.02299 | 0.004773 | 0.004376 | -0.01646 | 0.013652 | 0.03518  | -0.00625 | -0.01543 | 0.00223  |
| 9/19/2014 | 0.001048 | -0.01957 | 0        | -0.04009 | 0.01032  | -0.0034  | -0.01744 | -0.00314 | 0.022473 | 0.006659 |
| 9/22/2014 | -0.01159 | -0.00794 | 0        | 0        | -0.01032 | 0        | -0.02287 | 0.00627  | -0.00234 | -0.00889 |
| 9/23/2014 | -0.01925 | 0.011881 | -0.00477 | 0.018019 | -0.01043 | -0.0137  | -0.00257 | -0.02853 | -0.02733 | -0.03406 |
| 9/24/2014 | 0.001079 | -0.00394 | 0.009524 | 0.004454 | 0.004184 | -0.00692 | 0.002574 | 0.0096   | -0.01212 | 0.016037 |
| 9/25/2014 | 0.013926 | 0.007874 | -0.00952 | 0.00885  | 0.018615 | -0.00348 | -0.00774 | 0.040567 | 0.002436 | 0.013544 |
| 9/26/2014 | -0.01285 | -0.0648  | -0.0048  | -0.03132 | -0.03758 | -0.02469 | 0.04805  | -0.02164 | -0.00733 | 0.013363 |
| 9/29/2014 | -0.00866 | -0.02543 | 0.023754 | -0.01835 | -0.02586 | 0.007117 | -0.01744 | -0.01893 | 0.02541  | 0.004415 |
| 9/30/2014 | 0        | 0.008547 | 0.023203 | 0.027399 | -0.00657 | 0        | -0.02287 | -0.01605 | 0.013057 | 0        |
| 10/1/2014 | 0.004338 | -0.01285 | -0.01852 | -0.02278 | 0.015267 | -0.00712 | 0.005128 | 0.012862 | -0.01905 | -0.0133  |
| 10/2/2014 | -0.02188 | -0.03509 | -0.03326 | -0.03756 | -0.04879 | -0.05884 | -0.02854 | -0.04242 | -0.05815 | -0.04101 |

| Date       | AALI     | ADRO     | AKRA     | ANTM     | ASRI     | ASII     | BMTR     | BSDE     | CPIN     | ICBP     |
|------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 10/3/2014  | -0.02577 | -0.01348 | -0.00484 | -0.01932 | -0.01373 | 0        | -0.01058 | -0.0339  | -0.03368 | 0.018434 |
| 10/6/2014  | 0.003399 | 0.031183 | -0.01961 | -0.00489 | 0        | 0.018762 | -0.04349 | 0.017094 | 0.014389 | -0.00229 |
| 10/7/2014  | 0.016826 | 0        | -0.00496 | 0.00489  | 0.016    | 0.011091 | 0.043485 | 0.003384 | 0.014185 | -0.00689 |
| 10/8/2014  | -0.01683 | 0.013072 | -0.02928 | -0.0098  | -0.00455 | -0.01482 | -0.02423 | -0.02393 | -0.03651 | -0.02331 |
| 10/9/2014  | 0.01013  | -0.01307 | -0.00205 | 0.004914 | 0.00681  | 0.003724 | -0.00546 | 0.037356 | 0.013193 | 0.043836 |
| 10/10/2014 | -0.01922 | -0.04485 | -0.02285 | -0.02985 | -0.00909 | -0.03403 | -0.00274 | -0.02703 | -0.01054 | 0.002255 |
| 10/13/2014 | 0        | -0.07623 | 0.008368 | -0.00506 | -0.00229 | -0.02335 | -0.01105 | -0.01727 | -0.02007 | -0.00678 |
| 10/14/2014 | -0.00458 | 0        | -0.01999 | 0.005063 | 0.011377 | 0.007843 | -0.01964 | 0.013841 | 0.021391 | 0        |
| 10/15/2014 | -0.04576 | -0.07183 | 0.021031 | 0.01005  | -0.00909 | 0        | 0.025176 | 0.013652 | 0.020943 | 0.033448 |
| 10/16/2014 | -0.03543 | 0.026248 | 0.015488 | -0.01005 | 0.004556 | -0.00784 | 0.010989 | 0.013468 | 0.026839 | -0.0066  |
| 10/17/2014 | -0.00749 | 0.015424 | 0.008163 | -0.04124 | 0.070204 | 0.03101  | -0.01099 | 0.029656 | 0.003776 | 0.006601 |
| 10/20/2014 | -0.0177  | -0.02062 | -0.00612 | 0.005249 | 0.016807 | 0.007605 | 0.04325  | 0.025642 | -0.00757 | -0.03572 |
| 10/21/2014 | -0.00897 | 0.015504 | -0.0165  | -0.00525 | -0.00209 | -0.01527 | 0.015748 | -0.00635 | 0.008822 | 0.029117 |
| 10/22/2014 | 0.010243 | 0.054877 | 0.031716 | 0.010471 | -0.00839 | 0.007663 | -0.01047 | 0.018928 | 0.01618  | -0.01333 |
| 10/23/2014 | 0.002545 | 0.019231 | -0.01216 | 0        | 0.012552 | 0.022642 | 0.018253 | 0        | 0.003697 | 0.017739 |
| 10/24/2014 | 0.031272 | 0.004751 | 0.003053 | 0        | -0.01677 | -0.01504 | -0.01039 | -0.00942 | 0.008573 | 0.002195 |
| 10/27/2014 | 0        | -0.00952 | 0.005068 | -0.01575 | -0.03005 | -0.01143 | -0.00786 | -0.03859 | 0.030032 | -0.02667 |
| 10/28/2014 | -0.01614 | -0.01446 | -0.02872 | 0        | -0.00656 | 0.018976 | 0        | -0.00328 | -0.02517 | -0.01818 |
| 10/29/2014 | 0.053606 | 0.065751 | -0.00836 | -0.00531 | 0.004376 | 0.033275 | 0.020834 | 0.029175 | 0.02871  | 0.013668 |
| 10/30/2014 | 0.087407 | 0        | 0.007318 | 0.021053 | -0.00219 | 0.00363  | 0.005141 | 0.00319  | -0.00473 | -0.00454 |
| 10/31/2014 | 0.021506 | 0.031322 | 0.025708 | 0.010363 | 0.015201 | -0.01828 | 0.005115 | 0.022048 | -0.00475 | 0.004535 |
| 11/3/2014  | 0.014784 | 0.013129 | -0.01535 | -0.02611 | -0.0152  | 0.014652 | 0.0177   | -0.00625 | -0.0538  | -0.00454 |
| 11/4/2014  | -0.02763 | -0.00873 | 0.006167 | -0.00531 | 0        | -0.01465 | -0.00755 | -0.00314 | -0.02159 | -0.00913 |
| 11/5/2014  | -0.00866 | -0.03572 | -0.00823 | -0.00533 | -0.00439 | 0.025502 | -0.01271 | -0.00948 | 0.014022 | -0.0046  |
| 11/6/2014  | 0.001086 | -0.01835 | -0.00414 | 0.010638 | -0.0022  | 0        | -0.00256 | -0.00637 | -0.02955 | -0.00462 |

| Date       | AALI     | ADRO     | AKRA     | ANTM     | ASRI     | ASII     | BMTR     | BSDE     | CPIN     | ICBP     |
|------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 11/7/2014  | -0.00435 | 0.013793 | -0.00938 | -0.01064 | -0.02002 | 0        | -0.08004 | -0.0161  | -0.02776 | 0.018349 |
| 11/10/2014 | 0        | -0.00917 | -0.01903 | -0.01075 | 0.002245 | -0.03291 | 0.00554  | -0.00979 | 0.015958 | 0.004535 |
| 11/11/2014 | 0.029019 | 0.004598 | -0.02595 | -0.00542 | 0.004474 | 0.02206  | -0.01111 | 0.006536 | 0.007884 | 0.011249 |
| 11/12/2014 | 0.023038 | -0.06638 | 0.011976 | 0        | 0.004454 | 0.032203 | -0.03409 | 0.006494 | 0.007823 | 0        |
| 11/13/2014 | -0.02092 | -0.0198  | 0.00432  | 0.021506 | -0.00445 | 0        | 0.005764 | 0.003231 | -0.00521 | 0.006689 |
| 11/14/2014 | -0.01706 | 0        | 0.009652 | -0.00533 | 0.004454 | 0.010508 | -0.03212 | -0.01954 | -0.0105  | -0.0202  |
| 11/17/2014 | 0.012821 | 0.004988 | -0.00535 | -0.00536 | 0.006645 | -0.00699 | -0.02403 | 0.019545 | 0.00395  | 0        |
| 11/18/2014 | 0.008457 | 0.009901 | 0.007483 | 0        | 0.019673 | 0.010471 | 0.032888 | 0.01917  | 0.032323 | -0.00227 |
| 11/19/2014 | 0.009429 | 0.01467  | 0.002128 | 0        | 0.02353  | -0.00697 | 0        | 0.037271 | 0.005076 | 0.013544 |
| 11/20/2014 | 0.032823 | 0.0381   | -0.02257 | 0.026527 | -0.00636 | -0.03922 | -0.0059  | -0.00305 | 0        | 0.006704 |
| 11/21/2014 | 0.013033 | 0.004662 | 0.00758  | 0.025841 | 0.071826 | 0.01085  | -0.00892 | 0.021181 | 0.007566 | -0.01345 |
| 11/24/2014 | -0.00499 | 0.013857 | 0.007523 | 0.020203 | -0.01195 | 0.021353 | 0.01187  | 0.008942 | 0.0162   | 0.026728 |
| 11/25/2014 | -0.03878 | 0.004577 | -0.00968 | -0.01005 | 0.011952 | -0.02857 | -0.02691 | 0.0118   | -0.00869 | 0.006572 |
| 11/26/2014 | 0.006224 | 0.009091 | -0.00433 | -0.02041 | 0.009852 | 0.017954 | 0        | 0.005848 | -0.00877 | -0.00438 |
| 11/27/2014 | 0.011311 | -0.00454 | 0.009725 | 0.010257 | 0.019418 | 0.01062  | -0.00608 | 0.011594 | 0.030962 | -0.0022  |
| 11/28/2014 | -0.01858 | -0.01835 | 0        | 0        | 0.074108 | 0.003515 | -0.02157 | 0.019972 | 0.002436 | -0.01105 |
| 12/1/2014  | -0.04147 | -0.01399 | -0.00972 | 0        | -0.01802 | 0        | -0.02844 | 0.027857 | 0.003643 | 0.013245 |
| 12/2/2014  | 0.007572 | 0.018605 | -0.00109 | 0.005089 | 0.035718 | -0.0177  | 0.009569 | 0.008208 | -0.00243 | 0        |
| 12/3/2014  | -0.00324 | 0.009174 | -0.03653 | -0.0102  | 0.034486 | -0.01439 | -0.03554 | -0.00821 | 0        | 0        |
| 12/4/2014  | 0.01289  | 0.035878 | 0.018984 | 0.005115 | 0.008439 | 0.010811 | -0.00992 | 0.005479 | 0.019255 | 0.017392 |
| 12/5/2014  | 0.040779 | -0.0133  | 0.001106 | -0.01542 | 0.008368 | 0.017762 | -0.00333 | 0.008163 | -0.01683 | 0.012848 |
| 12/8/2014  | -0.0207  | -0.02257 | 0.002208 | -0.00519 | -0.04256 | 0        | -0.0202  | -0.00271 | -0.01097 | -0.01285 |
| 12/9/2014  | -0.00105 | -0.00458 | -0.01332 | 0.005195 | -0.00873 | 0        | -0.02062 | 0        | -0.01109 | 0.021323 |
| 12/10/2014 | 0.001047 | -0.0232  | 0.021007 | 0        | 0.017392 | 0.007018 | 0.013793 | -0.00819 | -0.00871 | -0.00423 |
| 12/11/2014 | 0.004175 | -0.00471 | 0.005456 | -0.01042 | 0.017094 | -0.00702 | -0.02076 | -0.00825 | -0.01511 | -0.02575 |



| Date       | AALI     | ADRO     | AKRA     | ANTM     | ASRI     | ASII     | BMTR     | BSDE     | CPIN     | ICBP     |
|------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 12/12/2014 | -0.01363 | -0.03358 | 0.01619  | 0.015585 | -0.01709 | 0.010508 | -0.01054 | -0.01391 | -0.02571 | 0.017242 |
| 12/15/2014 | -0.02351 | 0        | 0        | -0.01558 | -0.03509 | -0.02113 | 0.051647 | -0.05174 | 0.007782 | 0.008511 |
| 12/16/2014 | -0.0274  | 0.014528 | -0.02603 | 0.015585 | -0.09353 | 0.01062  | -0.05165 | -0.02087 | -0.02353 | -0.02575 |
| 12/17/2014 | -0.00445 | 0.009569 | -0.02673 | 0.010257 | 0.019418 | -0.01062 | 0.014035 | 0.061333 | -0.00531 | 0.023632 |
| 12/18/2014 | 0.039392 | 0.014185 | -0.02283 | -0.01542 | 0.028438 | 0.024606 | 0.013841 | 0.041615 | 0.007947 | 0.018928 |
| 12/19/2014 | -0.01732 | -0.00471 | -0.01045 | 0.015424 | -0.02844 | 0        | -0.0069  | -0.00545 | -0.01061 | 0.026723 |
| 12/22/2014 | 0.002181 | 0        | -0.02601 | 0.005089 | 0.009569 | -0.01047 | -0.02452 | -0.01931 | -0.00401 | -0.00407 |
| 12/23/2014 | 0.014062 | -0.00473 | 0.00716  | 0.039806 | 0        | 0.020834 | 0        | 0        | -0.00672 | 0        |
| 12/24/2014 | 0.001074 | 0.004728 | -0.03018 | 0.056887 | 0.028171 | 0.006849 | 0.031416 | -0.00279 | 0.022653 | 0.010132 |
| 12/25/2014 | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 12/26/2014 | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 12/29/2014 | 0.019129 | -0.01905 | 0        | 0.009174 | 0.036368 | 0.003407 | -0.0069  | 0        | 0.003945 | 0.008032 |
| 12/30/2014 | 0.020834 | 0        | 0.009756 | -0.02778 | 0        | 0.010152 | -0.01394 | 0.008345 | -0.00791 | 0.046884 |
| 12/31/2014 | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 1/1/2015   | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 1/2/2015   | 0.013313 | 0        | 0.088224 | -0.01896 | 0.035091 | -0.00337 | -0.00351 | 0.0327   | 0.005277 | 0.00381  |
| 1/5/2015   | 0.004061 | -0.01453 | 0.01105  | -0.0048  | -0.01739 | -0.02393 | -0.00353 | 0.031665 | -0.00396 | 0        |
| 1/6/2015   | -0.01531 | -0.01474 | 0        | -0.01453 | -0.02667 | -0.02452 | -0.00709 | -0.01307 | -0.00929 | -0.02308 |
| 1/7/2015   | 0.016327 | 0        | -0.0022  | 0.014528 | 0.04406  | 0.014085 | 0.038399 | 0.015666 | 0.023717 | 0.011606 |
| 1/8/2015   | 0.021032 | -0.02506 | 0.00768  | 0.069634 | 0        | -0.01054 | 0.043558 | 0.023048 | -0.01047 | 0        |
| 1/9/2015   | 0.029299 | 0.020101 | 0.006536 | -0.02727 | 0.017094 | -0.00709 | 0.051129 | -0.00762 | 0.001315 | -0.00385 |
| 1/12/2015  | -0.00676 | -0.01    | -0.00544 | 0.004598 | 0        | -0.00357 | 0.074998 | -0.01284 | 0.005242 | -0.03537 |
| 1/13/2015  | 0.003868 | -0.03061 | 0.001091 | -0.0046  | 0        | 0.024693 | 0.150013 | 0.017926 | 0.018135 | 0.01784  |
| 1/14/2015  | -0.03938 | -0.02094 | -0.01207 | -0.01392 | -0.02575 | -0.01758 | -0.10205 | -0.00509 | -0.01292 | -0.00197 |
| 1/15/2015  | 0.002006 | -0.01064 | 0.010977 | 0        | 0.025752 | 0.031416 | -0.03077 | 0.005089 | 0.003894 | 0.007843 |



| Date      | AALI     | ADRO     | AKRA     | ANTM     | ASRI     | ASII     | BMTR     | BSDE     | CPIN     | ICBP     |
|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 2/20/2015 | -0.00996 | 0        | 0.002055 | -0.00484 | 0.036905 | -0.01266 | 0.008119 | -0.00236 | -0.00789 | -0.00702 |
| 2/23/2015 | -0.01818 | -0.01519 | -0.0124  | -0.00976 | -0.00727 | 0.006349 | 0.002692 | -0.01186 | 0.007895 | -0.01062 |
| 2/24/2015 | -0.01334 | -0.01542 | 0.006218 | -0.01482 | -0.01471 | 0.012579 | 0.016    | -0.00719 | -0.00131 | -0.00178 |
| 2/25/2015 | 0.01232  | -0.00519 | 0.001033 | -0.01    | 0        | 0.018576 | 0.015748 | 0.019048 | 0.005236 | 0.001781 |
| 2/26/2015 | 0.018201 | -0.01575 | 0        | 0.005013 | -0.01493 | -0.01235 | 0.035809 | 0.037041 | -0.00131 | 0.012379 |
| 2/27/2015 | -0.0121  | 0.015748 | 0.005147 | 0.004988 | 0.007491 | -0.02516 | 0.012485 | 0.00905  | -0.01051 | 0.005259 |
| 3/2/2015  | 0.03586  | 0.060625 | 0.021331 | 0.004963 | -0.01504 | 0.00318  | -0.00998 | -0.00905 | 0.011819 | 0.001747 |
| 3/3/2015  | 0.002931 | -0.00491 | 0.003011 | -0.00995 | -0.03861 | 0.015748 | 0.002503 | -0.00456 | -0.00918 | 0.02754  |
| 3/4/2015  | 0.013566 | -0.03    | 0.011952 | -0.00501 | -0.02391 | -0.01575 | -0.02789 | -0.01843 | 0.001317 | -0.01196 |
| 3/5/2015  | 0.012434 | 0.020101 | 0.004938 | 0.01     | -0.01626 | -0.00318 | -0.02869 | -0.00466 | -0.00132 | -0.0121  |
| 3/6/2015  | -0.00572 | -0.0201  | -0.0199  | -0.00499 | 0        | 0.028259 | 0.051558 | -0.02364 | 0.006566 | 0.010381 |
| 3/9/2015  | -0.00287 | 0.005063 | 0.005013 | -0.01511 | -0.04185 | -0.0156  | -0.02287 | -0.01932 | -0.01185 | -0.02087 |
| 3/10/2015 | 0        | -0.00506 | 0.034401 | -0.00509 | 0        | 0.00314  | -0.02078 | 0.004866 | -0.00133 | 0.019148 |
| 3/11/2015 | 0.000958 | -0.03093 | -0.00484 | -0.01026 | -0.05264 | -0.0158  | -0.03744 | -0.02956 | 0        | -0.01389 |
| 3/12/2015 | 0.001914 | 0.015585 | -0.01467 | 0.015346 | 0.008969 | 0.006349 | -0.01648 | 0.014889 | -0.00399 | 0.020762 |
| 3/13/2015 | -0.02028 | 0        | 0.009804 | -0.0102  | 0.008889 | -0.00317 | 0        | -0.00247 | -0.01476 | 0.001711 |
| 3/16/2015 | 0.015489 | -0.02611 | -0.01971 | -0.02073 | -0.00889 | 0.012618 | 0.016484 | -0.00495 | -0.02186 | 0.025318 |
| 3/17/2015 | 0.008608 | 0.010526 | -0.00499 | 0        | 0.052186 | 0.00313  | 0        | 0.026929 | 0.008253 | -0.00669 |
| 3/18/2015 | -0.0241  | 0        | 0.004988 | -0.00525 | -0.03449 | -0.00313 | -0.01926 | -0.00971 | -0.00825 | 0        |
| 3/19/2015 | 0        | 0.015585 | -0.01403 | 0.005249 | 0.034486 | 0.00936  | 0.00554  | -0.00734 | 0.017796 | -0.00336 |
| 3/20/2015 | 0.004866 | -0.02083 | -0.03178 | -0.07612 | -0.01709 | 0.006192 | -0.00277 | -0.0074  | -0.01229 | 0.016695 |
| 3/23/2015 | -0.04062 | 0.020834 | 0.04581  | 0.016807 | -0.01739 | 0.009217 | 0        | 0        | -0.01383 | -0.02007 |
| 3/24/2015 | -0.0071  | 0.005141 | 0.009901 | -0.01117 | 0        | -0.00306 | 0.021919 | 0.017178 | 0.009702 | -0.00678 |
| 3/25/2015 | -0.04371 | -0.01031 | -0.01489 | -0.017   | -0.04485 | 0.006116 | -0.03587 | -0.00733 | -0.02939 | -0.0241  |
| 3/26/2015 | -0.01285 | -0.02094 | -0.001   | -0.01729 | -0.03739 | -0.00612 | -0.04012 | -0.01731 | -0.05099 | -0.01227 |

| Date      | AALI     | ADRO     | AKRA     | ANTM     | ASRI     | ASII     | BMTR     | BSDE     | CPIN     | ICBP     |
|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 3/27/2015 | 0.019211 | 0.005277 | 0        | -0.00583 | 0.028171 | 0.006116 | 0        | 0        | 0.019246 | -0.00531 |
| 3/30/2015 | 0.006322 | 0.010471 | 0.001001 | 0.005831 | 0.027399 | 0.021117 | 0        | 0.046293 | 0.023189 | 0.007067 |
| 3/31/2015 | 0.020791 | -0.01047 | 0.024693 | 0.005797 | 0        | 0.0236   | 0.023122 | 0.016529 | 0.015636 | 0.032903 |
| 4/1/2015  | -0.01242 | 0.010471 | 0.042966 | 0.045205 | 0.052644 | -0.04777 | 0.005698 | 0.007001 | -0.03152 | -0.01892 |
| 4/2/2015  | -0.00418 | 0.020619 | 0.032187 | 0.00551  | 0.041847 | -0.01231 | 0        | 0.009259 | -0.0191  | -0.00522 |
| 4/3/2015  | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 4/6/2015  | -0.01581 | 0        | 0        | 0        | 0.008163 | 0.015361 | -0.0057  | 0        | 0.016189 | 0        |
| 4/7/2015  | 0.01999  | 0        | 0.013483 | 0.005479 | 0.032003 | -0.00612 | 0.002853 | 0.011455 | 0.05399  | 0.001744 |
| 4/8/2015  | 0.007265 | -0.01542 | -0.00447 | -0.01099 | 0.007843 | -0.02171 | -0.00285 | -0.01839 | 0.004141 | 0.010399 |
| 4/9/2015  | -0.00415 | 0.015424 | -0.02268 | 0.016439 | -0.01575 | 0.021706 | -0.02312 | 0        | 0.010959 | -0.00173 |
| 4/10/2015 | 0.002075 | -0.00512 | -0.04216 | -0.01644 | 0.007905 | 0        | -0.00293 | -0.00232 | 0.006789 | -0.01567 |
| 4/13/2015 | -0.01567 | -0.02073 | -0.01932 | -0.01671 | -0.00791 | 0.003063 | -0.03582 | -0.03792 | -0.04427 | -0.00351 |
| 4/14/2015 | -0.01913 | 0        | -0.02469 | -0.00563 | 0.015748 | 0.003053 | -0.02774 | -0.00484 | 0.001413 | -0.00353 |
| 4/15/2015 | -0.01732 | 0.005222 | 0.004988 | 0.016807 | 0.007782 | -0.00305 | -0.00313 | 0.042762 | 0.008439 | 0.001765 |
| 4/16/2015 | -0.00657 | 0.005195 | 0.009901 | -0.01117 | 0.015385 | -0.01541 | -0.0158  | -0.00466 | 0.030347 | 0.015748 |
| 4/17/2015 | 0.015267 | -0.00519 | 0.048086 | -0.0113  | -0.02317 | -0.00936 | -0.01929 | -0.00234 | -0.02337 | -0.00348 |
| 4/20/2015 | -0.01198 | -0.01047 | 0.009346 | -0.0057  | 0.007782 | -0.03509 | -0.01967 | -0.01653 | -0.01825 | -0.01051 |
| 4/21/2015 | 0.022741 | 0.025975 | 0.02299  | -0.01149 | 0.007722 | 0.028802 | 0.042146 | 0.007117 | 0.011268 | 0.007018 |
| 4/22/2015 | -0.01185 | -0.00514 | 0        | 0        | 0        | -0.00316 | -0.00957 | 0.011751 | -0.02697 | -0.0035  |

## b. 10 saham kedua

| Date     | INCO     | INDF     | INTP     | ITMG     | KLBF     | LPKR     | LSIP     | MNCN     | MPPA     | PGAS     |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 1/1/2014 |          |          |          |          |          |          |          |          |          |          |
| 1/2/2014 | -0.05827 | 0.015038 | 0.017349 | -0.01413 | 0.054488 | 0        | -0.01567 | 0.009479 | 0.005141 | 0.02755  |
| 1/3/2014 | -0.05129 | 0        | -0.01735 | -0.03439 | 0        | -0.01105 | -0.03209 | -0.01905 | -0.0155  | -0.01093 |

| <b>Date</b> | <b>INCO</b> | <b>INDF</b> | <b>INTP</b> | <b>ITMG</b> | <b>KLBF</b> | <b>LPKR</b> | <b>LSIP</b> | <b>MNCN</b> | <b>MPPA</b> | <b>PGAS</b> |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 1/6/2014    | -0.08797    | -0.00374    | 0.016119    | -0.02235    | -0.0076     | -0.02817    | -0.03035    | -0.02927    | -0.04256    | -0.03352    |
| 1/7/2014    | 0.006873    | -0.00752    | -0.00617    | -0.03839    | -0.01927    | -0.00573    | -0.06959    | -0.00596    | -0.05015    | -0.02999    |
| 1/8/2014    | 0.004556    | 0.011257    | 0           | 0.025122    | 0.011606    | 0           | 0.020803    | 0           | -0.01149    | -0.00469    |
| 1/9/2014    | -0.02299    | -0.01883    | 0.001237    | -0.01927    | 0.022815    | 0           | -0.04512    | -0.00399    | 0.020029    | 0.007034    |
| 1/10/2014   | 0.067441    | 0.015095    | 0.031633    | 0           | 0.029632    | 0.028331    | -0.05698    | 0.003992    | -0.00853    | 0.035575    |
| 1/13/2014   | 0.052922    | 0.007463    | 0.050215    | -0.00195    | 0.042864    | 0.049056    | -0.02975    | -0.00199    | 0.0226      | -0.00339    |
| 1/14/2014   | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           |
| 1/15/2014   | 0.083052    | -0.00746    | 0           | -0.02168    | 0           | 0.021053    | 0.019934    | 0.003984    | 0.046393    | -0.01138    |
| 1/16/2014   | -0.01337    | 0.007463    | -0.01492    | -0.00399    | -0.0212     | 0.005195    | 0.013072    | -0.02823    | 0.002663    | -0.02549    |
| 1/17/2014   | 0.007663    | -0.00746    | 0.012637    | 0.004988    | -0.00717    | 0           | 0.022473    | 0.002043    | 0           | 0.02892     |
| 1/20/2014   | -0.00766    | 0.011173    | -0.01264    | 0.013834    | 0.010734    | 0           | 0.05557     | -0.01232    | 0           | 0.068308    |
| 1/21/2014   | 0.020933    | 0.003697    | -0.00813    | 0.012677    | 0.003552    | 0.010309    | 0.017858    | -0.01247    | 0.021053    | 0.001064    |
| 1/22/2014   | 0.035156    | 0.057363    | -0.02957    | 0.039891    | 0.00354     | 0           | -0.01187    | 0.022752    | 0           | 0.005305    |
| 1/23/2014   | -0.02578    | 0.013841    | 0.021378    | 0.025737    | -0.00354    | 0.010204    | 0.063605    | -0.01442    | 0.038319    | -0.0085     |
| 1/24/2014   | -0.01126    | 0           | 0.001174    | -0.02481    | 0           | -0.00509    | -0.0141     | -0.01043    | 0.005       | 0.003197    |
| 1/27/2014   | -0.07643    | -0.0457     | -0.05179    | -0.04665    | -0.03979    | -0.05237    | -0.03469    | -0.04065    | -0.03554    | -0.03024    |
| 1/28/2014   | -0.03313    | 0           | 0.049437    | 0.003891    | 0.036236    | 0.005362    | -0.03899    | -0.01319    | 0.020461    | 0.008734    |
| 1/29/2014   | 0.004202    | -0.0036     | 0.024406    | 0.019231    | 0.01062     | 0.021165    | 0.021181    | -0.01786    | 0.010076    | 0.034191    |
| 1/30/2014   | -0.03412    | 0.007194    | 0.028298    | 0.020736    | -0.01062    | -0.00525    | -0.00902    | 0.006734    | 0.005       | 0.002099    |
| 1/31/2014   | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           |
| 2/3/2014    | 0.002167    | -0.00719    | -0.04334    | -0.01693    | -0.01434    | -0.01058    | 0.014993    | 0.028668    | 0.014852    | 0.004184    |
| 2/4/2014    | -0.00217    | -0.01455    | -0.02598    | -0.01819    | 0.01789     | -0.01609    | -0.03021    | -0.00218    | 0           | -0.00944    |
| 2/5/2014    | 0           | 0.007299    | 0.016608    | 0.034191    | 0           | -0.00542    | 0           | 0.008677    | 0.01221     | 0.015682    |
| 2/6/2014    | 0.008639    | 0.021584    | -0.00118    | 0.026717    | 0.007067    | 0.00542     | 0.044985    | -0.01304    | 0.023982    | 0.002073    |
| 2/7/2014    | 0.046227    | 0.003552    | 0.012873    | 0.021584    | -0.00353    | 0.005391    | 0.008759    | 0.004367    | 0.030341    | 0           |
| 2/10/2014   | -0.01032    | 0           | 0.010411    | -0.00357    | -0.01066    | 0           | 0.017291    | -0.01316    | -0.0519     | -0.00104    |

| <b>Date</b> | <b>INCO</b> | <b>INDF</b> | <b>INTP</b> | <b>ITMG</b> | <b>KLBF</b> | <b>LPKR</b> | <b>LSIP</b> | <b>MNCN</b> | <b>MPPA</b> | <b>PGAS</b> |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 2/11/2014   | 0.042646    | -0.02151    | 0.014849    | -0.02715    | 0           | 0           | 0.019803    | 0.008791    | 0.002418    | -0.00519    |
| 2/12/2014   | -0.00199    | 0.014389    | 0.015748    | 0.001833    | 0.007117    | 0           | 0.027626    | 0.006543    | 0.026223    | 0.001041    |
| 2/13/2014   | 0.015811    | -0.00358    | -0.00223    | 0.007299    | -0.01429    | -0.00539    | -0.00273    | 0           | 0.011696    | -0.00313    |
| 2/14/2014   | 0           | 0.003578    | -0.00673    | -0.01097    | 0.003591    | 0.010753    | 0.026956    | -0.01093    | -0.00233    | 0.028809    |
| 2/17/2014   | 0.011696    | 0.003565    | 0.010084    | -0.00553    | 0.007143    | 0.021165    | 0.01321     | 0.02174     | 0.006969    | 0.005058    |
| 2/18/2014   | 0.015385    | -0.00357    | 0.001114    | -0.00556    | -0.00714    | -0.01583    | 0.041137    | 0.008565    | -0.00232    | 0.002016    |
| 2/19/2014   | 0           | 0           | 0.008869    | -0.00746    | 0.017762    | -0.0107     | 0.017479    | 0.047876    | 0.009238    | 0.016975    |
| 2/20/2014   | -0.00766    | 0           | 0           | 0.010247    | 0.013986    | 0           | -0.01496    | 0.004057    | 0.002296    | 0           |
| 2/21/2014   | -0.01161    | 0.007117    | 0.005504    | -0.01212    | 0.020619    | 0.021277    | -0.0101     | 0.002022    | -0.00922    | -0.00995    |
| 2/24/2014   | -0.04171    | -0.0107     | -0.02332    | -0.02662    | -0.00683    | -0.01058    | 0.002535    | -0.00608    | -0.01869    | 0           |
| 2/25/2014   | -0.02049    | 0           | -0.01586    | -0.02241    | -0.01727    | -0.00533    | -0.01274    | -0.00203    | -0.01186    | -0.01005    |
| 2/26/2014   | 0.018462    | -0.00359    | -0.03367    | -0.0099     | -0.02469    | -0.00536    | 0.020305    | 0.016162    | -0.02906    | -0.01732    |
| 2/27/2014   | -0.03096    | 0.010734    | 0.025642    | 0.018729    | 0           | 0.016       | 0.039414    | -0.01007    | -0.00246    | 0.007168    |
| 2/28/2014   | 0.002094    | 0.021128    | 0.032827    | 0.015504    | 0.035091    | -0.00531    | 0           | 0.025975    | 0.064385    | 0           |
| 3/3/2014    | 0.012474    | -0.00349    | -0.02025    | -0.02335    | -0.01389    | -0.00533    | -0.00971    | -0.01791    | -0.00928    | 0.00813     |
| 3/4/2014    | 0.052326    | -0.0035     | -0.00913    | 0.018528    | 0           | -0.00536    | -0.01227    | 0.019881    | 0           | 0.001012    |
| 3/5/2014    | 0.053448    | 0.013938    | 0.006857    | -0.00387    | 0           | 0           | 0.05757     | -0.00197    | 0.009281    | 0.011061    |
| 3/6/2014    | 0           | 0.023933    | 0.004545    | -0.01171    | -0.00702    | 0.021277    | 0.041102    | 0           | 0.004608    | 0           |
| 3/7/2014    | 0.007407    | 0.003373    | 0.020203    | -0.00591    | 0.003515    | 0.075986    | 0.033006    | 0.034887    | 0           | -0.00803    |
| 3/10/2014   | -0.04336    | -0.00337    | 0.013245    | -0.00396    | -0.00704    | 0.038282    | 0.019293    | 0.001903    | 0.006873    | 0           |
| 3/11/2014   | 0.013397    | 0.013423    | -0.0044     | 0.002969    | 0.003527    | -0.00471    | -0.01067    | 0.055467    | 0.015855    | -0.00911    |
| 3/12/2014   | -0.02698    | 0.006645    | -0.02227    | -0.02806    | -0.00353    | 0.023311    | -0.05741    | -0.00541    | 0.013393    | 0.014142    |
| 3/13/2014   | 0.003899    | 0.019673    | 0           | 0.012121    | 0.02098     | 0.009174    | -0.01373    | -0.00181    | 0.021931    | 0.037406    |
| 3/14/2014   | -0.01174    | 0.006473    | 0.077962    | -0.02439    | 0.020549    | 0.035878    | 0.033978    | -0.0369     | 0.038303    | 0.019139    |
| 3/17/2014   | 0           | -0.00972    | 0.020619    | -0.00412    | 0.010118    | 0.092503    | 0.024204    | -0.03637    | 0.042908    | 0.004728    |
| 3/18/2014   | 0.017561    | -0.02307    | -0.02062    | -0.02088    | -0.02034    | 0.004008    | -0.01533    | -0.00391    | 0           | -0.02387    |

| Date      | INCO     | INDF     | INTP     | ITMG     | KLBF     | LPKR     | LSIP     | MNCN     | MPPA     | PGAS     |
|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 3/19/2014 | 0.072725 | -0.00334 | 0.002081 | -0.00317 | -0.02778 | -0.00401 | 0.041087 | 0.040274 | 0.039221 | -0.01951 |
| 3/20/2014 | -0.01998 | -0.03402 | -0.03814 | -0.04768 | -0.00353 | -0.04518 | -0.03011 | -0.02667 | -0.00192 | -0.03918 |
| 3/21/2014 | 0        | 0.013746 | 0.017131 | 0.063428 | 0.007042 | -0.00421 | -0.00438 | 0.019121 | 0.015297 | 0.058694 |
| 3/24/2014 | 0.016379 | -0.03827 | 0.027227 | -0.00418 | 0.017392 | -0.01702 | -0.0066  | -0.0038  | 0.020658 | -0.0354  |
| 3/25/2014 | 0.01789  | -0.00355 | 0.001033 | -0.01157 | -0.00345 | -0.0305  | -0.04747 | -0.00763 | 0.001857 | -0.00905 |
| 3/26/2014 | -0.01249 | 0.007092 | -0.00103 | 0.009479 | 0.013746 | 0.004415 | 0.020619 | 0.018976 | 0.012903 | 0.015038 |
| 3/27/2014 | 0        | 0.024434 | -0.01667 | 0.014568 | 0.006803 | -0.04967 | -0.00683 | -0.01134 | -0.01476 | 0.019705 |
| 3/28/2014 | 0.012489 | 0.006873 | -0.01802 | 0.006179 | -0.0068  | 0.004619 | 0.009091 | 0        | -0.00186 | 0        |
| 3/31/2014 | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 4/1/2014  | 0.010582 | 0.016978 | 0.018019 | 0.016294 | 0.026938 | 0.06252  | 0        | 0.018833 | 0.02392  | 0.024098 |
| 4/2/2014  | -0.01058 | -0.00337 | 0.004193 | 0.004032 | -0.00667 | -0.0087  | 0.017938 | -0.01126 | 0.007246 | -0.0241  |
| 4/3/2014  | 0.029697 | -0.01361 | 0.017626 | -0.00808 | 0.006667 | 0.021599 | -0.01117 | -0.00758 | 0.003604 | 0.004866 |
| 4/4/2014  | 0.048708 | -0.02076 | -0.00722 | -0.01946 | -0.00333 | -0.0129  | 0.008949 | 0.003795 | 0.055959 | -0.00487 |
| 4/7/2014  | -0.00328 | 0.010435 | 0.032589 | 0.005157 | 0.016529 | 0.034046 | -0.00895 | 0.046262 | 0        | 0.038282 |
| 4/8/2014  | 0.027577 | -0.00694 | 0        | 0.001028 | -0.00988 | 0.004175 | 0        | 0.00541  | -0.00512 | -0.00943 |
| 4/9/2014  | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 4/10/2014 | 0.012719 | -0.02113 | -0.09341 | 0.004103 | 0        | -0.06899 | -0.02734 | -0.02366 | 0.010204 | -0.01432 |
| 4/11/2014 | 0.044795 | 0.024606 | -0.00552 | 0.039142 | 0        | -0.02257 | 0.018307 | 0.018249 | -0.01535 | 0.01432  |
| 4/14/2014 | 0.050084 | 0.003466 | 0.015368 | -0.00296 | 0.006601 | 0.031463 | 0.020203 | 0.00361  | -0.02435 | 0.009434 |
| 4/15/2014 | 0.002869 | -0.01043 | 0.019418 | -0.01692 | -0.00329 | -0.00443 | 0.026317 | 0.003597 | -0.01776 | 0.013986 |
| 4/16/2014 | -0.0276  | -0.01408 | 0.001068 | 0.015937 | 0.013115 | -0.00893 | 0.031952 | 0.019556 | -0.02725 | -0.02817 |
| 4/17/2014 | 0.046051 | 0.021053 | 0.001067 | 0.000988 | 0.006494 | 0        | -0.0021  | 0.008764 | -0.02801 | 0.018868 |
| 4/18/2014 | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 4/21/2014 | -0.0242  | -0.00348 | -0.01938 | 0.001972 | -0.01961 | -0.01354 | -0.01482 | 0.015585 | 0.016902 | 0.009302 |
| 4/22/2014 | 0.0437   | 0.006944 | -0.00983 | 0.02337  | 0.016367 | -0.03234 | 0.006376 | 0.005141 | 0.005571 | 0        |
| 4/23/2014 | 0.021829 | -0.01043 | -0.00771 | 0.025655 | 0.006473 | -0.00943 | 0.025106 | -0.00342 | 0.018349 | 0.004619 |





| <b>Date</b> | <b>INCO</b> | <b>INDF</b> | <b>INTP</b> | <b>ITMG</b> | <b>KLBF</b> | <b>LPKR</b> | <b>LSIP</b> | <b>MNCN</b> | <b>MPPA</b> | <b>PGAS</b> |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 5/30/2014   | -0.01647    | 0.00367     | -0.04215    | -0.02839    | -0.04755    | -0.05635    | -0.02564    | 0.039645    | 0.078834    | -0.05382    |
| 6/2/2014    | 0.002551    | 0.007299    | 0.010977    | 0.037676    | 0.035091    | -0.0146     | 0           | -0.00354    | 0           | -0.03279    |
| 6/3/2014    | 0.005083    | 0.01085     | 0.010858    | 0.008368    | -0.00945    | 0.00489     | 0.010764    | 0.010582    | 0.030185    | -0.00477    |
| 6/4/2014    | -0.01147    | -0.00722    | 0.001079    | -0.01342    | 0.00316     | 0.019324    | -0.01946    | -0.00176    | 0.012442    | 0           |
| 6/5/2014    | -0.0129     | -0.00727    | -0.00324    | 0           | 0           | 0.009524    | 0.002181    | 0.001756    | 0.009231    | 0.018958    |
| 6/6/2014    | 0.014185    | -0.00733    | 0.021414    | 0           | 0.012539    | -0.00952    | -0.01095    | -0.03936    | 0.009146    | 0.013986    |
| 6/9/2014    | -0.01289    | 0           | -0.01925    | -0.03787    | 0           | -0.01446    | -0.03588    | 0.041114    | -0.00456    | 0.004619    |
| 6/10/2014   | -0.00651    | 0.007326    | 0.021368    | 0           | 0.0397      | 0           | 0.011351    | 0           | -0.00305    | 0.009174    |
| 6/11/2014   | -0.01314    | 0.007273    | 0.007372    | -0.02128    | 0           | 0.019231    | 0.004505    | 0.013913    | -0.0046     | 0.004556    |
| 6/12/2014   | -0.01466    | -0.00363    | 0.024872    | -0.00359    | -0.02424    | 0           | -0.00225    | -0.01216    | 0.003067    | 0           |
| 6/13/2014   | -0.01488    | 0           | 0.017251    | -0.0036     | -0.01235    | 0           | 0.008969    | -0.0035     | 0.007628    | -0.01373    |
| 6/16/2014   | -0.00546    | -0.01097    | -0.01316    | -0.01913    | -0.00623    | -0.00957    | 0.015504    | -0.02847    | 0.021053    | -0.02331    |
| 6/17/2014   | 0.021681    | 0.00367     | 0.017181    | 0.012797    | 0.027737    | 0.009569    | -0.00662    | 0.038943    | -0.01348    | 0.027909    |
| 6/18/2014   | -0.00268    | 0           | -0.03052    | 0.019785    | -0.0061     | -0.00957    | 0.017544    | -0.02996    | 0.009009    | 0.009132    |
| 6/19/2014   | -0.02725    | 0           | 0.002064    | -0.03166    | -0.02164    | -0.01453    | -0.01093    | -0.02353    | -0.00449    | 0           |
| 6/20/2014   | -0.02235    | 0           | -0.03782    | -0.00831    | 0.012423    | -0.01971    | 0.008753    | -0.02035    | -0.03826    | -0.00913    |
| 6/23/2014   | 0.005634    | 0           | -0.01076    | -0.00651    | 0.015314    | -0.00499    | -0.00656    | -0.01128    | -0.04957    | 0           |
| 6/24/2014   | 0           | 0           | -0.0087     | 0.018485    | 0.009077    | -0.03563    | 0.008734    | -0.00759    | -0.01653    | -0.00922    |
| 6/25/2014   | -0.00563    | -0.00735    | -0.01429    | 0           | 0           | -0.02625    | 0.017242    | 0.035551    | -0.02874    | 0           |
| 6/26/2014   | 0.009838    | 0.007353    | 0.001107    | 0.003656    | 0.006006    | 0.021053    | 0.025318    | -0.00184    | 0.015319    | 0.018349    |
| 6/27/2014   | -0.00561    | -0.00367    | -0.00443    | -0.00917    | -0.00601    | -0.01575    | -0.01469    | -0.01671    | -0.01704    | -0.00913    |
| 6/30/2014   | 0           | -0.01482    | 0.00222     | -0.00554    | 0           | 0.015748    | -0.02137    | 0.033152    | 0.071281    | 0.022677    |
| 7/1/2014    | 0.001405    | 0.007435    | 0.019759    | -0.01775    | 0.014948    | -0.00522    | -0.01523    | -0.00727    | 0           | -0.01354    |
| 7/2/2014    | 0           | 0.01105     | 0.006501    | 0.010314    | 0.005917    | 0.010417    | -0.01325    | 0.014493    | 0           | 0.004535    |
| 7/3/2014    | 0.043963    | 0           | -0.00325    | 0.005581    | 0           | 0.015424    | 0.004435    | -0.0018     | -0.02265    | -0.01367    |
| 7/4/2014    | 0.006698    | -0.00367    | 0.012917    | 0.00555     | -0.00592    | 0.030153    | -0.00443    | -0.01818    | -0.0165     | -0.0046     |

| Date      | INCO     | INDF     | INTP     | ITMG     | KLBF     | LPKR     | LSIP     | MNCN     | MPPA     | PGAS     |
|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 7/7/2014  | -0.00267 | 0.014599 | 0.067209 | 0.00552  | 0.005917 | 0.048319 | 0.00222  | 0.001833 | 0.003322 | 0.018265 |
| 7/8/2014  | -0.01756 | 0        | 0        | -0.01852 | 0.01173  | 0.027909 | -0.01339 | 0        | -0.01168 | 0        |
| 7/9/2014  | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 7/10/2014 | 0.009492 | 0.025046 | 0.019803 | -0.01317 | 0.017341 | 0.066543 | 0.024419 | -0.06429 | -0.00168 | 0.031183 |
| 7/11/2014 | -0.03014 | 0.003527 | 0.008785 | -0.01527 | -0.00575 | -0.0305  | -0.01325 | 0.028876 | -0.01014 | -0.00881 |
| 7/14/2014 | -0.00838 | -0.00707 | -0.00389 | -0.02927 | -0.02038 | 0        | -0.02703 | 0.011321 | -0.0034  | 0.008811 |
| 7/15/2014 | 0.02082  | 0        | 0.008742 | -0.00795 | 0.014599 | 0.017544 | -0.03013 | 0.003745 | 0        | 0.004376 |
| 7/16/2014 | 0.043017 | 0.00354  | 0.009625 | 0.011905 | 0.036989 | 0.017242 | 0.00235  | 0.005592 | 0.020237 | 0.03011  |
| 7/17/2014 | -0.01325 | -0.01424 | -0.01739 | -0.00991 | -0.03121 | -0.02598 | -0.02135 | -0.01876 | -0.11299 | -0.00425 |
| 7/18/2014 | 0.01061  | 0.014235 | 0.013553 | 0.008924 | -0.00868 | 0        | 0.007168 | -0.01912 | 0.079036 | 0.004246 |
| 7/21/2014 | -0.00132 | -0.00354 | 0.01716  | 0.0108   | 0.01443  | 0.017392 | -0.00477 | 0.005775 | 0.027259 | 0.020965 |
| 7/22/2014 | -0.02001 | -0.00712 | -0.00759 | -0.02272 | -0.00287 | -0.00866 | -0.04402 | -0.01547 | -0.01354 | 0.008265 |
| 7/23/2014 | 0.008054 | 0.007117 | -0.00477 | 0.008951 | 0.011429 | -0.00436 | 0.004988 | 0.005831 | -0.00512 | 0.004107 |
| 7/24/2014 | 0.043172 | 0.00354  | -0.0203  | 0.045484 | -0.0057  | -0.04009 | 0.031826 | 0.007722 | 0.003419 | -0.01653 |
| 7/25/2014 | 0.030267 | 0        | -0.02572 | -0.01046 | -0.01149 | 0        | 0.011976 | 0.005753 | 0.005106 | -0.01681 |
| 7/28/2014 | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 7/29/2014 | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 7/30/2014 | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 7/31/2014 | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 8/1/2014  | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 8/4/2014  | -0.00623 | 0.014035 | -0.02434 | 0.070139 | -0.04432 | 0.004535 | 0.007117 | 0.061187 | -0.01712 | 0.033336 |
| 8/5/2014  | -0.03304 | -0.01404 | -0.00412 | -0.0271  | -0.01216 | 0.031183 | 0.004717 | -0.0018  | -0.02448 | -0.01653 |
| 8/6/2014  | -0.02089 | -0.00354 | 0        | 0.02174  | -0.02477 | -0.0177  | 0.009368 | -0.01818 | -0.02509 | -0.03822 |
| 8/7/2014  | 0.048916 | -0.00712 | 0.007191 | 0.003578 | 0.021706 | 0.008889 | -0.01172 | -0.02226 | -0.03134 | -0.0087  |
| 8/8/2014  | -0.0101  | -0.00358 | -0.00925 | -0.01984 | 0        | 0.021883 | 0.002356 | 0.031397 | 0.01487  | 0        |
| 8/11/2014 | -0.00127 | 0.014235 | 0.01232  | -0.00182 | 0.006116 | 0.012903 | -0.01422 | 0.046189 | 0.029093 | 0.021599 |

| Date      | INCO     | INDF     | INTP     | ITMG     | KLBF     | LPKR     | LSIP     | MNCN     | MPPA     | PGAS     |
|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 8/12/2014 | 0.025095 | 0.003527 | 0.003057 | 0        | 0        | 0.029476 | -0.02416 | 0.00692  | 0.014235 | 0.012739 |
| 8/13/2014 | 0.015981 | 0.003515 | 0.001017 | 0.021661 | -0.00612 | 0.012371 | -0.00245 | 0        | 0.041528 | 0.004211 |
| 8/14/2014 | -0.03096 | 0.003503 | 0        | 0.026433 | 0        | -0.03334 | 0.002448 | -0.03688 | 0        | -0.01695 |
| 8/15/2014 | 0        | -0.00702 | 0.00203  | 0.016387 | -0.00925 | -0.01279 | -0.0123  | 0.036879 | 0.001693 | 0.004264 |
| 8/18/2014 | -0.01266 | 0.003515 | 0        | 0.001709 | 0.009245 | 0.004283 | -0.00248 | 0        | 0.031643 | -0.00426 |
| 8/19/2014 | -0.00639 | -0.0177  | -0.00203 | -0.00342 | 0.006116 | -0.00428 | 0.022087 | 0.022166 | 0.017872 | 0        |
| 8/20/2014 | 0.014004 | 0.010657 | -0.00203 | 0.002567 | 0.024098 | 0.004283 | -0.00731 | -0.01187 | -0.00161 | 0.008511 |
| 8/21/2014 | 0.043297 | 0.007042 | 0.014156 | -0.02598 | 0.002972 | 0        | 0.002442 | -0.02069 | -0.00323 | 0.008439 |
| 8/22/2014 | -0.00973 | -0.00351 | 0.017911 | -0.02667 | 0.002963 | -0.01724 | -0.0098  | 0.015558 | 0.003231 | 0.004193 |
| 8/25/2014 | 0.018171 | -0.00353 | -0.00792 | 0.016086 | -0.00892 | -0.02643 | -0.03509 | 0.010239 | -0.00161 | 0        |
| 8/26/2014 | -0.01451 | -0.01066 | -0.03027 | -0.0107  | -0.00599 | -0.04101 | -0.02846 | -0.04337 | -0.02785 | -0.00419 |
| 8/27/2014 | 0.001217 | -0.00717 | 0.003069 | 0.021277 | 0        | 0.00464  | 0.002621 | 0.008826 | -0.01338 | 0        |
| 8/28/2014 | 0.010889 | 0        | 0        | 0.005249 | 0.008969 | 0.004619 | -0.00262 | -0.00352 | 0.031486 | 0        |
| 8/29/2014 | 0.005999 | -0.01085 | -0.00924 | -0.01672 | -0.01198 | -0.01392 | -0.01854 | -0.01064 | 0.004882 | -0.02553 |
| 9/1/2014  | 0        | 0.021584 | -0.00517 | 0.021072 | 0.011976 | -0.00939 | -0.01889 | 0.001781 | 0        | 0.004301 |
| 9/2/2014  | 0.015431 | 0        | 0.013382 | -0.00087 | -0.00298 | -0.00948 | 0.018894 | -0.00535 | 0.012903 | 0.004283 |
| 9/3/2014  | -0.01066 | 0.007092 | 0.006116 | 0.018096 | 0.005952 | 0.018868 | 0.023779 | 0.005352 | 0.012739 | 0.012739 |
| 9/4/2014  | 0.064539 | -0.00709 | -0.01536 | -0.00257 | -0.00297 | -0.00468 | -0.01314 | -0.01795 | -0.01756 | 0.004211 |
| 9/5/2014  | 0        | -0.00714 | -0.00517 | -0.01379 | 0        | -0.01896 | -0.00531 | 0        | 0.017558 | 0.004193 |
| 9/8/2014  | 0.005565 | 0.003578 | 0.017481 | 0.003466 | 0.005935 | -0.0048  | 0.01321  | -0.02198 | 0.012579 | -0.00419 |
| 9/9/2014  | -0.0078  | 0        | -0.02164 | -0.04422 | -0.00892 | -0.02433 | -0.0266  | -0.00557 | -0.00156 | -0.00421 |
| 9/10/2014 | -0.07428 | -0.00717 | -0.01047 | -0.05196 | -0.009   | -0.01489 | -0.04408 | 0.011111 | 0        | 0.004211 |
| 9/11/2014 | -0.03681 | 0        | -0.02883 | -0.00765 | 0        | 0        | -0.01418 | 0        | 0        | 0        |
| 9/12/2014 | 0.00995  | 0.014286 | 0.003245 | 0.024646 | 0.003008 | 0        | 0.033711 | 0.009166 | 0        | 0        |
| 9/15/2014 | -0.00496 | -0.00355 | 0.036059 | -0.02561 | 0.002999 | 0.014889 | 0.002759 | 0.01629  | 0.017068 | 0.008368 |
| 9/16/2014 | 0.017263 | -0.00714 | -0.01999 | 0.04324  | -0.00902 | -0.0099  | 0        | 0.062629 | 0.015267 | -0.00837 |

| <b>Date</b> | <b>INCO</b> | <b>INDF</b> | <b>INTP</b> | <b>ITMG</b> | <b>KLBF</b> | <b>LPKR</b> | <b>LSIP</b> | <b>MNCN</b> | <b>MPPA</b> | <b>PGAS</b> |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 9/17/2014   | 0.019371    | 0.014235    | 0.003183    | 0.005505    | 0.009023    | 0.048553    | 0.032523    | 0.010067    | 0           | 0           |
| 9/18/2014   | -0.00601    | 0.003527    | 0.001059    | -0.02033    | 0           | -0.00475    | 0.015873    | 0.031227    | -0.01527    | 0.012526    |
| 9/19/2014   | -0.03062    | 0           | 0.011573    | 0.012065    | 0.00299     | -0.00477    | -0.00263    | 0.020817    | 0           | -0.01674    |
| 9/22/2014   | -0.01378    | 0.003515    | -0.01369    | 0.014652    | 0.008915    | -0.00962    | -0.01592    | 0.015724    | -0.00154    | 0.020878    |
| 9/23/2014   | -0.02425    | -0.01413    | -0.01603    | -0.03704    | 0.0059      | -0.00971    | -0.00268    | -0.0189     | -0.04089    | 0           |
| 9/24/2014   | 0.001291    | 0.003552    | -0.00324    | -0.00758    | -0.01482    | -0.0098     | 0.010667    | 0.003175    | 0.009585    | -0.0083     |
| 9/25/2014   | 0.007712    | -0.01789    | -0.01196    | 0.01322     | 0.014815    | 0           | 0.005291    | 0.020393    | 0.048109    | 0.004158    |
| 9/26/2014   | -0.0103     | 0.003604    | -0.02999    | -0.05793    | -0.00295    | -0.02494    | -0.01328    | -0.00623    | 0.00905     | -0.00416    |
| 9/29/2014   | -0.00519    | 0.003591    | -0.01476    | 0.029385    | 0           | -0.03077    | -0.01075    | -0.0047     | -0.03514    | 0.004158    |
| 9/30/2014   | -0.02502    | 0.003578    | -0.01383    | 0.002892    | 0.002946    | -0.02105    | 0.026668    | 0.003135    | -0.02042    | -0.00416    |
| 10/1/2014   | -0.02703    | -0.00358    | 0.005784    | 0.002883    | -0.01482    | 0.031416    | 0.020834    | -0.01577    | 0           | -0.01681    |
| 10/2/2014   | -0.04196    | -0.02174    | -0.03045    | 0.013346    | -0.009      | -0.05292    | -0.04211    | -0.02903    | -0.03062    | -0.02575    |
| 10/3/2014   | 0.016998    | -0.00735    | 0.002375    | 0.024323    | 0.006006    | -0.02198    | -0.00539    | -0.02654    | -0.05035    | 0.017242    |
| 10/6/2014   | 0.03722     | 0           | 0.033822    | -0.01584    | -0.003      | 0.00554     | 0.018742    | -0.03593    | 0.010274    | -0.00428    |
| 10/7/2014   | 0.012105    | 0.014652    | 0.031605    | -0.00471    | -0.00301    | 0.037945    | 0.007926    | 0.024098    | -0.01892    | -0.0043     |
| 10/8/2014   | -0.00536    | -0.02206    | -0.03275    | -0.00568    | -0.00302    | -0.02696    | -0.00793    | -0.00683    | -0.02996    | -0.01302    |
| 10/9/2014   | -0.00539    | 0.007407    | 0.017075    | -0.03279    | 0           | 0.048009    | 0.007926    | 0.008525    | 0.003571    | 0.008696    |
| 10/10/2014  | -0.01224    | 0.011009    | -0.0068     | -0.03492    | -0.0091     | 0.020619    | -0.01859    | -0.00681    | -0.05684    | -0.00434    |
| 10/13/2014  | 0.001367    | -0.00733    | 0           | -0.07044    | -0.01536    | -0.01026    | 0.002677    | -0.00514    | 0.027909    | -0.00873    |
| 10/14/2014  | 0.006807    | 0.021819    | 0.006795    | -0.02873    | -0.00621    | -0.00517    | -0.00805    | -0.00172    | 0.096144    | 0.017392    |
| 10/15/2014  | -0.01091    | 0.007168    | 0.015678    | -0.12397    | 0           | 0.005168    | -0.04408    | 0.015372    | 0.006645    | 0           |
| 10/16/2014  | 0.009556    | -0.02532    | -0.00781    | 0.021344    | 0.0397      | 0.005141    | -0.01418    | 0.006757    | -0.03882    | 0           |
| 10/17/2014  | -0.00272    | 0.02174     | 0.02543     | -0.03155    | 0.011905    | 0.054877    | 0.063645    | 0.018349    | 0.017065    | -0.00432    |
| 10/20/2014  | 0.002721    | -0.01081    | 0.035392    | 0.025318    | -0.00296    | -0.02457    | -0.04665    | 0.0033      | 0.043053    | -0.0087     |
| 10/21/2014  | 0           | -0.0146     | -0.00105    | 0.003743    | 0.008863    | 0.004963    | -0.017      | -0.00827    | -0.02794    | -0.00877    |
| 10/22/2014  | 0.00542     | -0.00368    | 0.009449    | 0.048612    | -0.00886    | 0.034067    | 0.016998    | -0.0117     | 0.05984     | 0.008772    |

| <b>Date</b> | <b>INCO</b> | <b>INDF</b> | <b>INTP</b> | <b>ITMG</b> | <b>KLBF</b> | <b>LPKR</b> | <b>LSIP</b> | <b>MNCN</b> | <b>MPPA</b> | <b>PGAS</b> |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 10/23/2014  | -0.00135    | -0.0037     | -0.00734    | 0.019965    | 0.008863    | 0.004773    | 0.013947    | -0.01866    | -0.01423    | 0.013015    |
| 10/24/2014  | 0.001352    | -0.01493    | 0.005249    | 0.006953    | 0           | 0.004751    | 0.021919    | -0.03662    | -0.00799    | 0           |
| 10/27/2014  | -0.01772    | -0.02667    | 0           | 0.002307    | -0.02381    | -0.00952    | -0.0109     | -0.01431    | 0.042426    | 0.004301    |
| 10/28/2014  | -0.02366    | -0.01165    | -0.01159    | -0.02331    | 0.011976    | -0.0048     | -0.01102    | 0.008969    | 0.013751    | 0.004283    |
| 10/29/2014  | 0.01676     | 0.026977    | 0.017848    | 0.0302      | 0.014771    | 0.019048    | 0.040711    | 0.007117    | -0.01992    | 0.012739    |
| 10/30/2014  | 0.017845    | 0.003795    | -0.01997    | -0.04445    | 0.002928    | 0.00939     | 0.039118    | -0.00712    | -0.00933    | -0.00847    |
| 10/31/2014  | 0.030813    | 0.033523    | 0.018928    | 0.013072    | -0.00293    | 0           | -0.00513    | 0           | -0.01734    | 0.012685    |
| 11/3/2014   | -0.03081    | 0.003656    | -0.00104    | -0.04962    | -0.0118     | 0.004662    | 0.025382    | -0.00179    | 0.004758    | 0           |
| 11/4/2014   | 0.004073    | -0.01842    | -0.01682    | -0.02005    | 0.0118      | 0           | -0.0177     | -0.00538    | -0.02727    | -0.01269    |
| 11/5/2014   | 0.002706    | -0.01498    | 0.007396    | 0.006309    | -0.01477    | -0.0331     | -0.02323    | -0.01449    | 0.001625    | 0.008475    |
| 11/6/2014   | 0.035837    | -0.01905    | -0.00846    | -0.00758    | 0.002972    | -0.00966    | 0.01297     | -0.02775    | 0.031952    | -0.00423    |
| 11/7/2014   | -0.00654    | -0.00772    | -0.02908    | 0.008833    | -0.01796    | -0.02457    | -0.02611    | -0.03048    | 0.010946    | 0           |
| 11/10/2014  | -0.02122    | -0.00388    | -0.01542    | -0.0101     | -0.00303    | 0.014815    | -0.00265    | -0.00777    | -0.02679    | -0.01279    |
| 11/11/2014  | 0.005348    | 0.015444    | 0.028448    | 0.018857    | 0.023953    | 0.009756    | 0.023592    | -0.04996    | -0.01448    | 0.0296      |
| 11/12/2014  | 0.007968    | 0.003824    | 0.01073     | -0.03291    | -0.00296    | 0.004843    | 0.005168    | -0.03758    | -0.02794    | 0           |
| 11/13/2014  | 0.020943    | 0.00381     | 0.02112     | -0.06514    | 0           | -0.00484    | 0.002574    | 0.025211    | 0.03279     | 0           |
| 11/14/2014  | -0.00259    | 0           | 0.011429    | -0.03069    | 0.005917    | 0           | -0.02604    | -0.04022    | -0.01954    | 0.008299    |
| 11/17/2014  | 0.00905     | 0.015095    | 0.001033    | 0.038894    | 0.017544    | 0           | 0.002635    | -0.01743    | 0.024372    | 0.004124    |
| 11/18/2014  | 0.007692    | -0.00375    | 0.011288    | 0.004079    | 0.008658    | 0.02871     | 0.007864    | 0.043017    | -0.01455    | 0.01227     |
| 11/19/2014  | 0.003824    | 0           | -0.00102    | -0.00408    | 0.022728    | 0.004706    | 0.007802    | 0           | 0.035204    | 0.004057    |
| 11/20/2014  | 0.020152    | 0           | -0.00924    | -0.01372    | -0.0113     | 0.009346    | 0.025577    | -0.01913    | -0.02226    | 0           |
| 11/21/2014  | 0.017306    | 0.014926    | 0.006167    | 0.00138     | -0.0057     | 0.049897    | 0.027399    | 0.012793    | 0.037859    | -0.00406    |
| 11/24/2014  | 0.017011    | 0.00738     | 0.008163    | 0.019126    | 0.016998    | 0           | 0           | 0.04353     | 0.013836    | -0.00407    |
| 11/25/2014  | -0.01824    | -0.00368    | 0.006079    | 0.001352    | -0.00563    | 0.008811    | -0.02236    | 0.018091    | 0.016654    | -0.01232    |
| 11/26/2014  | -0.01983    | -0.01487    | 0.006042    | 0.010753    | -0.00851    | 0.008734    | 0.005013    | -0.01202    | -0.01361    | 0.004124    |
| 11/27/2014  | 0.012438    | 0.007463    | 0.001004    | 0.015915    | -0.00858    | 0.008658    | 0.012423    | 0           | -0.02622    | -0.01242    |

| <b>Date</b> | <b>INCO</b> | <b>INDF</b> | <b>INTP</b> | <b>ITMG</b> | <b>KLBF</b> | <b>LPKR</b> | <b>LSIP</b> | <b>MNCN</b> | <b>MPPA</b> | <b>PGAS</b> |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 11/28/2014  | -0.01494    | -0.00372    | -0.01008    | 0.001315    | 0.005731    | 0.004301    | -0.01995    | -0.03071    | 0.020109    | -0.00837    |
| 12/1/2014   | -0.0436     | -0.01126    | 0.029942    | -0.0334     | 0.008535    | -0.00862    | -0.03852    | 0.018538    | 0.00153     | 0           |
| 12/2/2014   | 0.022036    | 0.007519    | 0.009785    | -0.01506    | 0.016854    | 0.017168    | 0           | 0           | 0.031605    | 0.016667    |
| 12/3/2014   | 0.00639     | -0.0113     | -0.01867    | -0.0097     | 0.019311    | -0.02586    | 0.010417    | -0.01646    | 0.029199    | -0.0083     |
| 12/4/2014   | 0.033817    | 0.003781    | -0.00298    | 0.020676    | -0.01653    | 0.025864    | 0.038124    | 0.004141    | -0.00722    | -0.00418    |
| 12/5/2014   | 0.018304    | 0.007519    | 0.002981    | -0.01789    | -0.01117    | 0           | 0.009926    | -0.04436    | 0           | 0.004175    |
| 12/8/2014   | -0.03821    | -0.00752    | -0.00398    | -0.00139    | -0.03139    | -0.01717    | -0.025      | -0.02848    | 0           | -0.00418    |
| 12/9/2014   | 0.003762    | 0.003766    | -0.00399    | -0.01542    | 0           | -0.03974    | -0.01018    | -0.02247    | 0.036989    | -0.02114    |
| 12/10/2014  | -0.02921    | -0.00755    | 0.007968    | -0.05816    | 0.025752    | 0.017858    | 0           | 0.029117    | 0.001396    | 0.021142    |
| 12/11/2014  | 0           | -0.01143    | 0           | -0.03659    | 0           | -0.00889    | 0.010178    | 0.021835    | 0.001394    | 0           |
| 12/12/2014  | -0.00646    | 0.003824    | -0.00497    | 0.012346    | 0.002821    | -0.01802    | -0.01531    | 0.025588    | 0.002782    | 0.004175    |
| 12/15/2014  | 0.02181     | 0.00381     | -0.02729    | -0.01858    | 0.013986    | -0.02765    | -0.01816    | 0.01877     | -0.02817    | -0.01258    |
| 12/16/2014  | -0.02832    | -0.00763    | -0.0472     | -0.04474    | -0.0339     | -0.05277    | -0.02653    | -0.03576    | -0.0528     | -0.01274    |
| 12/17/2014  | 0.007802    | -0.01934    | -0.00215    | -0.00327    | -0.00866    | -0.0199     | 0.013351    | 0.050115    | -0.02439    | -0.00858    |
| 12/18/2014  | -0.02359    | 0.007782    | 0.01919     | 0.003273    | 0.028573    | 0.034571    | 0.020998    | 0.010132    | -0.01399    | 0.008584    |
| 12/19/2014  | -0.02145    | 0.015385    | 0.032211    | 0.025808    | 0.013986    | -0.00487    | 0           | 0.01003     | -0.01418    | -0.00428    |
| 12/22/2014  | -0.00816    | 0           | 0.012195    | -0.00319    | 0.013793    | -0.03474    | -0.01307    | 0.001994    | 0.006329    | 0.004283    |
| 12/23/2014  | 0.00409     | 0.011385    | 0           | -0.0048     | -0.00274    | 0           | -0.00264    | 0.00199     | -0.0175     | 0.012739    |
| 12/24/2014  | -0.02201    | -0.00378    | 0.002018    | 0.001604    | 0.005479    | 0           | -0.01061    | 0.011858    | -0.01292    | 0.012579    |
| 12/25/2014  | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           |
| 12/26/2014  | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           |
| 12/29/2014  | -0.01119    | 0.003781    | -0.00404    | -0.00966    | 0           | 0.029853    | 0.018495    | 0           | 0           | -0.00418    |
| 12/30/2014  | 0.019499    | 0.018692    | 0.012073    | -0.00487    | 0           | 0           | -0.01053    | -0.00197    | -0.00816    | 0.004175    |
| 12/31/2014  | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           |
| 1/1/2015    | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           |
| 1/2/2015    | -0.0097     | 0.098672    | -0.00803    | 0.033576    | -0.01099    | 0.009756    | 0.007905    | 0.015625    | 0.016261    | -0.00418    |

| <b>Date</b> | <b>INCO</b> | <b>INDF</b> | <b>INTP</b> | <b>ITMG</b> | <b>KLBF</b> | <b>LPKR</b> | <b>LSIP</b> | <b>MNCN</b> | <b>MPPA</b> | <b>PGAS</b> |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 1/5/2015    | -0.01403    | 0.00335     | -0.00101    | -0.02548    | 0           | -0.00487    | 0.013038    | -0.02353    | -0.01462    | -0.01263    |
| 1/6/2015    | -0.00567    | -0.01347    | -0.02245    | -0.06153    | 0           | -0.02469    | -0.01567    | 0.025467    | -0.00657    | -0.01709    |
| 1/7/2015    | 0.005666    | -0.01365    | 0.016377    | -0.00861    | 0.008253    | 0.014889    | 0.007864    | 0.021053    | -0.02333    | 0           |
| 1/8/2015    | -0.00141    | -0.00344    | -0.00102    | 0.001729    | -0.01102    | 0.009804    | 0.05338     | 0.001892    | -0.03257    | 0           |
| 1/9/2015    | 0.018221    | 0.020479    | -0.01743    | 0.058692    | -0.00834    | 0.019324    | 0           | -0.00569    | 0.013841    | 0           |
| 1/12/2015   | -0.00418    | 0.003373    | 0.001034    | -0.04838    | -0.0028     | -0.0048     | -0.00745    | 0.016966    | 0.030459    | 0           |
| 1/13/2015   | -0.01546    | 0           | 0.018424    | -0.00342    | 0.013908    | -0.01942    | 0.004975    | 0.080761    | 0.026317    | -0.03064    |
| 1/14/2015   | -0.0449     | 0           | -0.01122    | 0.027074    | -0.01391    | -0.01482    | -0.03793    | -0.04767    | -0.02299    | -0.03161    |
| 1/15/2015   | -0.01493    | 0.003361    | 0.0193      | 0.013267    | -0.00281    | 0.024571    | 0.015346    | 0           | -0.01844    | 0.009132    |
| 1/16/2015   | -0.00603    | -0.02034    | -0.10827    | -0.01829    | 0.002805    | -0.01467    | -0.02832    | -0.03122    | -0.01707    | -0.00456    |
| 1/19/2015   | 0.023917    | 0.003419    | -0.02153    | 0           | 0.002797    | 0           | -0.0105     | 0.001864    | 0.008569    | -0.05153    |
| 1/20/2015   | 0.030548    | 0.006803    | 0.02377     | 0.014988    | 0.005571    | 0.01467     | 0.010499    | 0.007421    | 0.006803    | 0.01432     |
| 1/21/2015   | -0.0188     | 0.006757    | -0.01012    | 0.0033      | 0.00554     | 0.009662    | -0.00524    | 0.060951    | 0.033336    | 0.014118    |
| 1/22/2015   | 0.023089    | 0.02658     | 0.030052    | 0.009836    | 0.016439    | 0.023754    | -0.01321    | 0.006932    | 0.075746    | 0.004662    |
| 1/23/2015   | 0.014165    | 0           | 0.008734    | -0.00984    | 0.021506    | 0.054808    | -0.00801    | 0.001726    | 0.035825    | 0           |
| 1/26/2015   | -0.00989    | -0.01987    | -0.00218    | -0.00993    | -0.01609    | -0.02703    | -0.02718    | -0.03509    | 0.005848    | -0.02353    |
| 1/27/2015   | 0.019691    | 0           | 0.002176    | 0.01977     | 0.002699    | 0           | 0.01368     | 0.021202    | 0.041405    | 0.004751    |
| 1/28/2015   | -0.00839    | -0.01008    | 0           | 0.004882    | 0.002692    | -0.00458    | 0.002714    | -0.00175    | -0.0042     | -0.00952    |
| 1/29/2015   | -0.01843    | -0.00338    | -0.00545    | 0.016103    | -0.0081     | 0.044851    | -0.0109     | 0.00175     | 0.011173    | -0.02913    |
| 1/30/2015   | -0.01296    | 0.023452    | 0.00545     | 0.067927    | 0.010782    | -0.0044     | 0.008186    | 0           | 0.054067    | -0.00494    |
| 2/2/2015    | -0.0146     | 0.006601    | -0.00436    | -0.01807    | -0.01622    | -0.03132    | -0.01368    | -0.00526    | -0.05685    | 0           |
| 2/3/2015    | -0.01035    | -0.01993    | 0.010858    | 0.012085    | -0.00546    | 0.013544    | -0.01667    | 0.029439    | 0.048923    | 0.02927     |
| 2/4/2015    | 0.005926    | 0.006689    | 0.006459    | 0           | 0.005464    | -0.00449    | 0           | 0.031909    | 0           | 0.0331      |
| 2/5/2015    | 0.004422    | -0.02703    | -0.00322    | -0.01971    | -0.00546    | -0.00451    | 0.043843    | -0.00165    | 0.02876     | -0.02353    |
| 2/6/2015    | 0.040351    | 0.027029    | 0.009641    | 0.016705    | 0.005464    | 0.009009    | 0.044568    | 0.009885    | -0.02083    | 0           |
| 2/9/2015    | 0.011236    | -0.00334    | 0.022141    | -0.00908    | 0           | 0.004474    | -0.02598    | 0.004906    | 0.023408    | 0.004751    |

| Date      | INCO     | INDF     | INTP     | ITMG     | KLBF     | LPKR     | LSIP     | MNCN     | MPPA     | PGAS     |
|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 2/10/2015 | -0.00842 | -0.01686 | -0.00313 | 0.021053 | 0.002721 | -0.00897 | -0.00793 | -0.01148 | 0.01023  | -0.00475 |
| 2/11/2015 | 0.012596 | 0        | -0.00419 | 0.0177   | 0.008119 | 0        | 0.005291 | 0.003295 | 0        | 0.009479 |
| 2/12/2015 | 0.004164 | 0        | -0.01695 | 0.017392 | -0.0027  | -0.00451 | 0.002635 | 0.003284 | -0.02187 | 0        |
| 2/13/2015 | 0.002766 | 0.00678  | 0        | 0.010007 | 0.010753 | 0.009009 | 0.005249 | 0.001638 | 0.050708 | 0        |
| 2/16/2015 | -0.02943 | -0.01019 | 0.001068 | 0.005674 | -0.03815 | 0        | -0.00525 | 0.009772 | 0.037603 | 0        |
| 2/17/2015 | -0.01145 | 0.010187 | 0.015882 | 0.041557 | 0.00554  | 0        | 0        | -0.01469 | 0.02353  | 0.014052 |
| 2/18/2015 | 0.001438 | 0.003373 | -0.00421 | 0        | -0.00277 | 0.048149 | -0.00264 | 0.004922 | 0.027525 | 0        |
| 2/19/2015 | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 2/20/2015 | -0.01302 | -0.01015 | -0.00211 | -0.01229 | -0.00834 | -0.00428 | -0.01061 | 0.006525 | 0.011249 | 0        |
| 2/23/2015 | -0.01466 | 0        | 0.012605 | -0.02504 | 0.002789 | -0.01732 | -0.02703 | -0.00489 | 0        | 0.009259 |
| 2/24/2015 | -0.01039 | 0        | 0        | -0.06098 | 0.01108  | 0.008696 | -0.01102 | 0.006515 | -0.01578 | 0.009174 |
| 2/25/2015 | 0.002981 | 0.010152 | 0.00728  | 0        | 0.002751 | 0.008621 | 0.005525 | 0.0113   | -0.02183 | -0.01843 |
| 2/26/2015 | 0.007413 | 0        | -0.00311 | -0.0045  | -0.00275 | 0.004283 | 0.010959 | 0.001604 | -0.02947 | -0.01405 |
| 2/27/2015 | 0.040527 | -0.00337 | 0        | 0.016406 | -0.00552 | 0.008511 | 0.024227 | 0.009569 | 0        | -0.01905 |
| 3/2/2015  | 0.002833 | 0.003373 | -0.00208 | 0.036315 | 0.013755 | -0.00425 | 0.018446 | 0        | 0.029466 | 0.019048 |
| 3/3/2015  | -0.03161 | 0        | 0.004158 | -0.00143 | -0.00274 | -0.00426 | 0.002608 | -0.01439 | 0.030877 | 0.00939  |
| 3/4/2015  | -0.01027 | 0.003361 | -0.00416 | -0.02899 | 0.005464 | -0.0216  | -0.01311 | -0.00646 | -0.04964 | -0.01887 |
| 3/5/2015  | 0.007348 | 0        | -0.00418 | -0.0059  | -0.01648 | 0        | 0.007884 | -0.02295 | -0.03861 | 0.004751 |
| 3/6/2015  | 0.010197 | 0.00335  | 0.016598 | 0.011765 | 0.021919 | 0.013015 | -0.01849 | 0.01318  | 0.011009 | 0.014118 |
| 3/9/2015  | -0.00727 | -0.01347 | -0.01242 | -0.0177  | -0.01639 | -0.04406 | 0.007968 | -0.01817 | -0.02339 | 0        |
| 3/10/2015 | -0.01323 | 0.013468 | -0.00837 | -0.00298 | -0.0083  | 0        | -0.00797 | -0.02703 | 0.01606  | -0.02364 |
| 3/11/2015 | -0.0134  | -0.01686 | -0.03419 | -0.02264 | -0.00837 | -0.00451 | -0.01613 | 0.001711 | 0.017011 | -0.0048  |
| 3/12/2015 | -0.01359 | -0.00341 | -0.02198 | 0.034512 | 0.002797 | 0        | 0        | 0        | 0.011976 | 0        |
| 3/13/2015 | 0.001519 | 0        | -0.01342 | 0.020439 | 0.005571 | -0.00909 | -0.00271 | -0.01031 | 0.030483 | 0        |
| 3/16/2015 | 0.021022 | 0.003407 | -0.00113 | -0.02933 | -0.00557 | -0.00917 | 0.04256  | -0.01042 | 0.02396  | 0.004796 |
| 3/17/2015 | -0.00596 | -0.00341 | 0.013438 | -0.01499 | 0.002789 | 0.040638 | -0.01047 | -0.01053 | -0.00113 | -0.0048  |



| Date      | INCO     | INDF     | INTP     | ITMG     | KLBF     | LPKR     | LSIP     | MNCN     | MPPA     | PGAS     |
|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 3/18/2015 | -0.00901 | 0.010187 | -0.00894 | 0.003017 | -0.00559 | 0.021883 | -0.02937 | -0.01242 | -0.00793 | -0.02927 |
| 3/19/2015 | 0.01497  | 0        | 0.002242 | 0.02528  | 0.022162 | 0.04652  | -0.00271 | 0.0177   | -0.03827 | 0.009852 |
| 3/20/2015 | 0.008876 | 0.003373 | -0.0307  | 0.036053 | -0.00825 | 0.032523 | -0.00272 | -0.00528 | -0.08766 | 0.009756 |
| 3/23/2015 | -0.00147 | -0.00337 | -0.00928 | -0.00568 | 0.008253 | -0.00803 | -0.02483 | -0.00708 | 0.032998 | -0.01467 |
| 3/24/2015 | -0.01486 | 0.010084 | 0.009281 | 0.005682 | 0.008186 | 0.023906 | -0.0056  | 0.005314 | 0.011173 | -0.03509 |
| 3/25/2015 | -0.01965 | -0.00671 | -0.03048 | -0.02003 | -0.0192  | 0        | -0.05782 | -0.00709 | 0.009828 | -0.05129 |
| 3/26/2015 | -0.00306 | -0.00676 | 0.00119  | -0.01017 | 0.016484 | 0.003929 | -0.01802 | -0.0234  | -0.02225 | -0.00107 |
| 3/27/2015 | 0.007628 | 0.006757 | 0.017679 | 0.001459 | 0.002721 | 0.007813 | 0.041549 | 0.00182  | 0.001249 | 0.014942 |
| 3/30/2015 | 0        | 0.006711 | 0.002334 | 0.023056 | 0.002714 | 0.015444 | 0.002903 | 0.019803 | 0.01487  | 0.017848 |
| 3/31/2015 | -0.01686 | -0.00335 | 0.021903 | -0.03774 | 0.010782 | 0.033902 | 0.002894 | 0.021165 | -0.02617 | -0.00104 |
| 4/1/2015  | 0.007698 | -0.01012 | 0        | -0.0149  | 0        | 0.01105  | -0.01163 | -0.00701 | 0.02617  | 0        |
| 4/2/2015  | -0.02957 | 0        | 0.01021  | 0.008969 | 0        | -0.00367 | -0.02068 | -0.01238 | 0.020695 | -0.00104 |
| 4/3/2015  | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 4/6/2015  | 0.014118 | 0        | 0.020112 | 0.004454 | -0.00268 | -0.01109 | 0.014815 | -0.00535 | 0.004808 | 0.007273 |
| 4/7/2015  | 0.007758 | 0.003384 | 0.015368 | 0.004435 | 0        | 0.02206  | 0.005865 | 0        | -0.00481 | 0.00722  |
| 4/8/2015  | -0.0031  | -0.00678 | 0        | -0.00889 | -0.0081  | -0.00364 | -0.00587 | -0.00538 | 0.004808 | -0.01763 |
| 4/9/2015  | -0.01405 | 0.003396 | 0.006515 | -0.03329 | -0.01364 | 0.003643 | -0.00886 | -0.0018  | -0.01693 | 0.004175 |
| 4/10/2015 | -0.00157 | 0        | -0.01088 | -0.0265  | 0.016349 | -0.01097 | -0.01495 | -0.00905 | -0.01722 | 0.005195 |
| 4/13/2015 | 0        | -0.0034  | -0.00219 | -0.05021 | -0.00271 | 0.014599 | -0.01212 | -0.05034 | -0.00872 | -0.00832 |
| 4/14/2015 | -0.032   | 0        | -0.0066  | -0.00333 | 0.002706 | 0.046026 | -0.04362 | -0.00575 | -0.03697 | -0.03943 |
| 4/15/2015 | -0.03812 | 0.00678  | 0.010977 | 0.029559 | 0        | 0.003454 | -0.01282 | -0.00772 | -0.02233 | -0.04218 |
| 4/16/2015 | 0.010084 | 0.006734 | 0        | -0.02126 | 0.010753 | 0.006873 | -0.03948 | 0        | 0.033946 | -0.016   |
| 4/17/2015 | 0        | -0.01351 | 0        | -0.00497 | -0.00536 | -0.09702 | 0.033006 | -0.00194 | -0.02338 | 0.048351 |
| 4/20/2015 | -0.03922 | 0.013514 | -0.00987 | -0.005   | 0.008032 | 0.029742 | -0.01967 | -0.04366 | -0.01057 | -0.01549 |
| 4/21/2015 | 0        | -0.00336 | 0.032541 | 0.011618 | 0.007968 | 0.018149 | 0.061014 | 0.014099 | 0.009253 | 0.046824 |
| 4/22/2015 | -0.04082 | -0.00337 | 0        | 0.016367 | 0.005277 | -0.03291 | -0.04786 | -0.02429 | -0.01325 | -0.00533 |

## c. 10 saham ketiga

| Date      | PTBA     | PTPP     | SILO     | SMGR     | SMRA     | SSMS     | TLKM     | UNTR     | UNVR     | WIKA     |
|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 1/1/2014  |          |          |          |          |          |          |          |          |          |          |
| 1/2/2014  | 0.019418 | 0.025533 | 0        | 0.024434 | 0.05001  | 0.070618 | 0.011561 | 0.018253 | 0.030305 | 0.049393 |
| 1/3/2014  | -0.03922 | -0.01695 | 0        | -0.0104  | 0        | 0        | -0.02326 | 0.010283 | -0.01126 | 0        |
| 1/6/2014  | -0.07257 | -0.02598 | 0        | -0.00349 | -0.04362 | -0.0057  | -0.019   | -0.00384 | 0.00939  | -0.02131 |
| 1/7/2014  | -0.019   | -0.01325 | 0        | -0.00175 | -0.02581 | 0.005698 | -0.00722 | 0.014022 | -0.02078 | -0.02808 |
| 1/8/2014  | 0.027029 | 0.017622 | -0.00264 | -0.01056 | 0.050966 | 0.022473 | 0.014389 | -0.01531 | 0        | 0.040316 |
| 1/9/2014  | -0.01884 | 0.004357 | 0.002635 | -0.00177 | 0.054394 | -0.01117 | -0.00717 | -0.03399 | -0.00478 | 0.006061 |
| 1/10/2014 | -0.00272 | 0.063179 | 0        | 0.055186 | 0.057158 | 0.033152 | 0.028371 | 0.010582 | -0.00673 | 0.072812 |
| 1/13/2014 | -0.00273 | 0.070896 | 0        | 0.04109  | 0.059317 | -0.07914 | 0.034368 | 0        | 0.042519 | 0.086075 |
| 1/14/2014 | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 1/15/2014 | 0.01087  | -0.01147 | 0        | 0.009615 | -0.00525 | 0.011696 | -0.00678 | -0.00925 | 0.036335 | 0        |
| 1/16/2014 | -0.01087 | 0.015267 | -0.00264 | -0.03077 | -0.04853 | 0.017291 | 0.011274 | 0.009253 | -0.00806 | -0.00517 |
| 1/17/2014 | 0.034903 | 0.015038 | -0.00264 | 0        | -0.00554 | 0.0226   | -0.00224 | 0.015666 | -0.00541 | 0.01287  |
| 1/20/2014 | 0.015707 | 0.003724 | 0        | -0.00826 | 0.027399 | -0.02833 | 0.011173 | 0.010309 | 0.014363 | -0.01028 |
| 1/21/2014 | 0.007762 | -0.00372 | 0        | -0.00666 | 0.031918 | -0.03509 | 0.00222  | 0.015267 | 0.003559 | -0.01563 |
| 1/22/2014 | 0.025447 | -0.02647 | 0.015748 | -0.02024 | -0.01053 | -0.01802 | -0.01115 | 0.056457 | 0.012357 | -0.032   |
| 1/23/2014 | -0.02031 | 0.003824 | 0        | 0.015216 | 0.005277 | -0.0122  | -0.00224 | 0        | 0.002628 | 0.037238 |
| 1/24/2014 | -0.0155  | -0.01152 | 0        | -0.02377 | -0.01058 | -0.00615 | -0.00676 | -0.06152 | -0.01765 | 0.002608 |
| 1/27/2014 | -0.03175 | -0.0274  | 0        | -0.04032 | -0.03794 | 0        | -0.02752 | -0.05477 | -0.03442 | -0.04528 |
| 1/28/2014 | 0        | 0.019647 | 0        | 0.001787 | -0.00554 | 0.042302 | 0        | 0.002677 | 0.020977 | 0.013532 |
| 1/29/2014 | 0.016    | 0.023078 | -0.00261 | 0.028171 | 0.021979 | -0.00593 | 0.036534 | 0.03675  | 0.028472 | 0.036944 |
| 1/30/2014 | -0.02139 | 0.026268 | 0.005208 | -0.01399 | 0.037338 | 0        | 0.019978 | -0.00517 | 0.001753 | 0.010309 |
| 1/31/2014 | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 2/3/2014  | 0        | 0.00738  | 0.002594 | -0.01418 | 0        | 0.005935 | -0.02447 | -0.01698 | -0.00527 | 0.012739 |

| Date      | PTBA     | PTPP     | SILO     | SMGR     | SMRA     | SSMS     | TLKM     | UNTR     | UNVR     | WIKA     |
|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 2/4/2014  | -0.01361 | -0.00738 | 0        | -0.00897 | -0.03734 | -0.02395 | -0.01133 | -0.03622 | -0.01956 | -0.01018 |
| 2/5/2014  | 0.016305 | 0.021979 | 0.005168 | 0.038874 | -0.01093 | 0        | 0.018059 | -0.01792 | 0.009826 | 0.032707 |
| 2/6/2014  | 0.039635 | 0.00722  | 0.005141 | 0.008628 | 0.016349 | 0.041549 | 0.030839 | -0.00418 | 0.002663 | 0.007398 |
| 2/7/2014  | -0.00259 | 0        | 0.005115 | 0.02712  | 0.021391 | 0.017291 | -0.00435 | 0.016621 | 0.000886 | -0.00246 |
| 2/10/2014 | -0.0026  | -0.0292  | 0.002548 | 0.008326 | 0.036368 | 0.033711 | 0        | -0.01244 | -0.00444 | -0.0199  |
| 2/11/2014 | 0.005195 | -0.00371 | -0.00255 | 0.001657 | 0.020203 | -0.00554 | -0.00875 | 0.026082 | -0.01795 | -0.00252 |
| 2/12/2014 | -0.00519 | 0.007407 | 0.010152 | 0        | -0.00501 | 0.00554  | 0.006572 | 0.002706 | 0.014389 | 0        |
| 2/13/2014 | -0.02639 | 0.007353 | 0.005038 | 0        | -0.02545 | -0.00554 | -0.01098 | 0.006734 | 0.004454 | 0        |
| 2/14/2014 | -0.00805 | 0.025318 | 0.005013 | -0.01669 | 0.005141 | 0.03279  | -0.00664 | -0.0176  | 0.00885  | 0.019951 |
| 2/17/2014 | -0.0027  | 0.035091 | 0.04879  | 0.024939 | 0.05001  | 0        | 0.01105  | 0.009517 | 0        | 0.031594 |
| 2/18/2014 | 0.005391 | -0.01389 | 0        | -0.01489 | 0.019324 | 0.010695 | 0.013101 | 0.002703 | -0.01063 | -0.00962 |
| 2/19/2014 | 0.005362 | -0.02837 | 0        | 0        | -0.04402 | 0.005305 | 0.010788 | 0.002695 | 0.01151  | -0.0369  |
| 2/20/2014 | -0.00536 | -0.01449 | 0        | 0.006645 | -0.01511 | 0.010526 | 0.012793 | 0.00403  | -0.00353 | -0.02796 |
| 2/21/2014 | 0.002685 | 0.025227 | 0        | -0.00166 | 0.059131 | -0.00525 | 0.016807 | -0.00268 | 0.003527 | 0.027956 |
| 2/24/2014 | -0.01078 | 0        | 0        | -0.01168 | 0.014252 | 0        | -0.01047 | -0.00404 | -0.00088 | 0.005    |
| 2/25/2014 | -0.00816 | 0        | 0        | -0.01692 | -0.01425 | 0.005249 | -0.03645 | -0.0027  | 0.000881 | 0.034317 |
| 2/26/2014 | 0.00545  | -0.01434 | -0.00238 | -0.01895 | -0.02421 | 0        | -0.00219 | -0.00815 | -0.01329 | 0.002407 |
| 2/27/2014 | 0.016173 | 0.028472 | 0.002384 | 0.005204 | -0.0198  | 0.015585 | 0        | 0.012204 | 0        | 0.030772 |
| 2/28/2014 | 0.023779 | -0.01413 | 0        | 0.037356 | 0.004988 | 0.025447 | 0.017354 | 0.022653 | 0.019435 | 0        |
| 3/3/2014  | -0.02378 | 0.01062  | -0.00238 | -0.0202  | -0.01504 | 0        | -0.01081 | -0.00661 | -0.01055 | 0.004651 |
| 3/4/2014  | 0.018544 | 0.061453 | 0.002384 | 0        | 0.058841 | -0.0101  | 0        | 0.010554 | -0.00888 | 0.036451 |
| 3/5/2014  | 0        | 0.016421 | 0.018868 | 0.011834 | 0        | 0.010101 | 0.008658 | 0.018206 | 0.003562 | 0.019934 |
| 3/6/2014  | 0        | 0.019355 | 0.025376 | 0.015013 | 0.02353  | 0        | -0.00432 | 0.030459 | 0.006203 | 0        |
| 3/7/2014  | -0.01055 | 0.006369 | 0.01582  | 0.013158 | -0.00935 | 0.024815 | -0.00651 | -0.03046 | -0.0062  | -0.01993 |
| 3/10/2014 | 0.010554 | 0.009479 | 0        | 0        | 0.004684 | -0.01482 | -0.04912 | -0.00258 | 0.004435 | 0.008909 |
| 3/11/2014 | 0.002621 | 0.034006 | 0        | 0.009756 | 0.027652 | 0.034233 | -0.00229 | 0.024251 | 0.007933 | 0.011025 |

| Date      | PTBA     | PTPP     | SILO     | SMGR     | SMRA     | SSMS     | TLKM     | UNTR     | UNVR     | WIKA     |
|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 3/12/2014 | -0.02922 | 0        | 0.011148 | -0.02126 | -0.00913 | -0.00482 | -0.0069  | -0.01653 | 0.018269 | -0.01993 |
| 3/13/2014 | 0.010724 | 0.012085 | -0.08078 | -0.00165 | -0.00922 | -0.00484 | 0.011481 | 0.015267 | 0.043852 | 0.019934 |
| 3/14/2014 | -0.01342 | 0.091755 | -0.00966 | 0.057894 | 0.036368 | 0.033416 | 0.040274 | 0.021238 | 0.018799 | 0.088107 |
| 3/17/2014 | 0.002699 | -0.00825 | 0.009662 | 0.030772 | 0.026433 | 0.018605 | -0.01325 | 0        | -0.03796 | -0.01009 |
| 3/18/2014 | 0        | -0.01391 | 0        | -0.0261  | -0.04901 | -0.01861 | -0.01794 | 0        | -0.02556 | -0.02257 |
| 3/19/2014 | 0.010724 | -0.00562 | -0.00241 | -0.00468 | 0.027029 | 0.004684 | 0.022372 | 0.018372 | -0.00259 | 0        |
| 3/20/2014 | -0.02429 | -0.02279 | -0.00726 | -0.04474 | -0.07377 | -0.01412 | -0.03146 | -0.04214 | -0.02718 | -0.03161 |
| 3/21/2014 | 0.021622 | 0.031208 | 0.004843 | 0.006515 | 0.004773 | -0.00952 | -0.01379 | 0.007566 | 0        | 0.01065  |
| 3/24/2014 | -0.00805 | 0        | 0.004819 | 0.022473 | 0.037388 | 0.009524 | 0.031893 | 0.024815 | 0.006203 | 0.010538 |
| 3/25/2014 | -0.00812 | 0        | -0.00482 | 0        | -0.01852 | -0.00952 | -0.0181  | 0.017011 | -0.00177 | -0.01054 |
| 3/26/2014 | 0        | 0.011111 | 0        | -0.00318 | 0        | -0.00962 | 0.009091 | -0.03183 | 0.016674 | 0.018888 |
| 3/27/2014 | 0.016173 | 0.008253 | 0        | 0        | -0.00939 | 0        | -0.01596 | 0        | -0.00087 | -0.00417 |
| 3/28/2014 | -0.00268 | 0.002736 | -0.00484 | 0.006349 | 0.004706 | 0        | 0.018224 | 0.031826 | 0.018982 | -0.00209 |
| 3/31/2014 | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 4/1/2014  | 0.013316 | 0.026956 | 0.004843 | 0.04335  | 0.054808 | 0.019139 | 0.017898 | 0.011976 | 0.025318 | 0.018653 |
| 4/2/2014  | 0        | 0.018446 | 0.012005 | 0.006042 | -0.02703 | 0        | -0.00222 | -0.00238 | -0.0025  | 0.024342 |
| 4/3/2014  | -0.00265 | -0.00261 | 0.009501 | 0.023811 | 0.031463 | 0.02342  | 0.004435 | -0.00119 | 0.002503 | 0.002002 |
| 4/4/2014  | -0.01067 | -0.00262 | -0.01669 | -0.02231 | 0.004415 | 0.009217 | 0.006615 | -0.04772 | -0.0202  | -0.002   |
| 4/7/2014  | 0.008011 | 0.002621 | 0        | 0.013443 | -0.00442 | 0.004577 | 0.019587 | 0.036905 | 0.018535 | 0.007984 |
| 4/8/2014  | 0        | -0.00262 | 0.009569 | -0.00297 | -0.01336 | 0.004556 | 0.004301 | 0.009615 | -0.00922 | -0.03027 |
| 4/9/2014  | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 4/10/2014 | -0.00801 | -0.1168  | -0.02899 | -0.06931 | -0.08905 | -0.00913 | -0.0305  | -0.01932 | -0.00422 | -0.13588 |
| 4/11/2014 | 0.039427 | -0.01187 | 0.024214 | -0.02258 | 0.009756 | 0.004577 | 0.024045 | 0.02052  | 0.032462 | -0.00471 |
| 4/14/2014 | 0.005141 | 0.057987 | 0.004773 | 0.038405 | 0.0381   | 0.004556 | 0.010741 | 0.013057 | 0.007344 | 0.066159 |
| 4/15/2014 | -0.01811 | 0.01676  | -0.00238 | 0        | 0.04567  | 0.004535 | -0.01724 | 0.014052 | -0.00244 | 0        |
| 4/16/2014 | 0.005208 | 0        | 0.002384 | 0.001569 | -0.01348 | 0.022372 | 0.008658 | -0.0117  | -0.01892 | -0.0111  |

| Date      | PTBA     | PTPP     | SILO     | SMGR     | SMRA     | SSMS     | TLKM     | UNTR     | UNVR     | WIKA     |
|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 4/17/2014 | 0.007762 | -0.00277 | 0.021202 | -0.00787 | -0.00454 | 0.013187 | 0.002153 | 0.016336 | 0.02299  | -0.00447 |
| 4/18/2014 | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 4/21/2014 | 0.002574 | -0.00557 | -0.00233 | -0.00316 | -0.01373 | 0        | -0.00431 | 0        | -0.00325 | -0.0181  |
| 4/22/2014 | 0.022873 | 0        | 0        | -0.00477 | 0.004598 | 0        | 0.008602 | 0.013793 | 0.004063 | -0.00229 |
| 4/23/2014 | 0.024815 | -0.0028  | 0        | 0        | 0        | 0        | 0.002139 | 0.004556 | -0.02796 | -0.01151 |
| 4/24/2014 | -0.01233 | 0.013908 | 0.011615 | -0.01121 | 0.03604  | 0        | 0.00639  | -0.00228 | -0.02278 | 0.027399 |
| 4/25/2014 | 0.007417 | 0.024558 | 0.002307 | 0.011209 | -0.01336 | 0.004357 | 0.004237 | -0.00915 | -0.00943 | 0.048361 |
| 4/28/2014 | 0.00246  | -0.03847 | -0.00231 | -0.01767 | -0.02727 | 0.021506 | -0.01491 | -0.03509 | -0.01563 | -0.01732 |
| 4/29/2014 | -0.03755 | 0.024898 | 0.006905 | -0.02961 | 0.004598 | 0.021053 | -0.02609 | 0.041964 | 0.014764 | 0.002181 |
| 4/30/2014 | 0.007624 | 0.008163 | 0.009132 | -0.00838 | 0.018182 | 0        | -0.00221 | -0.00917 | 0.008584 | -0.01316 |
| 5/1/2014  | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 5/2/2014  | -0.00762 | 0.005405 | 0.087011 | -0.01698 | -0.00451 | 0.03279  | 0.015334 | 0.02278  | -0.00171 | 0        |
| 5/5/2014  | -0.01284 | 0.008054 | 0        | 0.005124 | -0.00909 | 0.035647 | 0.010811 | -0.00451 | 0.01782  | -0.00442 |
| 5/6/2014  | 0.005155 | -0.01075 | 0        | -0.01027 | 0        | -0.0039  | 0.002148 | 0.00226  | -0.01184 | -0.00891 |
| 5/7/2014  | 0        | 0.026668 | 0        | -0.01736 | 0.0181   | 0.011651 | 0.008547 | 0.005627 | 0.028525 | 0.022125 |
| 5/8/2014  | 0.002567 | 0.007864 | 0        | 0.029338 | 0.05666  | 0.019121 | -0.00213 | -0.00225 | 0.005773 | 0.023785 |
| 5/9/2014  | -0.00257 | 0        | 0.002081 | 0.00678  | 0.057629 | -0.01527 | 0.00213  | 0.003369 | 0.011447 | 0.004264 |
| 5/12/2014 | 0.042774 | -0.00261 | 0        | 0.052644 | 0.019803 | -0.00385 | 0        | 0.003358 | -0.00571 | -0.00426 |
| 5/13/2014 | 0.021925 | 0.002614 | 0.004149 | 0        | -0.0198  | -0.01556 | 0.004246 | 0.001117 | -0.01234 | 0.002134 |
| 5/14/2014 | 0.019094 | 0.020673 | 0.014389 | 0.022188 | 0.015873 | 0.003914 | 0.016807 | 0.00223  | 0.019673 | 0.023183 |
| 5/15/2014 | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 5/16/2014 | 0.023366 | -0.01287 | 0.010152 | 0        | -0.00394 | 0.003899 | 0.054725 | -0.02025 | 0        | 0.004158 |
| 5/19/2014 | 0.009195 | -0.04775 | 0.051192 | -0.04324 | -0.00396 | -0.02362 | 0.017596 | -0.00799 | -0.00979 | -0.02948 |
| 5/20/2014 | -0.0373  | -0.0192  | 0.001918 | -0.02822 | -0.016   | -0.01606 | -0.0599  | -0.03023 | -0.02995 | 0        |
| 5/21/2014 | 0.041867 | 0.0327   | 0        | 0.008382 | 0.016    | 0.008065 | 0.020367 | 0.012903 | 0.013423 | 0.008511 |
| 5/22/2014 | 0.037993 | 0.021221 | -0.04306 | -0.00167 | 0.011834 | 0.004008 | 0.021935 | 0.009281 | 0.000833 | 0.012632 |

| Date      | PTBA     | PTPP     | SILO     | SMGR     | SMRA     | SSMS     | TLKM     | UNTR     | UNVR     | WIKA     |
|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 5/23/2014 | 0.015234 | 0.005236 | 0.043059 | 0.005004 | -0.0198  | -0.01613 | 0        | -0.00116 | 0        | -0.0063  |
| 5/26/2014 | -0.01086 | -0.0105  | 0.011429 | -0.00167 | -0.01207 | 0        | 0.011765 | 0        | 0.003325 | -0.00634 |
| 5/27/2014 | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 5/28/2014 | -0.02655 | -0.00529 | 0        | 0.014889 | 0.035789 | 0.016129 | -0.00587 | 0.017192 | 0.002487 | -0.00425 |
| 5/29/2014 | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 5/30/2014 | -0.0412  | 0.013175 | 0.127833 | -0.03339 | -0.01972 | -0.00401 | 0.009756 | -0.01488 | -0.03625 | -0.00213 |
| 6/2/2014  | 0.029922 | -0.02922 | -0.00334 | 0.008453 | -0.01606 | 0.035507 | -0.02159 | 0.022806 | 0.021232 | -0.0172  |
| 6/3/2014  | 0.022422 | -0.00812 | 0.001671 | 0.013378 | -0.02045 | 0        | 0.011834 | 0.007861 | 0.010034 | 0.002167 |
| 6/4/2014  | -0.01115 | 0        | -0.01345 | 0.003317 | -0.00414 | -0.0117  | -0.01183 | 0.004464 | 0.00746  | 0.008621 |
| 6/5/2014  | 0.022174 | -0.01644 | -0.00339 | 0.006601 | -0.00833 | 0.003914 | 0        | 0.004444 | 0.005764 | -0.00646 |
| 6/6/2014  | 0        | -0.02235 | 0        | 0.00819  | -0.0084  | -0.00391 | 0.00396  | 0.013216 | 0.000821 | -0.01743 |
| 6/9/2014  | -0.03118 | -0.02866 | -0.00681 | -0.02144 | -0.00847 | 0        | -0.024   | -0.00879 | -0.01654 | -0.03125 |
| 6/10/2014 | 0.006764 | 0.017291 | -0.00171 | 0.016529 | 0        | 0        | 0.022023 | 0.009885 | 0.007478 | 0.00678  |
| 6/11/2014 | 0.011173 | 0.033711 | -0.00687 | 0.006536 | 0.041673 | 0        | -0.01798 | 0.00545  | 0.009065 | 0.035402 |
| 6/12/2014 | -0.02247 | 0.002759 | -0.00173 | 0.003252 | 0.00813  | 0        | -0.03071 | 0        | -0.01571 | 0        |
| 6/13/2014 | -0.00913 | 0        | -0.00173 | 0.001622 | -0.01633 | 0.003914 | 0.014448 | -0.00436 | -0.00669 | -0.01313 |
| 6/16/2014 | -0.03977 | 0.01368  | -0.0052  | -0.00325 | 0.004107 | -0.00391 | -0.01237 | -0.04123 | -0.00505 | 0.0022   |
| 6/17/2014 | 0.032867 | -0.00819 | -0.00348 | 0.003247 | -0.0207  | 0.003914 | 0.004141 | 0.02472  | -0.00507 | -0.00662 |
| 6/18/2014 | -0.0281  | -0.02497 | -0.00175 | -0.01469 | -0.01688 | 0        | 0        | 0        | -0.0034  | -0.01561 |
| 6/19/2014 | 0.025793 | 0        | 0        | -0.01325 | -0.02151 | -0.02372 | -0.00414 | 0        | 0.005089 | -0.02043 |
| 6/20/2014 | -0.01869 | -0.00281 | 0        | -0.00501 | 0.004338 | 0.003992 | 0        | 0.001109 | 0.010938 | 0        |
| 6/23/2014 | 0.011723 | 0        | 0        | 0.005013 | -0.03525 | 0.003976 | 0.0185   | 0.007731 | -0.00251 | -0.00922 |
| 6/24/2014 | -0.02837 | 0.022285 | 0.010435 | 0        | 0.030908 | 0        | 0.004065 | 0.012029 | -0.00336 | 0.027399 |
| 6/25/2014 | -0.01206 | -0.01108 | 0.003454 | 0        | -0.04445 | 0        | -0.0061  | -0.00436 | 0        | -0.0274  |
| 6/26/2014 | 0.023982 | 0.005556 | 0.006873 | 0.006645 | -0.00456 | -0.00797 | 0.006104 | 0.007613 | 0.003361 | 0.009217 |
| 6/27/2014 | 0.007084 | -0.01395 | 0.013606 | -0.00831 | 0.013606 | 0.003992 | -0.01636 | -0.01418 | -0.01097 | -0.0023  |

| Date      | PTBA     | PTPP     | SILO     | SMGR     | SMRA     | SSMS     | TLKM     | UNTR     | UNVR     | WIKA     |
|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 6/30/2014 | 0.009368 | 0.038572 | -0.02393 | 0.006656 | 0.022273 | -0.008   | 0.01636  | 0.015267 | -0.00681 | 0.018224 |
| 7/1/2014  | -0.01645 | -0.01361 | -0.03164 | 0        | -0.01778 | -0.00402 | 0.006067 | -0.00979 | 0.016095 | 0        |
| 7/2/2014  | 0.01878  | -0.00549 | 0        | 0        | -0.01354 | 0.004024 | 0.008032 | 0.01195  | 0.019143 | 0.002255 |
| 7/3/2014  | -0.00233 | 0        | 0        | -0.00332 | 0.00905  | 0        | -0.01005 | 0        | -0.00413 | 0.022273 |
| 7/4/2014  | -0.00702 | 0.029853 | 0        | 0.006634 | 0.052644 | 0        | 0.020001 | 0        | 0.003306 | 0.021787 |
| 7/7/2014  | 0.050354 | 0.072196 | 0        | 0.051541 | 0.041847 | 0.008    | 0.02927  | 0.021368 | 0.019608 | 0.046324 |
| 7/8/2014  | -0.00672 | 0.007435 | -0.00179 | 0.017121 | 0.008163 | 0.007937 | 0.005753 | 0.014691 | 0.010463 | 0.002055 |
| 7/9/2014  | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 7/10/2014 | 0.008949 | 0.062221 | 0.001787 | 0.031893 | 0.09309  | 0.003945 | -0.00961 | 0.024693 | 0.005589 | 0.026344 |
| 7/11/2014 | -0.04324 | -0.03542 | 0        | -0.00449 | -0.07696 | -0.01188 | -0.00581 | -0.04575 | -0.03237 | -0.0141  |
| 7/14/2014 | 0        | 0.002401 | 0        | 0        | 0.003992 | -0.01202 | 0.013501 | 0.009529 | 0        | 0.018091 |
| 7/15/2014 | 0        | 0.058224 | 0        | 0.016382 | 0.042892 | -0.06239 | 0.017094 | 0.003156 | 0.031569 | 0.039067 |
| 7/16/2014 | 0.00464  | 0.020157 | -0.00179 | 0.007358 | 0.00381  | 0.004283 | -0.00189 | -0.02123 | -0.00399 | 0.001914 |
| 7/17/2014 | -0.02817 | 0.004425 | -0.00179 | -0.02976 | -0.02308 | -0.01724 | -0.00189 | -0.01732 | -0.01126 | -0.00768 |
| 7/18/2014 | 0.007117 | 0.015334 | -0.01081 | 0.009023 | 0.030654 | -0.00436 | 0.013146 | -0.00767 | 0.000809 | 0.020973 |
| 7/21/2014 | 0.034847 | 0.038384 | 0.014389 | 0.016333 | 0.029742 | 0.008696 | 0.005581 | 0.012029 | 0.005643 | 0.05506  |
| 7/22/2014 | -0.02778 | -0.01052 | 0.015944 | -0.02083 | 0.010929 | 0.008621 | -0.01684 | -0.00764 | 0.00321  | -0.01258 |
| 7/23/2014 | 0.009346 | 0        | 0.005259 | 0.014926 | -0.00727 | 0.017022 | -0.01521 | -0.00549 | 0.000801 | -0.02009 |
| 7/24/2014 | 0.034289 | -0.0388  | 0        | -0.01342 | -0.02588 | 0.061369 | 0.011429 | 0.008772 | -0.0024  | -0.01487 |
| 7/25/2014 | 0.046111 | -0.00662 | 0        | -0.00451 | 0.011173 | 0.00396  | 0.003781 | 0        | -0.01292 | -0.00752 |
| 7/28/2014 | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 7/29/2014 | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 7/30/2014 | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 7/31/2014 | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 8/1/2014  | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 8/4/2014  | 0.070422 | 0.011001 | 0.017331 | 0.009009 | -0.01493 | 0.007874 | 0.014982 | 0.042742 | 0.023304 | -0.0133  |

| Date      | PTBA     | PTPP     | SILO     | SMGR     | SMRA     | SSMS     | TLKM     | UNTR     | UNVR     | WIKA     |
|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 8/5/2014  | 0.015873 | 0.017354 | -0.01558 | -0.01354 | -0.01134 | 0.003914 | 0.007407 | 0.005216 | -0.01844 | 0.028277 |
| 8/6/2014  | -0.01587 | -0.01517 | -0.00175 | -0.00608 | -0.01533 | 0.030772 | -0.0205  | -0.00941 | -0.00487 | -0.01687 |
| 8/7/2014  | 0.029559 | -0.00438 | 0.047791 | -0.00305 | 0.003854 | 0        | 0.013097 | 0.007326 | 0.000813 | 0.001889 |
| 8/8/2014  | 0.005808 | 0.004376 | 0        | -0.00613 | 0.007663 | 0.003781 | 0.003711 | 0        | -0.00898 | -0.01521 |
| 8/11/2014 | -0.0274  | 0.025864 | 0        | 0.019803 | 0.018904 | 0.007519 | 0.018349 | 0.008307 | 0.024293 | 0.020854 |
| 8/12/2014 | -0.016   | 0.006363 | 0        | 0.004515 | -0.00375 | 0.007463 | 0.01085  | -0.0209  | 0.003195 | 0.036837 |
| 8/13/2014 | 0.023906 | 0.029169 | -0.06899 | 0.004494 | 0.014926 | 0.003711 | 0.001797 | 0.030163 | 0.020522 | 0.009001 |
| 8/14/2014 | 0.015625 | 0.010215 | 0.075637 | -0.01658 | -0.01493 | -0.0339  | -0.01083 | -0.01237 | -0.00078 | -0.00719 |
| 8/15/2014 | -0.00974 | -0.00407 | 0.013158 | 0.001519 | 0.003752 | -0.01156 | -0.01647 | 0.001037 | -0.00235 | 0.007194 |
| 8/18/2014 | 0.075365 | -0.00204 | 0.006515 | 0.010566 | 0.011173 | -0.0117  | 0.00552  | -0.00104 | -0.01262 | 0.017762 |
| 8/19/2014 | -0.01279 | -0.0041  | 0.009693 | 0.0015   | 0.00738  | -0.00393 | -0.00922 | 0.005173 | -0.00159 | 0.015721 |
| 8/20/2014 | 0.00367  | 0.010215 | -0.00322 | -0.00451 | 0.02541  | -0.01188 | 0.009217 | 0.007198 | 0.014207 | 0.00346  |
| 8/21/2014 | -0.01848 | 0.004057 | 0        | 0.003008 | -0.00359 | 0        | -0.00368 | -0.00926 | 0        | 0.015424 |
| 8/22/2014 | 0.016652 | -0.01633 | 0.003221 | 0.008969 | 0        | 0.027507 | -0.01111 | -0.02726 | -0.00945 | -0.00512 |
| 8/25/2014 | -0.02602 | 0.01227  | -0.00161 | -0.00149 | -0.01085 | -0.0117  | 0        | -0.01607 | -0.00317 | -0.00342 |
| 8/26/2014 | 0        | -0.01433 | -0.0546  | -0.01956 | -0.05609 | 0.011696 | 0.007421 | -0.02073 | 0.00554  | -0.04025 |
| 8/27/2014 | 0.022347 | 0        | 0.013514 | -0.01223 | 0.003839 | 0.02677  | 0.01103  | -0.02455 | 0.008644 | 0.010657 |
| 8/28/2014 | 0.00184  | 0        | 0.011677 | 0.009188 | 0.018976 | -0.01905 | -0.0055  | 0        | 0.004684 | 0.003527 |
| 8/29/2014 | -0.01855 | 0.01636  | 0        | -0.01073 | 0.007491 | 0.003839 | -0.02043 | 0.001129 | -0.03406 | 0.010508 |
| 9/1/2014  | 0.005602 | 0.004049 | 0        | 0.00154  | -0.01883 | 0.026467 | 0.016745 | 0.001128 | 0.030943 | -0.00699 |
| 9/2/2014  | 0.009268 | 0        | 0.001657 | 0.001537 | -0.00763 | 0.047368 | -0.0037  | 0.002252 | 0        | 0        |
| 9/3/2014  | 0.025502 | 0.014042 | 0.003306 | 0.009174 | 0.007634 | 0.007092 | 0.009217 | 0.010073 | 0        | 0.029388 |
| 9/4/2014  | 0.001797 | -0.01202 | 0.013115 | -0.01071 | -0.03089 | 0.010545 | 0.001833 | -0.04091 | -0.01021 | -0.01718 |
| 9/5/2014  | -0.0036  | -0.0081  | -0.00326 | 0.007663 | -0.03593 | -0.01408 | 0        | 0        | 0.004724 | 0.006908 |
| 9/8/2014  | 0.007181 | -0.00407 | 0.001633 | -0.00459 | 0.004057 | 0.007067 | 0.03774  | 0.011534 | 0.000785 | -0.00864 |
| 9/9/2014  | -0.03458 | -0.01232 | -0.00491 | -0.02327 | -0.00813 | -0.01418 | -0.00531 | -0.03739 | -0.01742 | -0.01399 |



| Date       | PTBA     | PTPP     | SILO     | SMGR     | SMRA     | SSMS     | TLKM     | UNTR     | UNVR     | WIKA     |
|------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 9/10/2014  | -0.03199 | -0.01877 | -0.0249  | -0.0063  | -0.0082  | -0.01077 | -0.00355 | -0.02899 | -0.0048  | 0.001759 |
| 9/11/2014  | -0.01347 | 0.008386 | 0.028171 | -0.00793 | 0.020367 | -0.01455 | -0.00535 | 0.00489  | 0.000802 | 0.008749 |
| 9/12/2014  | 0.028655 | 0.004167 | -0.01647 | 0.004766 | 0.019961 | 0.014546 | -0.00179 | 0.016929 | 0.004002 | 0        |
| 9/15/2014  | -0.01136 | -0.00417 | 0.032683 | 0.02504  | 0.015687 | 0.021429 | -0.00539 | -0.01937 | 0.000798 | 0.001741 |
| 9/16/2014  | -0.02507 | -0.00839 | 0.00321  | 0        | -0.01569 | -0.00354 | 0.007181 | -0.00367 | 0.008741 | -0.01401 |
| 9/17/2014  | 0.013579 | 0.012552 | 0        | 0.012289 | 0.01957  | 0.010582 | 0.019487 | 0.010982 | 0.009449 | 0.003521 |
| 9/18/2014  | 0        | -0.00417 | -0.02433 | 0.003049 | -0.01563 | -0.02128 | 0.008734 | 0.008459 | 0.002348 | -0.00176 |
| 9/19/2014  | -0.0058  | 0.006244 | 0.04338  | -0.00611 | 0.023347 | 0.007143 | 0.024056 | 0.01789  | -0.00706 | 0.017452 |
| 9/22/2014  | -0.00583 | -0.01463 | -0.00473 | -0.00307 | -0.01161 | 0.003552 | -0.0258  | -0.0095  | 0.007062 | -0.00694 |
| 9/23/2014  | 0.041991 | -0.01699 | 0.004728 | -0.00926 | 0.019268 | -0.01429 | 0.006944 | -0.02293 | -0.01497 | -0.00875 |
| 9/24/2014  | -0.01697 | -0.01076 | 0        | -0.00935 | -0.00766 | 0        | -0.00694 | 0.006086 | -0.00557 | -0.00176 |
| 9/25/2014  | 0.022557 | 0.006473 | -0.02387 | -0.00157 | 0.003839 | 0        | 0.005213 | 0.003634 | -0.0008  | 0        |
| 9/26/2014  | -0.02637 | -0.0621  | 0.011209 | -0.05311 | -0.05919 | -0.02182 | -0.00173 | -0.02572 | 0.015848 | -0.0636  |
| 9/29/2014  | 0.01703  | -0.01615 | -0.00159 | 0.00823  | -0.01227 | -0.03746 | 0.010363 | -0.00248 | 0.00627  | -0.02277 |
| 9/30/2014  | -0.00943 | 0        | -0.04235 | 0.01141  | 0.004107 | -0.03496 | 0.001717 | -0.01    | -0.00627 | 0        |
| 10/1/2014  | -0.01527 | 0.058708 | 0.026274 | -0.01799 | -0.00411 | -0.00396 | -0.0173  | -0.00252 | 0        | 0.041359 |
| 10/2/2014  | -0.00966 | -0.03572 | -0.0065  | -0.03015 | -0.05064 | -0.00797 | -0.03734 | -0.0294  | -0.00473 | -0.03944 |
| 10/3/2014  | 0        | -0.00913 | -0.00819 | -0.00512 | -0.05792 | -0.01207 | 0.010811 | -0.01043 | -0.02804 | -0.04707 |
| 10/6/2014  | -0.00584 | 0.011403 | -0.01325 | 0.028646 | 0.004577 | 0.020041 | 0.019521 | 0.047354 | -0.00081 | 0        |
| 10/7/2014  | 0.038319 | 0.042182 | -0.0185  | 0.02299  | 0.053346 | 0.007905 | 0.005259 | 0.022251 | -0.00326 | 0.02577  |
| 10/8/2014  | 0        | -0.0242  | -0.0154  | -0.04312 | -0.01307 | -0.032   | -0.0212  | -0.05142 | -0.00245 | -0.02176 |
| 10/9/2014  | -0.02281 | 0.011074 | -0.00866 | 0.005072 | 0.021693 | 0.008097 | 0        | -0.00516 | 0.00408  | 0.035367 |
| 10/10/2014 | -0.0155  | -0.02002 | -0.01578 | 0.001685 | 0        | -0.02449 | -0.00897 | -0.0091  | 0.003252 | -0.01165 |
| 10/13/2014 | -0.05006 | 0.006719 | -0.02505 | 0.016695 | -0.0043  | -0.05522 | 0        | -0.05088 | -0.00979 | 0.011651 |
| 10/14/2014 | -0.01656 | 0.01989  | -0.00363 | 0        | 0.017094 | -0.09139 | 0        | -0.01105 | 0.013838 | 0.032292 |
| 10/15/2014 | -0.0514  | 0.038631 | 0.018019 | 0.034177 | 0.008439 | -0.00962 | 0.028421 | -0.04546 | 0.005643 | 0.031281 |

| Date       | PTBA     | PTPP     | SILO     | SMGR     | SMRA     | SSMS     | TLKM     | UNTR     | UNVR     | WIKA     |
|------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 10/16/2014 | 0.051403 | 0.008386 | -0.00358 | -0.00803 | 0.012526 | 0.014389 | -0.01767 | -0.00145 | -0.00564 | 0.014389 |
| 10/17/2014 | 0.054836 | 0.026778 | -0.00539 | 0.031749 | 0.036664 | 0.051055 | 0        | 0.004357 | 0.032607 | 0.024693 |
| 10/20/2014 | -0.02806 | -0.01227 | -0.0274  | 0        | -0.01613 | -0.00454 | 0.01416  | 0.011528 | -0.02456 | 0.003478 |
| 10/21/2014 | -0.01846 | 0.014301 | -0.01681 | -0.01893 | 0.024098 | 0.004535 | 0.001756 | -0.01153 | 0.014331 | 0.008643 |
| 10/22/2014 | 0.034591 | 0.004049 | -0.00189 | 0.025159 | 0.02353  | 0.031183 | 0.003503 | 0.012959 | 0.012569 | 0.003436 |
| 10/23/2014 | -0.00401 | 0.006042 | 0.013121 | 0        | 0.015385 | 0.025975 | 0.006969 | 0.025425 | -0.0261  | 0        |
| 10/24/2014 | -0.01416 | -0.01824 | -0.00748 | -0.0125  | -0.03496 | 0.025318 | -0.00348 | -0.01546 | -0.01942 | -0.00688 |
| 10/27/2014 | 0.004065 | 0.022246 | 0.011194 | -0.00631 | -0.03622 | -0.01258 | -0.02291 | -0.04047 | -0.01814 | 0        |
| 10/28/2014 | -0.03719 | 0        | 0.014733 | -0.01434 | 0        | 0.008403 | -0.04372 | 0.005882 | -0.00584 | -0.01391 |
| 10/29/2014 | 0.055285 | 0.027615 | 0.007286 | 0.028483 | 0.01222  | 0.012474 | 0.012951 | 0.036001 | 0.040186 | 0.015639 |
| 10/30/2014 | 0.005958 | 0.019268 | 0        | -0.02049 | -0.00813 | 0.020451 | 0.014599 | 0        | -0.02112 | -0.00345 |
| 10/31/2014 | 0.025417 | 0.00381  | 0        | 0.011085 | 0.028171 | 0.008065 | -0.00363 | 0.03884  | -0.00164 | -0.01043 |
| 11/3/2014  | -0.01165 | 0.005687 | 0.001813 | -0.00632 | 0.027399 | 0        | 0.00363  | -0.00136 | 0.001643 | 0.005231 |
| 11/4/2014  | -0.00981 | -0.01716 | 0.035591 | -0.00477 | -0.01165 | 0.015937 | -0.00727 | -0.02623 | -0.00247 | -0.00523 |
| 11/5/2014  | 0        | -0.00579 | 0.020762 | -0.00639 | 0        | -0.04033 | 0        | 0.039758 | -0.00165 | -0.0212  |
| 11/6/2014  | -0.00792 | 0.026719 | -0.00687 | -0.01453 | 0.011651 | -0.01242 | -0.01101 | 0.025217 | -0.00745 | -0.01077 |
| 11/7/2014  | -0.00199 | 0.005634 | 0        | -0.00489 | -0.03138 | -0.07347 | -0.03568 | -0.01187 | -0.01002 | -0.00362 |
| 11/10/2014 | 0.007937 | 0.016713 | -0.01739 | -0.00656 | -0.01202 | -0.00449 | 0.00572  | 0.005291 | 0.004186 | 0.00181  |
| 11/11/2014 | 0.01763  | 0.025456 | 0.013938 | 0.006557 | 0.016    | 0.035402 | 0.031808 | 0.009192 | 0.019852 | 0.04075  |
| 11/12/2014 | -0.02159 | -0.0054  | -0.00173 | 0.011373 | 0        | 0.008658 | 0.00551  | -0.03323 | 0.000819 | -0.00522 |
| 11/13/2014 | -0.02004 | 0.008985 | -0.00521 | 0.008045 | 0.011834 | 0        | 0.00183  | 0.026668 | 0.003268 | 0        |
| 11/14/2014 | -0.03083 | 0.024736 | -0.02469 | 0.023754 | -0.01183 | 0.058594 | 0.001826 | 0.010471 | -0.00655 | 0.012142 |
| 11/17/2014 | 0.026778 | 0.020726 | -0.00897 | -0.00786 | 0.031253 | 0.043745 | 0.003643 | -0.02906 | 0.019513 | 0.018788 |
| 11/18/2014 | 0.004057 | 0.015267 | -0.00905 | 0.006289 | 0.003839 | 0.049346 | 0.001817 | 0.015958 | 0.017558 | 0.041431 |
| 11/19/2014 | -0.00406 | 0        | 0.113329 | 0.007806 | 0.044951 | -0.07696 | 0.007233 | 0.017005 | -0.01595 | -0.00162 |
| 11/20/2014 | 0.012121 | -0.00506 | -0.03469 | -0.00468 | -0.00735 | -0.01613 | -0.02002 | -0.0223  | 0.0096   | -0.02303 |



| Date       | PTBA     | PTPP     | SILO     | SMGR     | SMRA     | SSMS     | TLKM     | UNTR     | UNVR     | WIKA     |
|------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 12/29/2014 | -0.00795 | 0.019775 | 0        | 0.004648 | -0.00656 | 0.021774 | 0.001756 | 0.002911 | 0.013391 | 0.05101  |
| 12/30/2014 | -0.002   | 0        | -0.00727 | 0.001544 | 0        | 0.024317 | 0.005249 | 0.008683 | 0.010895 | -0.01081 |
| 12/31/2014 | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 1/1/2015   | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 1/2/2015   | -0.01005 | 0.004187 | 0.00546  | 0        | 0.019545 | 0.014903 | -0.00175 | -0.00289 | 0.006942 | -0.00136 |
| 1/5/2015   | -0.00202 | -0.01403 | -0.00182 | 0.001542 | 0.012821 | 0.011765 | -0.00878 | -0.02487 | -0.00154 | -0.02759 |
| 1/6/2015   | -0.02252 | 0        | -0.01097 | -0.01866 | -0.00319 | 0        | -0.00708 | 0.004435 | 0        | -0.00561 |
| 1/7/2015   | 0.002068 | 0.040144 | 0        | 0.003135 | 0.025238 | 0        | -0.00178 | 0.004415 | 0.019818 | 0.026372 |
| 1/8/2015   | -0.02511 | 0.018818 | -0.00184 | -0.00628 | 0.018519 | 0        | 0.008857 | -0.00737 | 0.007519 | 0.008186 |
| 1/9/2015   | 0        | -0.00133 | 0.00184  | -0.00791 | -0.02791 | -0.00293 | 0.00878  | 0.011765 | -0.0045  | -0.00136 |
| 1/12/2015  | -0.02358 | -0.02156 | -0.00184 | 0.012618 | -0.01585 | -0.00294 | -0.00878 | -0.00146 | -0.03445 | -0.02062 |
| 1/13/2015  | -0.0286  | 0.02023  | -0.00554 | 0.012461 | -0.03247 | 0        | 0.001762 | 0.023156 | 0.027652 | 0.00554  |
| 1/14/2015  | 0        | -0.01615 | -0.02058 | -0.01403 | -0.01329 | -0.00295 | -0.0053  | -0.00143 | -0.01066 | -0.01953 |
| 1/15/2015  | 0        | 0.00271  | -0.0095  | 0.017121 | 0.032898 | 0.008811 | 0.001768 | -0.00143 | 0.002294 | 0.022285 |
| 1/16/2015  | -0.04334 | -0.00679 | 0        | -0.07696 | 0.03498  | -0.01176 | 0.005286 | -0.01009 | 0.023406 | -0.01807 |
| 1/19/2015  | -0.03077 | -0.00546 | 0.001907 | -0.06188 | 0.00312  | 0.002954 | 0.003509 | -0.01166 | 0.014815 | 0.005594 |
| 1/20/2015  | 0.030772 | -0.00137 | -0.00573 | 0.005305 | -0.00939 | -0.00295 | 0.015639 | 0.004389 | 0.005865 | 0.004175 |
| 1/21/2015  | 0.038862 | -0.00412 | 0        | -0.00531 | 0.0125   | 0.011765 | 0.005159 | 0.001459 | 0.049903 | -0.00139 |
| 1/22/2015  | 0.052414 | 0.047083 | 0.017094 | 0.021053 | 0.051449 | -0.02367 | -0.01208 | 0.02732  | -0.00418 | 0.01244  |
| 1/23/2015  | -0.0107  | -0.00131 | 0.014954 | 0.005195 | -0.0391  | 0.008942 | 0.003466 | 0.014085 | 0.011111 | 0.004112 |
| 1/26/2015  | -0.03501 | -0.01325 | -0.01119 | 0        | -0.02171 | -0.00297 | -0.02452 | 0.009743 | -0.01953 | -0.02915 |
| 1/27/2015  | 0.01547  | 0.007968 | -0.00188 | 0.003448 | -0.00629 | -0.00298 | 0.00354  | 0.008276 | 0.000704 | 0.022285 |
| 1/28/2015  | 0.010905 | 0.005277 | 0        | -0.00345 | 0.027996 | -0.00299 | 0.005286 | 0        | -0.0007  | 0.01232  |
| 1/29/2015  | -0.01751 | 0        | 0        | -0.00519 | 0.003063 | -0.02118 | 0.005259 | 0        | -0.00353 | 0        |
| 1/30/2015  | 0.004405 | 0.029814 | 0.007491 | 0.01208  | 0.009132 | 0.009132 | -0.01054 | -0.01662 | 0.012641 | 0.018868 |
| 2/2/2015   | 0        | 0.013951 | 0.007435 | -0.00516 | -0.01835 | 0.00905  | -0.00887 | -0.0169  | 0.009722 | 0.005326 |

| Date      | PTBA     | PTPP     | SILO     | SMGR     | SMRA     | SSMS     | TLKM     | UNTR     | UNVR     | WIKA     |
|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 2/3/2015  | 0.004386 | 0.037087 | -0.00185 | 0.011997 | 0.030397 | 0        | 0.007105 | 0.016902 | 0.005513 | 0.013193 |
| 2/4/2015  | 0.006543 | -0.04214 | -0.01119 | 0.006791 | -0.00601 | 0.005988 | 0.007055 | 0.006959 | 0.000687 | -0.04284 |
| 2/5/2015  | -0.01093 | 0.010076 | 0.001874 | -0.0102  | -0.01517 | 0.014815 | -0.0106  | -0.00139 | -0.0321  | -0.00411 |
| 2/6/2015  | 0.019587 | 0.001252 | -0.0618  | 0.010204 | 0.050681 | 0.011696 | 0.005314 | 0.027399 | 0.038948 | -0.00137 |
| 2/9/2015  | -0.01739 | -0.01006 | -0.03239 | 0.008425 | 0.02299  | -0.00583 | 0.010545 | -0.02048 | -0.01443 | -0.00414 |
| 2/10/2015 | -0.01993 | -0.00889 | 0.006154 | -0.01181 | -0.01431 | -0.00587 | -0.00526 | 0.017772 | -0.01745 | -0.01671 |
| 2/11/2015 | -0.01351 | 0.010152 | 0.006116 | 0        | 0.014306 | 0.005865 | 0.005259 | 0.006752 | 0.004917 | -0.00141 |
| 2/12/2015 | 0.017978 | -0.0076  | -0.00407 | -0.02232 | -0.00856 | 0.00292  | 0.012163 | 0.001345 | 0        | -0.00706 |
| 2/13/2015 | 0.022027 | 0        | 0.012171 | 0.003466 | 0.008559 | 0.014472 | 0.028938 | 0.018642 | 0.018056 | -0.00142 |
| 2/16/2015 | -0.02873 | -0.01668 | -0.01421 | 0.003454 | -0.02009 | 0.005731 | -0.03067 | -0.01061 | -0.03431 | -0.01429 |
| 2/17/2015 | -0.00675 | 0.002584 | 0        | 0.011997 | -0.01754 | 0.016998 | 0.001729 | 0.013245 | 0.022536 | 0.005739 |
| 2/18/2015 | -0.01822 | 0.017903 | 0.002043 | 0.006791 | 0.068403 | 0.011173 | 0        | 0.01437  | -0.0112  | 0.019831 |
| 2/19/2015 | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 2/20/2015 | -0.02561 | 0.005057 | 0        | -0.00169 | 0.00823  | -0.00837 | -0.00173 | -0.00651 | -0.00494 | 0.019445 |
| 2/23/2015 | -0.01186 | 0.022445 | 0        | 0.003384 | -0.01099 | 0.005587 | 0.006897 | 0.003909 | 0.020316 | 0.012304 |
| 2/24/2015 | -0.00719 | 0        | -0.01232 | 0.00841  | -0.00277 | 0.064713 | -0.00172 | 0.024407 | -0.00069 | -0.00819 |
| 2/25/2015 | 0.002401 | -0.00618 | 0.01232  | 0.014963 | 0.002766 | 0.007802 | 0.022129 | 0.020101 | 0.008981 | 0.005464 |
| 2/26/2015 | 0        | 0.002478 | 0        | -0.00331 | 0.002759 | 0.005168 | 0.001682 | -0.00499 | 0.004118 | 0.001361 |
| 2/27/2015 | 0.023698 | 0.004938 | -0.00204 | -0.01501 | 0        | 0.022931 | -0.01354 | 0.036814 | -0.01379 | -0.00409 |
| 3/2/2015  | 0.029991 | 0        | 0        | 0.001679 | -0.01108 | 0        | 0.005098 | 0.041304 | 0.01105  | -0.00823 |
| 3/3/2015  | 0.00227  | -0.0199  | 0        | -0.00505 | -0.00559 | 0        | -0.0017  | 0.027368 | -0.00897 | -0.00969 |
| 3/4/2015  | -0.02062 | -0.00757 | -0.00205 | 0.003367 | 0.005587 | 0.005025 | -0.01196 | -0.02621 | 0.000693 | -0.01401 |
| 3/5/2015  | 0.002312 | 0.007566 | 0.024293 | 0.001679 | -0.03978 | -0.00251 | 0        | 0.005757 | 0.004147 | -0.0085  |
| 3/6/2015  | 0.009195 | -0.00504 | 0.046884 | 0.00335  | -0.0354  | -0.00252 | 0.025447 | -0.00115 | 0.04187  | -0.00285 |
| 3/9/2015  | -0.01383 | -0.01912 | 0.044784 | -0.01347 | -0.03359 | 0.002516 | -0.01349 | -0.05311 | -0.00797 | -0.02309 |
| 3/10/2015 | -0.01637 | 0.005135 | 0.003643 | -0.0034  | 0.030583 | 0.01     | 0        | 0.034548 | 0.007968 | 0.017367 |

| Date      | PTBA     | PTPP     | SILO     | SMGR     | SMRA     | SSMS     | TLKM     | UNTR     | UNVR     | WIKA     |
|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 3/11/2015 | -0.03602 | -0.02726 | -0.01835 | -0.01715 | -0.02131 | -0.00499 | -0.0017  | -0.02011 | 0.024822 | -0.01154 |
| 3/12/2015 | 0.040724 | -0.0066  | -0.00185 | -0.0052  | -0.00308 | -0.00501 | -0.00512 | -0.0084  | 0.027364 | 0.002899 |
| 3/13/2015 | -0.02135 | -0.00133 | -0.00186 | -0.01049 | 0.024391 | 0.005013 | 0.010204 | 0.001204 | 0.001255 | -0.01458 |
| 3/16/2015 | -0.01937 | -0.00799 | -0.00186 | 0.012227 | -0.00604 | 0.002497 | 0.006745 | -0.00604 | -0.00755 | -0.00147 |
| 3/17/2015 | 0.009732 | 0.005333 | -0.00373 | 0.00692  | 0.035718 | -0.00751 | -0.00675 | -0.00729 | -0.01464 | -0.00295 |
| 3/18/2015 | 0.002418 | 0.011897 | 0        | -0.01739 | -0.03269 | 0.002509 | -0.00169 | 0.047628 | -0.03922 | 0.040468 |
| 3/19/2015 | 0.009615 | 0.01823  | 0.001867 | 0.010471 | 0.035612 | 0.005    | 0        | -0.00116 | 0.021109 | 0.014065 |
| 3/20/2015 | -0.00962 | 0.002577 | 0        | -0.04256 | -0.01765 | -0.005   | -0.01022 | -0.0035  | 0        | 0.005571 |
| 3/23/2015 | 0.012005 | -0.00258 | 0.003724 | -0.02013 | 0.002963 | 0        | 0        | -0.01057 | 0.00845  | -0.01117 |
| 3/24/2015 | 0.007134 | -0.01168 | 0        | -0.00742 | -0.00593 | 0.007491 | 0        | 0.018714 | 0.007095 | -0.01272 |
| 3/25/2015 | -0.02398 | -0.01845 | 0        | -0.04183 | -0.02105 | -0.00749 | -0.01379 | -0.0199  | -0.00193 | -0.01867 |
| 3/26/2015 | -0.00487 | -0.01744 | 0        | 0.009662 | -0.01531 | -0.00755 | -0.02461 | -0.01429 | -0.00841 | -0.0146  |
| 3/27/2015 | 0.024098 | 0.001352 | 0        | 0.03403  | 0.003082 | 0        | 0        | 0.026037 | 0.015464 | -0.01332 |
| 3/30/2015 | 0.018868 | 0.016086 | -0.00186 | 0.007407 | 0.042175 | 0        | 0.019384 | 0.006985 | 0.013968 | 0.016261 |
| 3/31/2015 | 0.004662 | 0.009265 | -0.00186 | 0.007353 | 0.014642 | 0.005038 | 0.008688 | 0.011534 | 0        | 0.024621 |
| 4/1/2015  | -0.00466 | -0.00927 | 0        | 0        | 0.028655 | 0.005013 | -0.01921 | 0.009132 | -0.01589 | -0.01586 |
| 4/2/2015  | 0.018519 | -0.01474 | -0.00374 | -0.00367 | 0.022347 | -0.0025  | -0.00353 | -0.00114 | 0.00064  | -0.02651 |
| 4/3/2015  | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 4/6/2015  | 0.018182 | -0.01496 | -0.00187 | 0.001837 | 0.016439 | 0        | 0.003534 | 0.002273 | 0.006382 | -0.01201 |
| 4/7/2015  | -0.00225 | 0.033673 | -0.00188 | 0.003663 | 0.050342 | -0.00755 | 0.00703  | 0.038959 | 0.012642 | 0.052954 |
| 4/8/2015  | -0.02746 | 0.020971 | -0.01515 | -0.01473 | -0.01825 | 0.024939 | 0.00175  | -0.01762 | -0.02803 | 0.029642 |
| 4/9/2015  | -0.00232 | 0.031911 | -0.01927 | 0.00555  | -0.01325 | 0.01224  | -0.00702 | 0.023065 | 0.016656 | 0        |
| 4/10/2015 | -0.00466 | 0.002509 | -0.01766 | -0.00927 | 0.005319 | 0.00243  | -0.0053  | 0        | 0.00127  | -0.00978 |
| 4/13/2015 | -0.02364 | -0.02281 | -0.00198 | -0.03217 | 0.02876  | 0.021609 | -0.01068 | 0        | 0.009473 | -0.00988 |
| 4/14/2015 | -0.0048  | -0.00772 | -0.01198 | -0.01161 | -0.02083 | -0.01195 | 0        | -0.00982 | -0.02611 | -0.00426 |
| 4/15/2015 | 0.023754 | 0.025512 | -0.04308 | 0.021175 | -0.01058 | 0.026099 | 0.003571 | 0.010905 | -0.00323 | 0.005682 |

| <b>Date</b> | <b>PTBA</b> | <b>PTPP</b> | <b>SILO</b> | <b>SMGR</b> | <b>SMRA</b> | <b>SSMS</b> | <b>TLKM</b> | <b>UNTR</b> | <b>UNVR</b> | <b>WIKA</b> |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 4/16/2015   | 0.009346    | 0.003771    | -0.0021     | 0.042877    | -0.00266    | 0.002339    | 0.001781    | -0.00109    | -0.01369    | 0.007057    |
| 4/17/2015   | 0           | 0.003757    | 0.061119    | 0.007273    | -0.02429    | 0.006985    | -0.00178    | -0.00109    | 0.000656    | 0.007008    |
| 4/20/2015   | -0.01405    | 0           | 0.051985    | -0.00363    | 0.018945    | 0           | 0.010638    | -0.0242     | 0.007187    | -0.0042     |
| 4/21/2015   | -0.00473    | 0.003743    | -0.01703    | 0.00544     | 0.008011    | 0.002317    | 0           | 0.019846    | 0.040822    | 0.005594    |
| 4/22/2015   | 0.007084    | 0.013606    | 0.011385    | -0.00908    | 0.010582    | -0.00697    | -0.00177    | -0.00328    | 0.008712    | -0.00279    |

## Lampiran 2 : Korelasi Kendall's Tau 30 saham JII

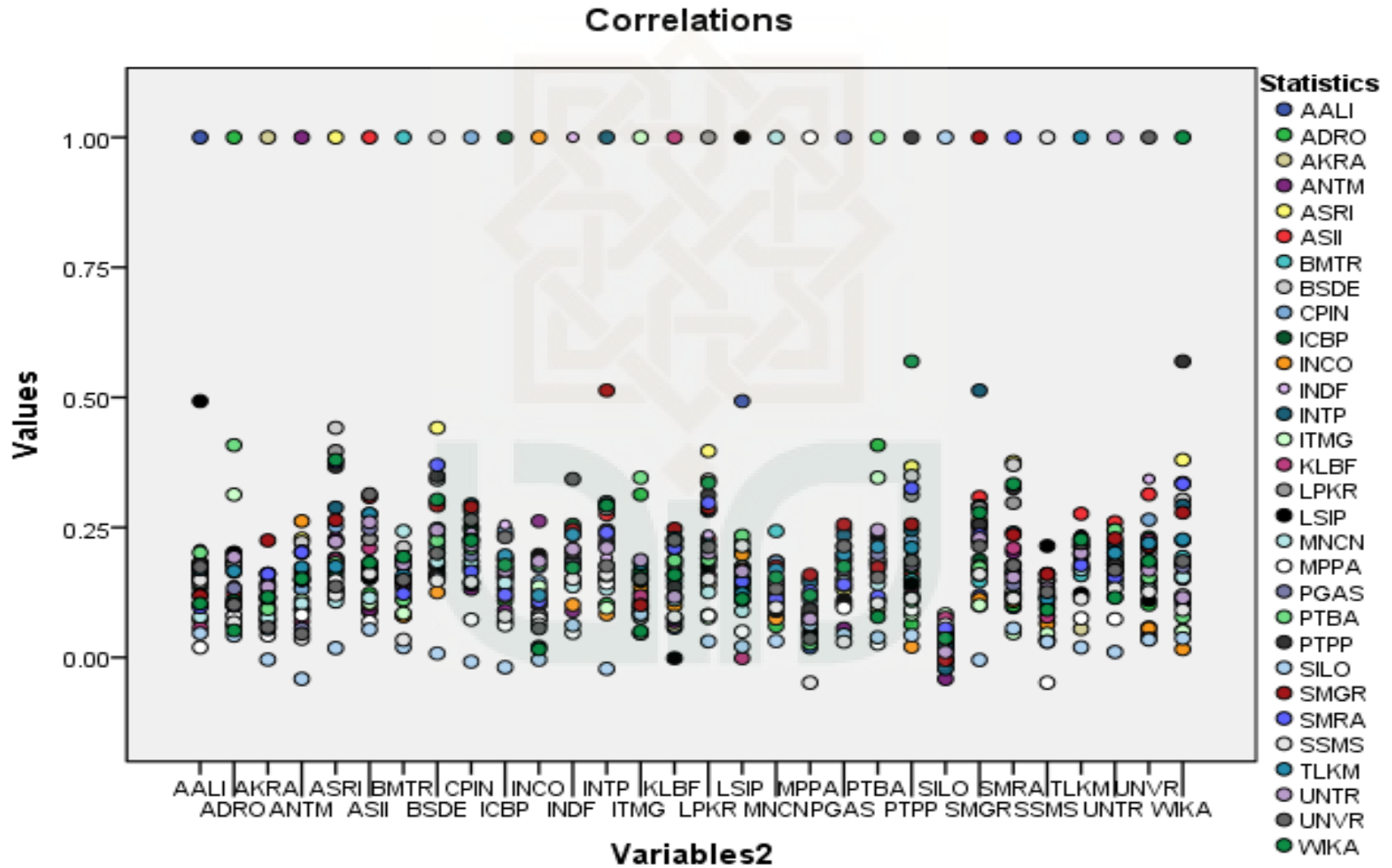
## Correlations

|      | AALI   | ADRO   | AKRA   | ANTM   | ASRI   | ASII   | BMTR   | BSDE   | CPIN   | ICBP   | INCO   | INDF   | INTP   | ITMG   | KLBF   | LPKR   | LSIP   | MNCN   | UNTR   | UNVR   | WIKA   |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| AALI | 1.000  | .181** | .072   | .148** | .183** | .154** | .154** | .163** | .175** | .134** | .174** | .208** | .102** | .154** | .057   | .143** | .493** | .078** | .178** | .174** | .104** |
| ADRO | .181** | 1.000  | .112** | .201** | .165** | .123** | .080*  | .181** | .173** | .109** | .191** | .138** | .102** | .313** | .182** | .179** | .201** | .060   | .193** | .101** | .052   |
| AKRA | .072   | .112** | 1.000  | .094*  | .117** | .087*  | .083*  | .161** | .144** | .069   | .075*  | .145** | .161** | .093*  | .062   | .138** | .129** | .076** | .136** | .058   | .116** |
| ANTM | .148** | .201** | .094*  | 1.000  | .228** | .092*  | .134** | .222** | .131** | .090*  | .262** | .089** | .149** | .111** | .069   | .158** | .204** | .104** | .150** | .046   | .151** |
| ASRI | .183** | .165** | .117** | .228** | 1.000  | .170** | .191** | .441** | .252** | .156** | .132** | .180** | .288** | .125** | .189** | .397** | .222** | .107** | .223** | .137** | .380** |
| ASII | .154** | .123** | .087*  | .092*  | .170** | 1.000  | .152** | .181** | .229** | .174** | .102** | .249** | .275** | .105** | .210** | .228** | .154** | .115** | .260** | .314** | .183** |
| BMTR | .154** | .080*  | .083*  | .134** | .191** | .152** | 1.000  | .212** | .184** | .150** | .080*  | .142** | .176** | .085** | .148** | .191** | .149** | .243** | .180** | .149** | .193** |
| BSDE | .163** | .181** | .161** | .222** | .441** | .181** | .212** | 1.000  | .248** | .236** | .125** | .185** | .299** | .158** | .175** | .342** | .174** | .185** | .245** | .200** | .304** |
| CPIN | .175** | .173** | .144** | .131** | .252** | .229** | .184** | .248** | 1.000  | .244** | .145** | .240** | .294** | .168** | .227** | .282** | .140** | .184** | .216** | .265** | .225** |
| ICBP | .134** | .109** | .069   | .090*  | .156** | .174** | .150** | .236** | .244** | 1.000  | .118** | .255** | .154** | .164** | .161** | .194** | .129** | .143** | .168** | .231** | .178** |
| INCO | .174** | .191** | .075*  | .262** | .132** | .102** | .080*  | .125** | .145** | .118** | 1.000  | .101** | .083** | .137** | .100** | .082** | .198** | .075** | .185** | .056   | .016   |
| INDF | .208** | .138** | .145** | .089** | .180** | .249** | .142** | .185** | .240** | .255** | .101** | 1.000  | .191** | .179** | .178** | .236** | .151** | .137** | .208** | .343** | .173** |
| INTP | .102** | .102** | .161** | .149** | .288** | .275** | .176** | .299** | .294** | .154** | .083** | .191** | 1.000  | .095** | .223** | .285** | .150** | .132** | .211** | .176** | .292** |
| ITMG | .154** | .313** | .093*  | .111** | .125** | .105** | .085** | .158** | .168** | .164** | .137** | .179** | .095** | 1.000  | .118** | .076** | .147** | .100** | .187** | .151** | .050   |
| KLBF | .057   | .182** | .062   | .069   | .189** | .210** | .148** | .175** | .227** | .161** | .100** | .178** | .223** | .118** | 1.000  | .158** | -.001  | .111** | .117** | .226** | .159** |
| LPKR | .143** | .179** | .138** | .158** | .397** | .228** | .191** | .342** | .282** | .194** | .082** | .236** | .285** | .076** | .158** | 1.000  | .174** | .125** | .201** | .212** | .336** |
| LSIP | .493** | .201** | .129** | .204** | .222** | .154** | .149** | .174** | .140** | .129** | .198** | .151** | .150** | .147** | -.001  | .174** | 1.000  | .090** | .166** | .111** | .112** |
| MNCN | .078** | .060   | .076*  | .104** | .107** | .115** | .243** | .185** | .184** | .143** | .075** | .137** | .132** | .100** | .111** | .125** | .090** | 1.000  | .145** | .132** | .154** |
| MPPA | .019   | .081** | .043   | .082** | .148** | .069   | .111** | .154** | .073** | .062   | .074** | .047   | .143** | .086** | .076** | .081** | .050   | .120** | .074** | .036   | .120** |
| PGAS | .168** | .133** | .100** | .055   | .131** | .247** | .139** | .152** | .197** | .188** | .105** | .182** | .235** | .151** | .214** | .190** | .110** | .146** | .169** | .214** | .175** |
| PTBA | .202** | .408** | .093*  | .170** | .182** | .178** | .111** | .224** | .210** | .186** | .179** | .174** | .157** | .346** | .187** | .188** | .235** | .141** | .245** | .154** | .078** |
| PTPP | .120** | .064   | .115** | .150** | .367** | .162** | .149** | .349** | .225** | .173** | .021   | .202** | .245** | .083** | .136** | .312** | .142** | .115** | .178** | .186** | .569** |
| SILO | .046   | .042   | -.004  | -.041  | .018   | .054   | .020   | .008   | -.008  | -.019  | -.004  | .062   | -.022  | .083** | .076** | .031   | .021   | .032   | .011   | .034   | .037   |
| SMGR | .119** | .099** | .225** | .163** | .264** | .308** | .146** | .292** | .289** | .188** | .112** | .245** | .513** | .101** | .247** | .288** | .169** | .176** | .229** | .214** | .279** |
| SMRA | .097** | .100** | .160** | .202** | .376** | .165** | .123** | .370** | .165** | .120** | .108** | .170** | .240** | .047   | .210** | .297** | .146** | .113** | .154** | .177** | .334** |
| SMRS | .149** | .067   | .117** | .036   | .120** | .161** | .034   | .148** | .145** | .079** | .064   | .151** | .160** | .046   | .078** | .151** | .214** | .097** | .133** | .126** | .092** |
| TLKM | .170** | .166** | .055   | .174** | .175** | .276** | .158** | .201** | .222** | .196** | .119** | .236** | .214** | .181** | .230** | .217** | .123** | .169** | .201** | .220** | .227** |
| UNTR | .178** | .193** | .136** | .150** | .223** | .260** | .180** | .245** | .216** | .168** | .185** | .208** | .211** | .187** | .117** | .201** | .166** | .145** | 1.000  | .168** | .115** |
| UNVR | .174** | .101** | .058   | .046   | .137** | .314** | .149** | .200** | .265** | .231** | .056   | .343** | .176** | .151** | .226** | .212** | .111** | .132** | .168** | 1.000  | .185** |
| WIKA | .104** | .052   | .116** | .151** | .380** | .183** | .193** | .304** | .225** | .178** | .016   | .173** | .292** | .050   | .159** | .336** | .112** | .154** | .115** | .185** | 1.000  |

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).





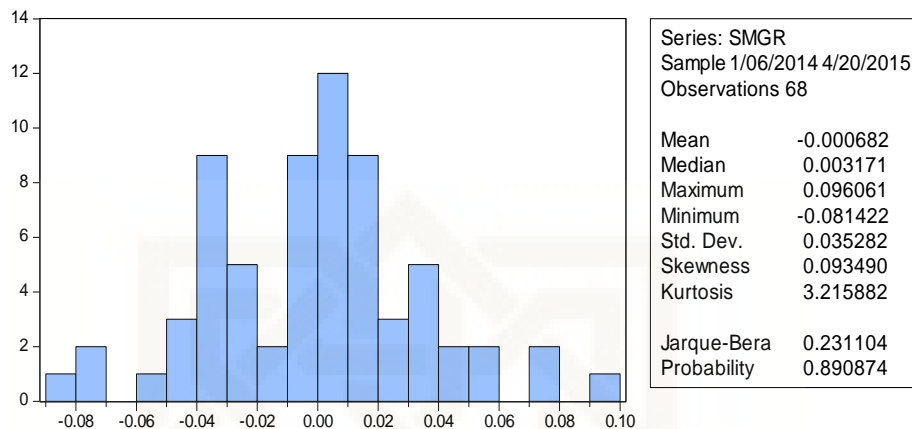
**Lampiran 3** : Data *Close Price* dan *return* saham SMGR.JK dan INTP.JK

| Date             | SMGR.JK |         | INTP.JK |         |
|------------------|---------|---------|---------|---------|
|                  | Close   | Return  | Close   | Return  |
| <b>1/1/2014</b>  | 14350   |         | 20000   |         |
| <b>1/6/2014</b>  | 14900   | 0.03761 | 20875   | 0.04282 |
| <b>1/13/2014</b> | 15200   | 0.01993 | 21900   | 0.04793 |
| <b>1/20/2014</b> | 14550   | -0.0437 | 21300   | -0.0278 |
| <b>1/27/2014</b> | 14200   | -0.0243 | 22400   | 0.05035 |
| <b>2/3/2014</b>  | 14950   | 0.05147 | 21500   | -0.041  |
| <b>2/10/2014</b> | 14850   | -0.0067 | 22200   | 0.03204 |
| <b>2/17/2014</b> | 15075   | 0.01504 | 22775   | 0.02557 |
| <b>2/24/2014</b> | 15000   | -0.005  | 22450   | -0.0144 |
| <b>3/3/2014</b>  | 15300   | 0.0198  | 22500   | 0.00222 |
| <b>3/10/2014</b> | 16000   | 0.04474 | 24000   | 0.06454 |
| <b>3/17/2014</b> | 15400   | -0.0382 | 23550   | -0.0189 |
| <b>3/24/2014</b> | 15800   | 0.02564 | 23375   | -0.0075 |
| <b>3/31/2014</b> | 16625   | 0.0509  | 24150   | 0.03262 |
| <b>4/7/2014</b>  | 15325   | -0.0814 | 22600   | -0.0663 |
| <b>4/14/2014</b> | 15825   | 0.03211 | 23450   | 0.03692 |
| <b>4/21/2014</b> | 15700   | -0.0079 | 22600   | -0.0369 |
| <b>4/28/2014</b> | 14600   | -0.0726 | 21450   | -0.0522 |
| <b>5/5/2014</b>  | 14800   | 0.01361 | 22000   | 0.02532 |
| <b>5/12/2014</b> | 15950   | 0.07483 | 23875   | 0.08179 |
| <b>5/19/2014</b> | 15025   | -0.0597 | 23450   | -0.018  |
| <b>5/26/2014</b> | 14725   | -0.0202 | 22650   | -0.0347 |
| <b>6/2/2014</b>  | 15325   | 0.03994 | 23600   | 0.04109 |
| <b>6/9/2014</b>  | 15425   | 0.0065  | 24850   | 0.05161 |
| <b>6/16/2014</b> | 14925   | -0.033  | 23350   | -0.0623 |
| <b>6/23/2014</b> | 14975   | 0.00334 | 22500   | -0.0371 |
| <b>6/30/2014</b> | 15125   | 0.00997 | 23375   | 0.03815 |
| <b>7/7/2014</b>  | 16650   | 0.09606 | 25725   | 0.0958  |
| <b>7/14/2014</b> | 16700   | 0.003   | 26000   | 0.01063 |
| <b>7/21/2014</b> | 16575   | -0.0075 | 24950   | -0.0412 |
| <b>7/28/2014</b> | 16575   | 0       | 24950   | 0       |
| <b>8/4/2014</b>  | 16250   | -0.0198 | 24200   | -0.0305 |
| <b>8/11/2014</b> | 16475   | 0.01375 | 24650   | 0.01842 |
| <b>8/18/2014</b> | 16800   | 0.01953 | 25350   | 0.028   |
| <b>8/25/2014</b> | 16225   | -0.0348 | 24250   | -0.0444 |

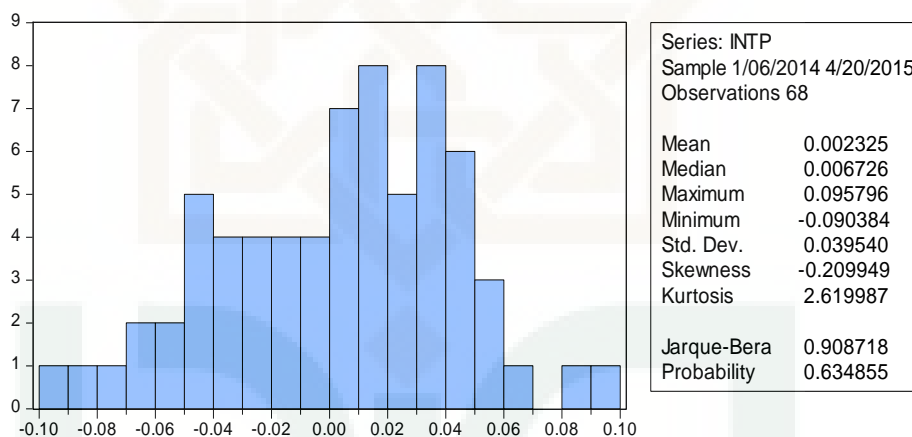
| Date       | SMGR.JK |         | INTP.JK |         |
|------------|---------|---------|---------|---------|
|            | Close   | Return  | Close   | Return  |
| 9/1/2014   | 16375   | 0.0092  | 24100   | -0.0062 |
| 9/8/2014   | 15775   | -0.0373 | 23150   | -0.0402 |
| 9/15/2014  | 16325   | 0.03427 | 23900   | 0.03188 |
| 9/22/2014  | 15125   | -0.0763 | 22175   | -0.0749 |
| 9/29/2014  | 14625   | -0.0336 | 21075   | -0.0509 |
| 10/6/2014  | 14850   | 0.01527 | 22000   | 0.04295 |
| 10/13/2014 | 16000   | 0.07459 | 22900   | 0.04009 |
| 10/20/2014 | 15900   | -0.0063 | 23875   | 0.04169 |
| 10/27/2014 | 15875   | -0.0016 | 24000   | 0.00522 |
| 11/3/2014  | 15300   | -0.0369 | 22875   | -0.048  |
| 11/10/2014 | 15975   | 0.04317 | 24200   | 0.05631 |
| 11/17/2014 | 16100   | 0.00779 | 24400   | 0.00823 |
| 11/24/2014 | 16000   | -0.0062 | 24675   | 0.01121 |
| 12/1/2014  | 16550   | 0.0338  | 25200   | 0.02105 |
| 12/8/2014  | 16525   | -0.0015 | 25075   | -0.005  |
| 12/15/2014 | 15975   | -0.0338 | 24450   | -0.0252 |
| 12/22/2014 | 16100   | 0.00779 | 24800   | 0.01421 |
| 12/29/2014 | 16200   | 0.00619 | 24800   | 0       |
| 1/5/2015   | 15750   | -0.0282 | 24175   | -0.0255 |
| 1/12/2015  | 15000   | -0.0488 | 22300   | -0.0807 |
| 1/19/2015  | 14475   | -0.0356 | 23000   | 0.03091 |
| 1/26/2015  | 14575   | 0.00688 | 23000   | 0       |
| 2/2/2015   | 14775   | 0.01363 | 23450   | 0.01938 |
| 2/9/2015   | 14450   | -0.0222 | 23400   | -0.0021 |
| 2/16/2015  | 14750   | 0.02055 | 23650   | 0.01063 |
| 2/23/2015  | 14875   | 0.00844 | 24050   | 0.01677 |
| 3/2/2015   | 14950   | 0.00503 | 24300   | 0.01034 |
| 3/9/2015   | 14225   | -0.0497 | 22200   | -0.0904 |
| 3/16/2015  | 13800   | -0.0303 | 21650   | -0.0251 |
| 3/23/2015  | 13450   | -0.0257 | 21400   | -0.0116 |
| 3/30/2015  | 13600   | 0.01109 | 22150   | 0.03445 |
| 4/6/2015   | 13425   | -0.013  | 22850   | 0.03111 |
| 4/13/2015  | 13800   | 0.02755 | 22900   | 0.00219 |
| 4/20/2015  | 13700   | -0.0073 | 23425   | 0.02267 |

## Lampiran 4 : Deskriptif, Uji Normalitas, dan Uji Stasioneritas

### 1. Deskriptif dan Uji Normalitas SMGR.JK



### 2. Deskriptif dan Uji Normalitas INTP.JK



### 3. Uji Stasioneritas SMGR.JK

Null Hypothesis: SMGR has a unit root

Exogenous: Constant

Lag Length: 1 (Automatic - based on SIC, maxlag=10)

|  | t-Statistic | Prob.* |
|--|-------------|--------|
| Augmented Dickey-Fuller test statistic | -8.160672   | 0.0000 |
| Test critical values:                  |             |        |
| 1% level                               | -3.533204   |        |
| 5% level                               | -2.906210   |        |
| 10% level                              | -2.590628   |        |

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

## 4. Uji Stasioneritas INTP.JK

Null Hypothesis: INTP has a unit root

Exogenous: Constant

Lag Length: 1 (Automatic - based on SIC, maxlag=10)

|  | t-Statistic | Prob.* |
|--|-------------|--------|
| Augmented Dickey-Fuller test statistic | -7.769740   | 0.0000 |
| Test critical values:                  |             |        |
| 1% level                               | -3.533204   |        |
| 5% level                               | -2.906210   |        |
| 10% level                              | -2.590628   |        |

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



## Lampiran 5 : Estimasi model ARIMA saham SMGR.JK dan INTP.JK

### 1. Model ARIMA (1,0,0) SMGR.JK

Dependent Variable: SMGR  
 Method: Least Squares  
 Date: 06/21/15 Time: 09:07  
 Sample (adjusted): 1/13/2014 4/20/2015  
 Included observations: 67 after adjustments  
 Convergence achieved after 3 iterations

| Variable           | Coefficient | Std. Error            | t-Statistic | Prob.     |
|--------------------|-------------|-----------------------|-------------|-----------|
| C                  | -0.001171   | 0.003767              | -0.310829   | 0.7569    |
| AR(1)              | -0.139805   | 0.121727              | -1.148516   | 0.2550    |
| R-squared          | 0.019890    | Mean dependent var    |             | -0.001253 |
| Adjusted R-squared | 0.004811    | S.D. dependent var    |             | 0.035230  |
| S.E. of regression | 0.035145    | Akaike info criterion |             | -3.829293 |
| Sum squared resid  | 0.080285    | Schwarz criterion     |             | -3.763481 |
| Log likelihood     | 130.2813    | Hannan-Quinn criter.  |             | -3.803251 |
| F-statistic        | 1.319089    | Durbin-Watson stat    |             | 2.096601  |
| Prob(F-statistic)  | 0.254965    |                       |             |           |
| Inverted AR Roots  | -0.14       |                       |             |           |

### 2. Model ARIMA (1,0,0) tanpa konstanta SMGR.JK

Dependent Variable: SMGR  
 Method: Least Squares  
 Date: 06/21/15 Time: 09:07  
 Sample (adjusted): 1/13/2014 4/20/2015  
 Included observations: 67 after adjustments  
 Convergence achieved after 3 iterations

| Variable           | Coefficient | Std. Error            | t-Statistic | Prob.     |
|--------------------|-------------|-----------------------|-------------|-----------|
| AR(1)              | -0.139179   | 0.120874              | -1.151440   | 0.2537    |
| R-squared          | 0.018433    | Mean dependent var    |             | -0.001253 |
| Adjusted R-squared | 0.018433    | S.D. dependent var    |             | 0.035230  |
| S.E. of regression | 0.034903    | Akaike info criterion |             | -3.857658 |
| Sum squared resid  | 0.080404    | Schwarz criterion     |             | -3.824752 |
| Log likelihood     | 130.2315    | Hannan-Quinn criter.  |             | -3.844637 |
| Durbin-Watson stat | 2.094398    |                       |             |           |
| Inverted AR Roots  | -0.14       |                       |             |           |

## 3. Model ARIMA (0,0,1) SMGR.JK

Dependent Variable: SMGR  
 Method: Least Squares  
 Date: 06/21/15 Time: 09:08  
 Sample: 1/06/2014 4/20/2015  
 Included observations: 68  
 Convergence achieved after 8 iterations  
 MA Backcast: 12/30/2013

| Variable           | Coefficient | Std. Error            | t-Statistic | Prob.     |
|--------------------|-------------|-----------------------|-------------|-----------|
| C                  | -0.000882   | 0.003077              | -0.286697   | 0.7752    |
| MA(1)              | -0.275521   | 0.117997              | -2.334984   | 0.0226    |
| R-squared          | 0.041169    | Mean dependent var    |             | -0.000682 |
| Adjusted R-squared | 0.026641    | S.D. dependent var    |             | 0.035282  |
| S.E. of regression | 0.034809    | Akaike info criterion |             | -3.848930 |
| Sum squared resid  | 0.079968    | Schwarz criterion     |             | -3.783650 |
| Log likelihood     | 132.8636    | Hannan-Quinn criter.  |             | -3.823064 |
| F-statistic        | 2.833790    | Durbin-Watson stat    |             | 1.854384  |
| Prob(F-statistic)  | 0.097025    |                       |             |           |
| Inverted MA Roots  | .28         |                       |             |           |

## 4. Model ARIMA (0,0,1) tanpa konstanta SMGR.JK

Dependent Variable: SMGR  
 Method: Least Squares  
 Date: 06/21/15 Time: 09:08  
 Sample: 1/06/2014 4/20/2015  
 Included observations: 68  
 Convergence achieved after 8 iterations  
 MA Backcast: 12/30/2013

| Variable           | Coefficient | Std. Error            | t-Statistic | Prob.     |
|--------------------|-------------|-----------------------|-------------|-----------|
| MA(1)              | -0.271392   | 0.117274              | -2.314171   | 0.0237    |
| R-squared          | 0.039986    | Mean dependent var    |             | -0.000682 |
| Adjusted R-squared | 0.039986    | S.D. dependent var    |             | 0.035282  |
| S.E. of regression | 0.034569    | Akaike info criterion |             | -3.877109 |
| Sum squared resid  | 0.080067    | Schwarz criterion     |             | -3.844469 |
| Log likelihood     | 132.8217    | Hannan-Quinn criter.  |             | -3.864176 |
| Durbin-Watson stat | 1.858793    |                       |             |           |
| Inverted MA Roots  | .27         |                       |             |           |

## 5. Model ARIMA (1,0,1) SMGR.JK

Dependent Variable: SMGR  
 Method: Least Squares  
 Date: 06/21/15 Time: 09:09  
 Sample (adjusted): 1/13/2014 4/20/2015  
 Included observations: 67 after adjustments  
 Convergence achieved after 13 iterations  
 MA Backcast: 1/06/2014

| Variable           | Coefficient | Std. Error            | t-Statistic | Prob.     |
|--------------------|-------------|-----------------------|-------------|-----------|
| C                  | -0.001800   | 0.001282              | -1.403503   | 0.1653    |
| AR(1)              | 0.811690    | 0.082476              | 9.841558    | 0.0000    |
| MA(1)              | -0.980331   | 0.022100              | -44.35951   | 0.0000    |
| R-squared          | 0.082706    | Mean dependent var    |             | -0.001253 |
| Adjusted R-squared | 0.054040    | S.D. dependent var    |             | 0.035230  |
| S.E. of regression | 0.034264    | Akaike info criterion |             | -3.865678 |
| Sum squared resid  | 0.075139    | Schwarz criterion     |             | -3.766961 |
| Log likelihood     | 132.5002    | Hannan-Quinn criter.  |             | -3.826615 |
| F-statistic        | 2.885202    | Durbin-Watson stat    |             | 2.112762  |
| Prob(F-statistic)  | 0.063136    |                       |             |           |
| Inverted AR Roots  | .81         |                       |             |           |
| Inverted MA Roots  | .98         |                       |             |           |

## 6. Model ARIMA (1,0,1) tanpa konstanta SMGR.JK

Dependent Variable: SMGR  
 Method: Least Squares  
 Date: 06/21/15 Time: 09:09  
 Sample (adjusted): 1/13/2014 4/20/2015  
 Included observations: 67 after adjustments  
 Convergence achieved after 7 iterations  
 MA Backcast: 1/06/2014

| Variable           | Coefficient | Std. Error            | t-Statistic | Prob.     |
|--------------------|-------------|-----------------------|-------------|-----------|
| AR(1)              | 0.571290    | 0.264655              | 2.158618    | 0.0346    |
| MA(1)              | -0.784183   | 0.205143              | -3.822610   | 0.0003    |
| R-squared          | 0.058630    | Mean dependent var    |             | -0.001253 |
| Adjusted R-squared | 0.044147    | S.D. dependent var    |             | 0.035230  |
| S.E. of regression | 0.034443    | Akaike info criterion |             | -3.869621 |
| Sum squared resid  | 0.077111    | Schwarz criterion     |             | -3.803809 |
| Log likelihood     | 131.6323    | Hannan-Quinn criter.  |             | -3.843579 |
| Durbin-Watson stat | 1.966342    |                       |             |           |
| Inverted AR Roots  | .57         |                       |             |           |
| Inverted MA Roots  | .78         |                       |             |           |



## 7. Model ARIMA (1,0,0) INTP.JK

Dependent Variable: INTP  
 Method: Least Squares  
 Date: 06/21/15 Time: 09:31  
 Sample (adjusted): 1/13/2014 4/20/2015  
 Included observations: 67 after adjustments  
 Convergence achieved after 3 iterations

| Variable           | Coefficient | Std. Error            | t-Statistic | Prob.     |
|--------------------|-------------|-----------------------|-------------|-----------|
| C                  | 0.001737    | 0.004592              | 0.378139    | 0.7066    |
| AR(1)              | -0.057657   | 0.123085              | -0.468431   | 0.6410    |
| R-squared          | 0.003364    | Mean dependent var    |             | 0.001720  |
| Adjusted R-squared | -0.011968   | S.D. dependent var    |             | 0.039521  |
| S.E. of regression | 0.039757    | Akaike info criterion |             | -3.582674 |
| Sum squared resid  | 0.102739    | Schwarz criterion     |             | -3.516862 |
| Log likelihood     | 122.0196    | Hannan-Quinn criter.  |             | -3.556632 |
| F-statistic        | 0.219427    | Durbin-Watson stat    |             | 2.041982  |
| Prob(F-statistic)  | 0.641044    |                       |             |           |
| Inverted AR Roots  | -0.06       |                       |             |           |

## 8. Model ARIMA (1,0,0) tanpa konstanta INTP.JK

Dependent Variable: INTP  
 Method: Least Squares  
 Date: 06/21/15 Time: 09:31  
 Sample (adjusted): 1/13/2014 4/20/2015  
 Included observations: 67 after adjustments  
 Convergence achieved after 3 iterations

| Variable           | Coefficient | Std. Error            | t-Statistic | Prob.     |
|--------------------|-------------|-----------------------|-------------|-----------|
| AR(1)              | -0.055279   | 0.122123              | -0.452653   | 0.6523    |
| R-squared          | 0.001178    | Mean dependent var    |             | 0.001720  |
| Adjusted R-squared | 0.001178    | S.D. dependent var    |             | 0.039521  |
| S.E. of regression | 0.039498    | Akaike info criterion |             | -3.610333 |
| Sum squared resid  | 0.102965    | Schwarz criterion     |             | -3.577427 |
| Log likelihood     | 121.9462    | Hannan-Quinn criter.  |             | -3.597312 |
| Durbin-Watson stat | 2.041090    |                       |             |           |
| Inverted AR Roots  | -0.06       |                       |             |           |

## 9. Model ARIMA (0,0,1) INTP.JK

Dependent Variable: INTP  
 Method: Least Squares  
 Date: 06/21/15 Time: 09:32  
 Sample: 1/06/2014 4/20/2015  
 Included observations: 68  
 Convergence achieved after 10 iterations  
 MA Backcast: 12/30/2013

| Variable           | Coefficient | Std. Error            | t-Statistic | Prob.     |
|--------------------|-------------|-----------------------|-------------|-----------|
| C                  | 0.002177    | 0.004162              | 0.523016    | 0.6027    |
| MA(1)              | -0.137294   | 0.122123              | -1.124229   | 0.2650    |
| R-squared          | 0.007700    | Mean dependent var    |             | 0.002325  |
| Adjusted R-squared | -0.007335   | S.D. dependent var    |             | 0.039540  |
| S.E. of regression | 0.039685    | Akaike info criterion |             | -3.586710 |
| Sum squared resid  | 0.103944    | Schwarz criterion     |             | -3.521431 |
| Log likelihood     | 123.9481    | Hannan-Quinn criter.  |             | -3.560844 |
| F-statistic        | 0.512131    | Durbin-Watson stat    |             | 1.895478  |
| Prob(F-statistic)  | 0.476742    |                       |             |           |
| Inverted MA Roots  | .14         |                       |             |           |

## 10. Model ARIMA (0,0,1) tanpa konstanta INTP.JK

Dependent Variable: INTP  
 Method: Least Squares  
 Date: 06/21/15 Time: 09:32  
 Sample: 1/06/2014 4/20/2015  
 Included observations: 68  
 Convergence achieved after 9 iterations  
 MA Backcast: 12/30/2013

| Variable           | Coefficient | Std. Error            | t-Statistic | Prob.     |
|--------------------|-------------|-----------------------|-------------|-----------|
| MA(1)              | -0.131577   | 0.121368              | -1.084113   | 0.2822    |
| R-squared          | 0.003600    | Mean dependent var    |             | 0.002325  |
| Adjusted R-squared | 0.003600    | S.D. dependent var    |             | 0.039540  |
| S.E. of regression | 0.039469    | Akaike info criterion |             | -3.611999 |
| Sum squared resid  | 0.104373    | Schwarz criterion     |             | -3.579359 |
| Log likelihood     | 123.8079    | Hannan-Quinn criter.  |             | -3.599066 |
| Durbin-Watson stat | 1.895923    |                       |             |           |
| Inverted MA Roots  | .13         |                       |             |           |

## 11. Model ARIMA (1,0,1) INTP.JK

Dependent Variable: INTP  
 Method: Least Squares  
 Date: 06/21/15 Time: 09:32  
 Sample (adjusted): 1/13/2014 4/20/2015  
 Included observations: 67 after adjustments  
 Convergence achieved after 51 iterations  
 MA Backcast: OFF (Roots of MA process too large)

| Variable                              | Coefficient | Std. Error            | t-Statistic | Prob.     |
|---------------------------------------|-------------|-----------------------|-------------|-----------|
| C                                     | -0.000181   | 0.002379              | -0.076122   | 0.9396    |
| AR(1)                                 | 0.685692    | 0.047961              | 14.29680    | 0.0000    |
| MA(1)                                 | -1.178469   | 0.100773              | -11.69424   | 0.0000    |
| R-squared                             | 0.350347    | Mean dependent var    |             | 0.001720  |
| Adjusted R-squared                    | 0.330045    | S.D. dependent var    |             | 0.039521  |
| S.E. of regression                    | 0.032348    | Akaike info criterion |             | -3.980770 |
| Sum squared resid                     | 0.066970    | Schwarz criterion     |             | -3.882052 |
| Log likelihood                        | 136.3558    | Hannan-Quinn criter.  |             | -3.941707 |
| F-statistic                           | 17.25704    | Durbin-Watson stat    |             | 2.000921  |
| Prob(F-statistic)                     | 0.000001    |                       |             |           |
| Inverted AR Roots                     | .69         |                       |             |           |
| Inverted MA Roots                     | 1.18        |                       |             |           |
| Estimated MA process is noninvertible |             |                       |             |           |

## 12. Model ARIMA (1,0,1) tanpa konstanta INTP.JK

Dependent Variable: INTP  
 Method: Least Squares  
 Date: 06/21/15 Time: 09:33  
 Sample (adjusted): 1/13/2014 4/20/2015  
 Included observations: 67 after adjustments  
 Convergence achieved after 57 iterations  
 MA Backcast: OFF (Roots of MA process too large)

| Variable                              | Coefficient | Std. Error            | t-Statistic | Prob.     |
|---------------------------------------|-------------|-----------------------|-------------|-----------|
| AR(1)                                 | 0.682971    | 0.020736              | 32.93678    | 0.0000    |
| MA(1)                                 | -1.173880   | 0.095903              | -12.24032   | 0.0000    |
| R-squared                             | 0.347237    | Mean dependent var    |             | 0.001720  |
| Adjusted R-squared                    | 0.337195    | S.D. dependent var    |             | 0.039521  |
| S.E. of regression                    | 0.032175    | Akaike info criterion |             | -4.005845 |
| Sum squared resid                     | 0.067291    | Schwarz criterion     |             | -3.940034 |
| Log likelihood                        | 136.1958    | Hannan-Quinn criter.  |             | -3.979803 |
| Durbin-Watson stat                    | 1.995006    |                       |             |           |
| Inverted AR Roots                     | .68         |                       |             |           |
| Inverted MA Roots                     | 1.17        |                       |             |           |
| Estimated MA process is noninvertible |             |                       |             |           |

Lampiran 6 : Data Transformasi *residual*

| SMGR.JK         |                    | INTP.JK         |                    |
|-----------------|--------------------|-----------------|--------------------|
| <i>Residual</i> | tansformasi<br>(u) | <i>Residual</i> | tansformasi<br>(v) |
| 1.118526899     | 0.867089829        | 0.426592829     | 0.604745365        |
| 0.893182804     | 0.814758368        | 0.806108072     | 0.761641754        |
| -1.018001465    | 0.183808965        | -1.034579961    | 0.172570816        |
| -0.948833794    | 0.200110245        | 0.980401458     | 0.821667008        |
| 1.276573715     | 0.894529237        | -1.282086671    | 0.126573459        |
| 0.158255563     | 0.544611672        | 0.517154561     | 0.64347999         |
| 0.502220813     | 0.684924152        | 0.513911811     | 0.642096404        |
| 0.008140144     | 0.484206118        | -0.45702955     | 0.303193825        |
| 0.602118962     | 0.722262805        | -0.078944643    | 0.411377188        |
| 1.481721177     | 0.909614516        | 1.664248274     | 0.921973232        |
| -0.706110974    | 0.260289968        | -0.298970451    | 0.345270357        |
| 0.587388733     | 0.717007276        | -0.089130831    | 0.408042383        |
| 1.657315396     | 0.919846634        | 0.98099896      | 0.821849898        |
| -1.918518877    | 0.036848138        | -1.592189637    | 0.086739489        |
| 0.461942846     | 0.669063639        | 0.905410612     | 0.797118554        |
| -0.087958472    | 0.447595563        | -0.944973556    | 0.19085794         |
| -2.114260602    | 2.01E-14           | -1.581032866    | 0.087786491        |
| -0.12732943     | 0.433202877        | 0.280349162     | 0.543502023        |
| 2.169292144     | 0.95056946         | 1.990576687     | 0.942662167        |
| -1.154886599    | 0.153064536        | -0.328922414    | 0.336901477        |
| -0.86253065     | 0.221046603        | -0.898788089    | 0.200640046        |
| 0.963175827     | 0.832779224        | 1.01230712      | 0.83143307         |
| 0.461967483     | 0.66907334         | 1.532615268     | 0.913999781        |
| -0.816478596    | 0.23242543         | -1.349116       | 0.115447947        |
| -0.09038436     | 0.4466881          | -1.000979896    | 0.179341377        |
| 0.290256217     | 0.599287091        | 0.881116644     | 0.788908222        |
| 2.895428929     | 1                  | 2.695991275     | 1                  |
| 0.859730684     | 0.80535104         | 0.860970149     | 0.781590354        |
| 0.027083878     | 0.491602728        | -0.525222572    | 0.286113499        |
| 0.030449161     | 0.492916708        | 0.38734997      | 0.588128531        |
| -0.545250441    | 0.302739576        | -0.46490764     | 0.301176747        |
| 0.28277581      | 0.596193969        | 0.722586164     | 0.729165732        |
| 0.665363309     | 0.744697633        | 1.089388833     | 0.853339298        |
| -0.81841932     | 0.231945904        | -0.769940192    | 0.228737844        |
| 0.079675204     | 0.512593155        | 0.039727492     | 0.451503482        |
| -1.042822675    | 0.178061343        | -0.94448058     | 0.19095931         |
| 0.751524655     | 0.773093558        | 0.832860428     | 0.771379981        |

| SMGR.JK         |                    | INTP.JK         |                    |
|-----------------|--------------------|-----------------|--------------------|
| <i>Residual</i> | tansformasi<br>(u) | <i>Residual</i> | tansformasi<br>(v) |
| -2.005109683    | 0.023150225        | -1.96271303     | 0.050343197        |
| -1.474010343    | 0.094621275        | -1.717407376    | 0.074820881        |
| 0.086674475     | 0.515416981        | 0.604771717     | 0.680673878        |
| 2.217581156     | 0.95355676         | 0.763158056     | 0.745023606        |
| 0.414537436     | 0.650217442        | 1.029612741     | 0.836730179        |
| 0.084859199     | 0.514684615        | 0.245720543     | 0.529577154        |
| -1.028768063    | 0.181277757        | -1.209098999    | 0.139365024        |
| 1.014317602     | 0.844746068        | 1.420883681     | 0.90736585         |
| 0.512761515     | 0.688960525        | 0.396116188     | 0.591840462        |
| -0.025324437    | 0.471139821        | 0.522068161     | 0.645576477        |
| 1.000931381     | 0.841641065        | 0.855842423     | 0.779727796        |
| 0.238347144     | 0.577749624        | 0.246791217     | 0.53000551         |
| -0.900454982    | 0.211798608        | -0.348105898    | 0.331736576        |
| 0.017452088     | 0.487841981        | 0.604948964     | 0.680748195        |
| 0.208242044     | 0.565241515        | 0.286181579     | 0.54591556         |
| -0.742907963    | 0.25090452         | -0.42705526     | 0.310868335        |
| -1.589297353    | 0.080793038        | -2.109399149    | 0.034640898        |
| -1.424988208    | 0.100488188        | 0.540702696     | 0.653527282        |
| -0.144715776    | 0.427020408        | -0.148871581    | 0.389262041        |
| 0.382823244     | 0.637337277        | 0.387177993     | 0.58805571         |
| -0.525127755    | 0.308258518        | -0.105653481    | 0.402650969        |
| 0.485895929     | 0.678495798        | 0.234376339     | 0.525038555        |
| 0.394838466     | 0.64221705         | 0.461915755     | 0.619858948        |
| 0.272012864     | 0.591737106        | 0.37405013      | 0.582496902        |
| -1.353550829    | 0.113169994        | -2.373484598    | 3.15E-15           |
| -1.209843531    | 0.141397262        | -1.066943021    | 0.166160958        |
| -1.037487639    | 0.179272762        | -0.835931624    | 0.214178145        |
| 0.077982653     | 0.511910303        | 0.377402178     | 0.583916279        |
| -0.333468127    | 0.364049259        | 0.474899761     | 0.625415315        |
| 0.739322297     | 0.769321857        | -0.158436242    | 0.386298918        |
| 0.002937032     | 0.482174555        | 0.420618901     | 0.60221579         |

## Lampiran 7 : Script MATLAB

### a. M-File

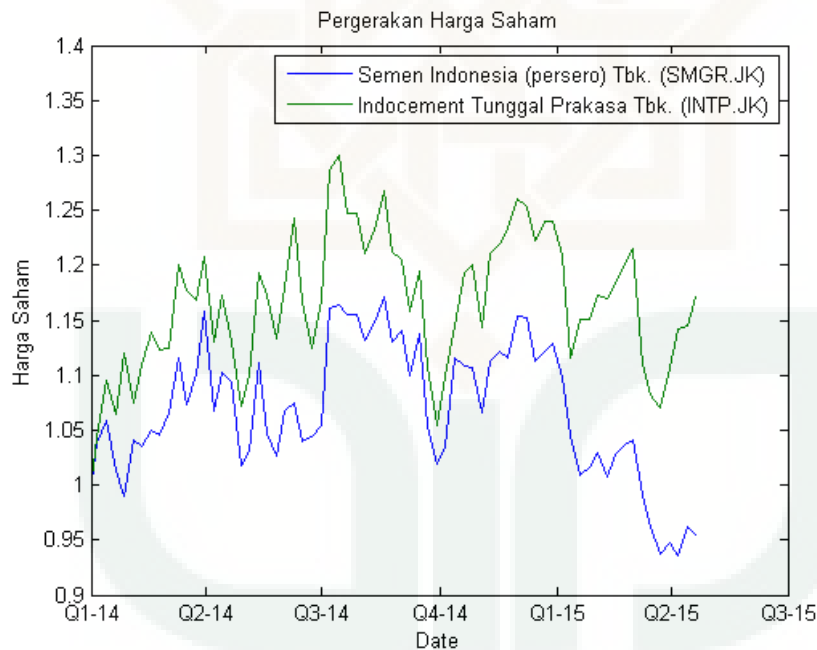
Authorized by Dimas Prabawan Aji Putra

```
load('last.mat') % Import data closing price
warning('off','all')
```

Plot pergerakan data harga penutupan harian masing masing saham.

```
figure
plot(Date, ret2price(price2ret(Close)))
datetick('x'),xlabel('Date'),ylabel('Harga Saham')
title ('Pergerakan Harga Saham')
legend(Series, 'Location', 'NorthEast')

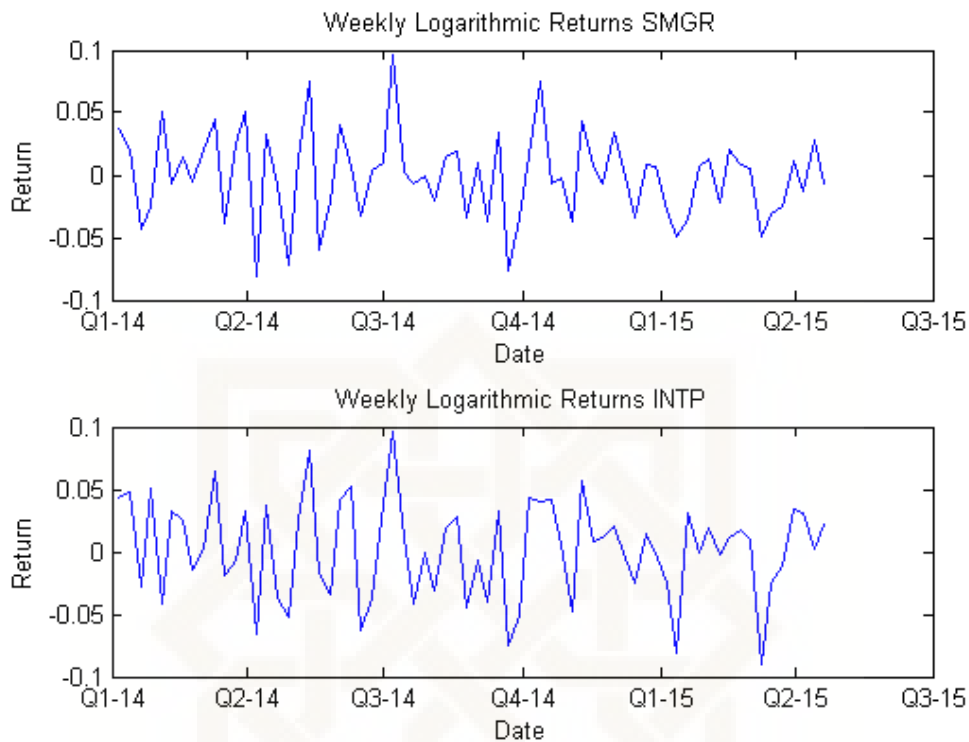
% Perhitungan return menggunakan pendekatan logaritma natural
returns = price2ret(Close);
T       = size(returns,1); % banyak data return
```



Plot masing-masing *return* saham SMGR.JK dan INTP.JK

```
stock = 1; % 1 = SMGR, 2 = INTP,

figure, subplot(2,1,1)
plot(Date(2:end), returns(:,1)), datetick('x')
xlabel('Date'), ylabel('Return'), title('Weekly Logarithmic Returns SMGR')
subplot(2,1,2)
plot(Date(2:end), returns(:,2)), datetick('x')
xlabel('Date'), ylabel('Return'), title('Weekly Logarithmic Returns INTP')
```



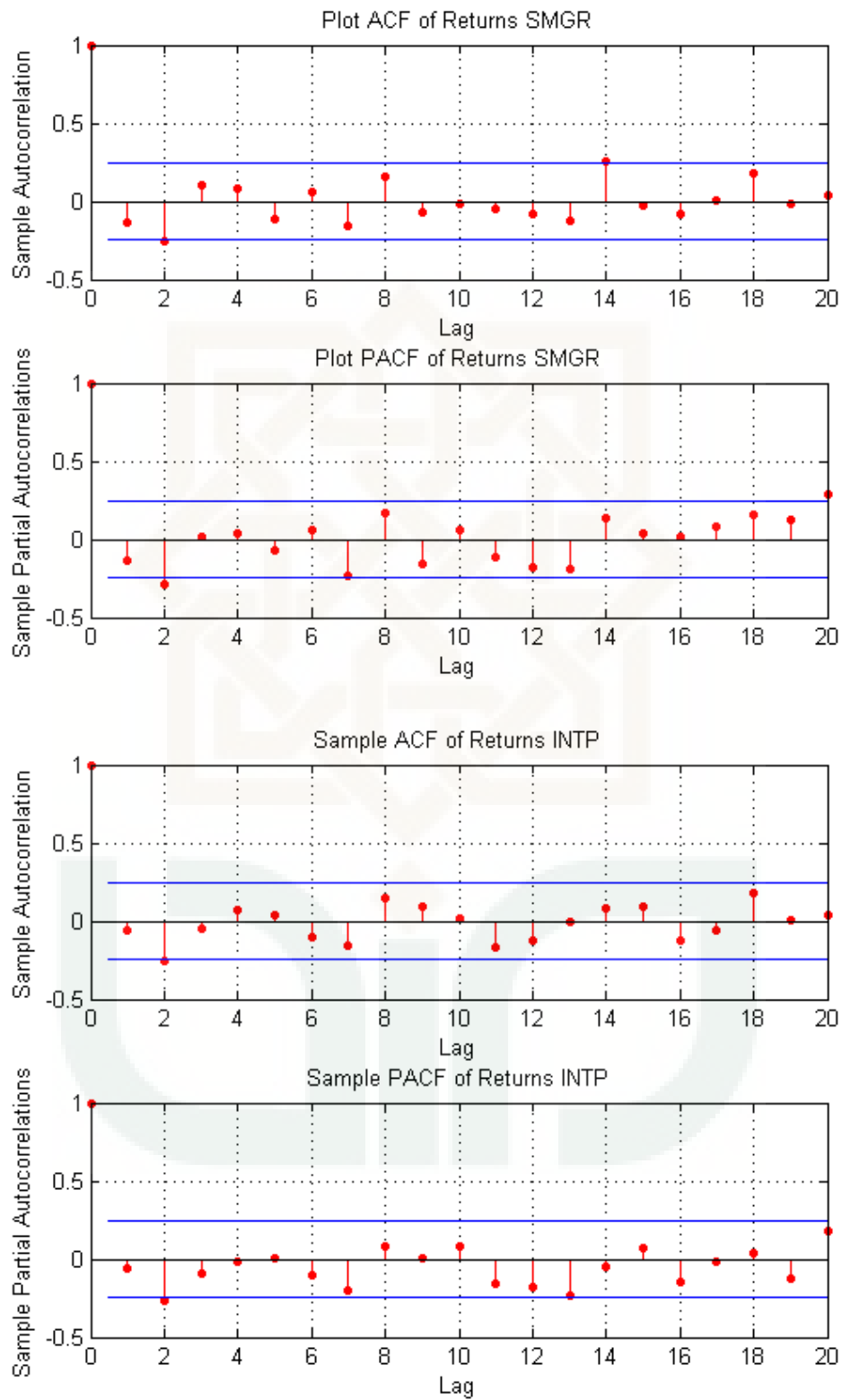
Plot ACF dan PACF *return* saham SMGR dan INTP.JK

```

figure, subplot(2,1,1),autocorr(returns(:,1))
title('Plot ACF of Returns SMGR')
subplot(2,1,2),parcorr(returns(:,1)),title('Plot PACF of Returns SMGR')
figure, subplot(2,1,1),autocorr(returns(:,2))
title('Sample ACF of Returns INTP')
subplot(2,1,2),parcorr(returns(:,2)),title('Sample PACF of Returns INTP')
%%Pemodelan ARIMA-GARCH
% untuk memperoleh residual dan variansi dari masing-masing model saham
model1 = arima('MA',NaN,'Variance',garch(0,0));
model2 = arima('AR',NaN,'MA',NaN,'Variance',garch(0,0));
i = size(returns,2);
residuals = NaN(T, i);
variances = NaN(T, i);
fit = cell(i,1);
options = optimset('fmincon');
options = optimset(options, 'Display' , 'off', 'Diagnostics', 'off', ...
'Algorithm', 'sqp', 'TolCon' , 1e-7);

fit{1} = estimate(model1,returns(:,1), 'print', false, 'options', options);
[residuals(:,1), variances(:,1)] = infer(fit{1}, returns(:,1));
fit{2} = estimate(model2,returns(:,2), 'print', false, 'options', options);
[residuals(:,2), variances(:,2)] = infer(fit{2}, returns(:,2));

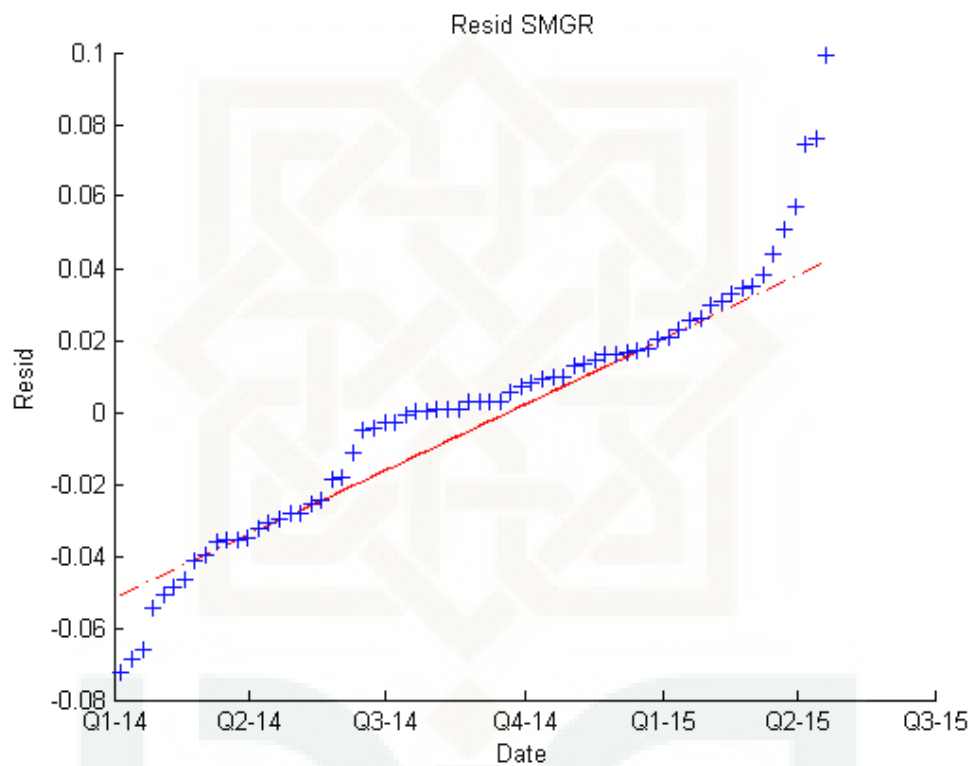
```

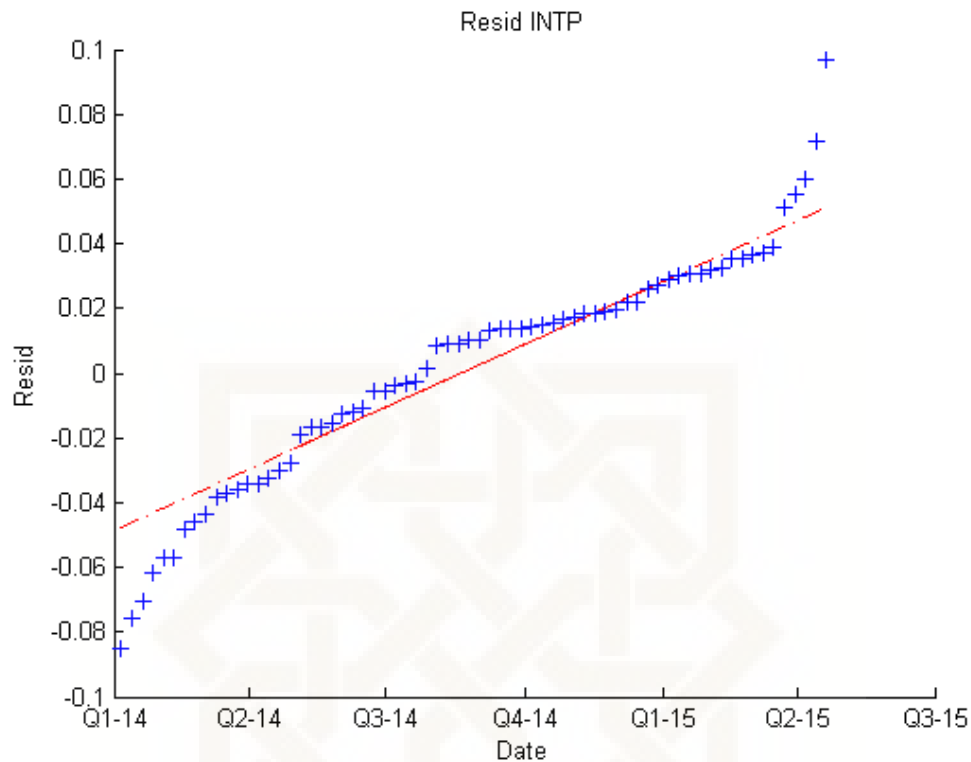




## QQ-PLOT

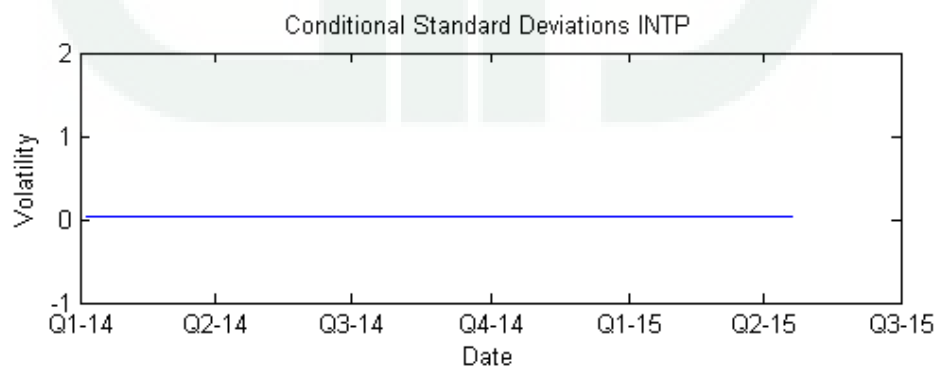
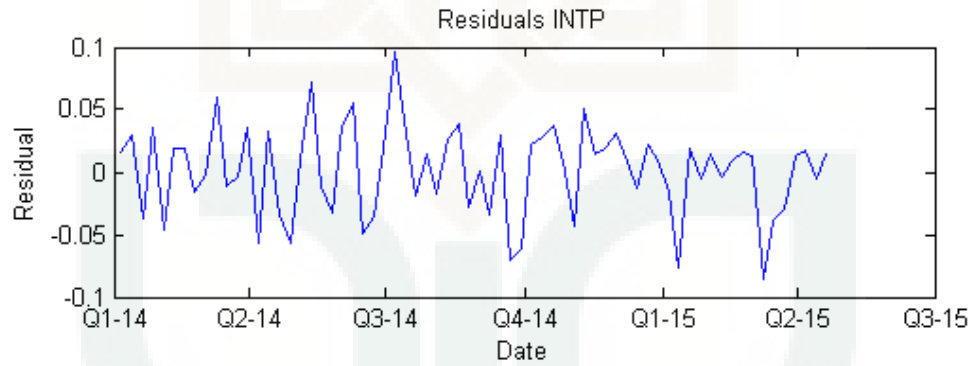
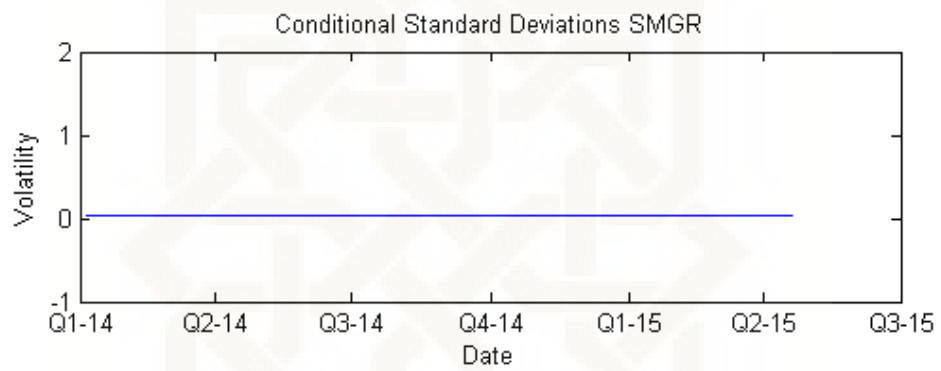
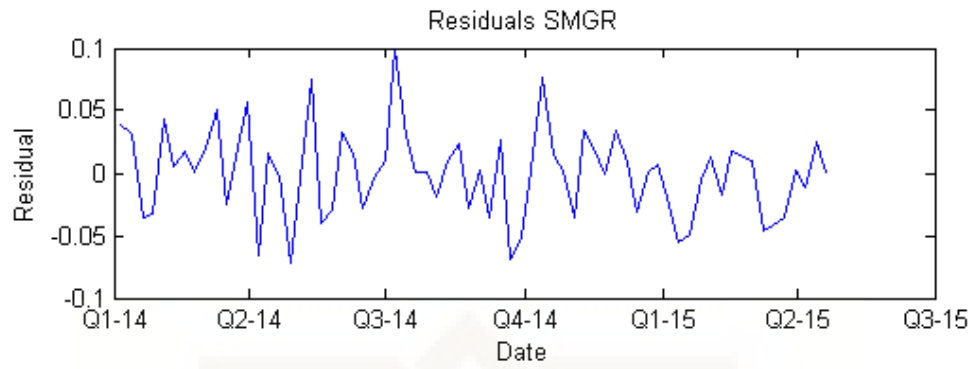
```
figure
qqplot(Date(2:end), residuals(:,1)), datetick('x')
xlabel('Date'), ylabel('Resid'), title('Resid SMGR')
figure
qqplot(Date(2:end), residuals(:,2)), datetick('x')
xlabel('Date'), ylabel('Resid'), title('Resid INTP')
```

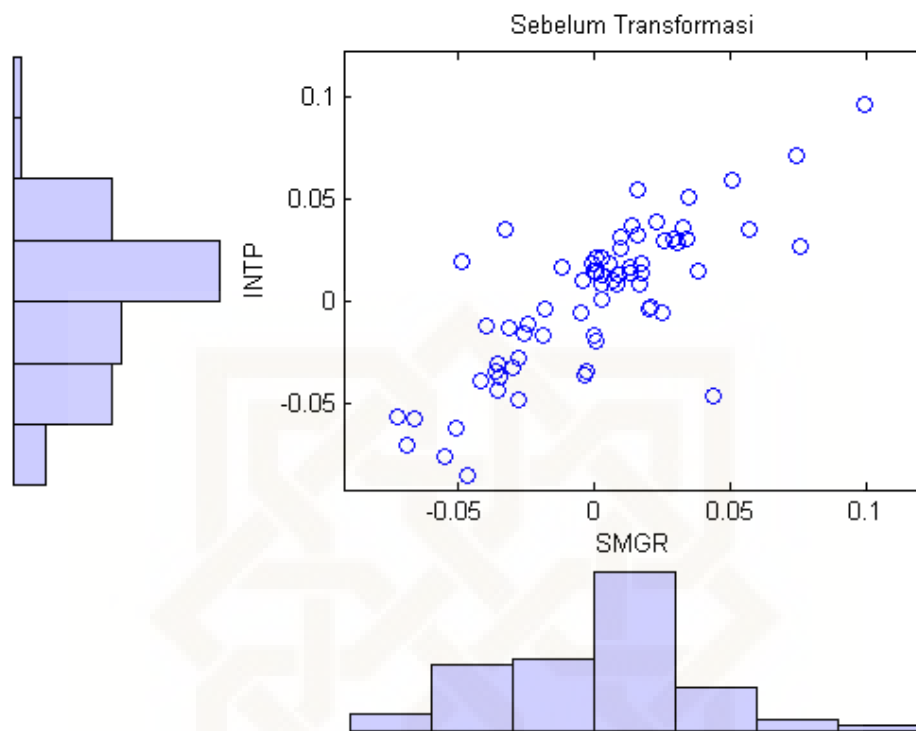




Plot data residual dan volatilitas saham SMGR.JK dan INTP.JK

```
figure, subplot(2,1,1),plot(Date(2:end), residuals(:,1))
datetick('x'),xlabel('Date'), ylabel('Residual')
title ('Residuals SMGR')
subplot(2,1,2),plot(Date(2:end), sqrt(variances(:,1)))
datetick('x'),xlabel('Date'), ylabel('Volatility')
title ('Conditional Standard Deviations SMGR')
figure, subplot(2,1,1)
plot(Date(2:end), residuals(:,2))
datetick('x'),xlabel('Date'), ylabel('Residual')
title ('Residuals INTP')
subplot(2,1,2)
plot(Date(2:end), sqrt(variances(:,2)))
datetick('x'),xlabel('Date'), ylabel('Volatility')
title ('Conditional Standard Deviations INTP')
figure
scatterhist(residuals(:,1),residuals(:,2))
xlabel('SMGR'), ylabel('INTP'), title('Sebelum Transformasi')
residuals = residuals ./ sqrt(variances);
```





### Transformasi marginal ke *uniform* dan estimasi parameter

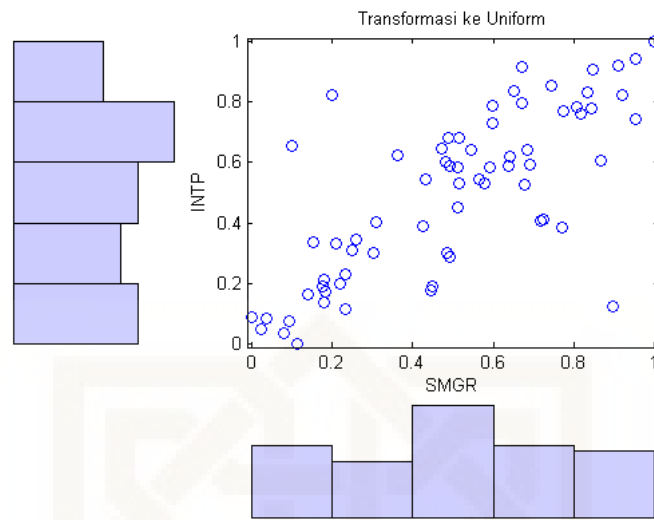
```

Fraction = 0.1;
OBJ = cell(i,1);
for a = 1:i
    OBJ{a} = paretotails(residuals(:,a),Fraction,1-Fraction,'kernel');
end
U = zeros(size(residuals));
for a = 1:i
    U(:,a) = OBJ{a}.cdf(residuals(:,a)); % transform marginal ke uniform
end
figure
scatterhist(U(:,1),U(:,2))
xlabel('SMGR'), ylabel('INTP'), title('Transformasi ke Uniform')
tau = corr(residuals(:,1),residuals(:,2),'type','kendall')
theta = copulaparam('frank',tau)

```

tau = 0.5672

theta = 7.1128

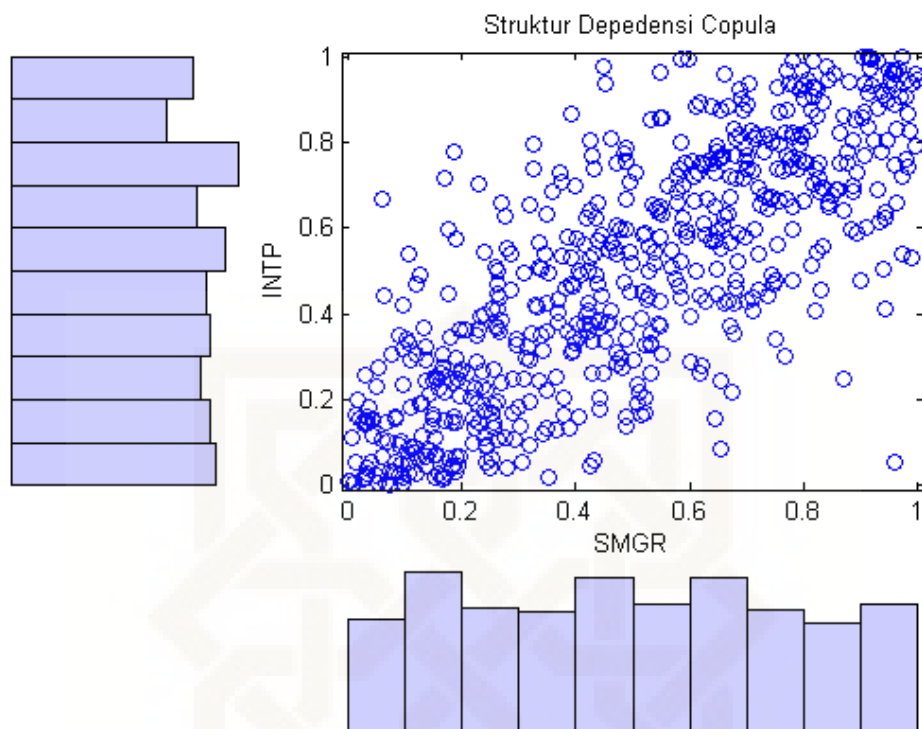


### Simulasi Monte-Carlo Pasangan Saham Frank Copula

```

s = RandStream.getGlobalStream(); reset(s)
M = 600;                               % perulangan
t = 1;                                  % VaR pada t=1 (mingguan)
Z = zeros(t,M,i);
U = copularnd('frank',theta,t*M);       % frank copula simulation
figure
scatterhist(U(:,1), U(:,2))
xlabel('SMGR'), ylabel('INTP'), title('Struktur Depedensi Copula')
for j = 1:i
    Z(:, :, j) = reshape(OBJ{j}.icdf(U(:,j)),t, M);
end

```



Membentuk *return* simulasi pasangan saham SMGR.JK dan INTP.JK

```

Y0 = returns(end,:);
Z0 = residuals(end,:);
V0 = variances(end,:);
simulReturns = zeros(t, M, i);
for a = 1:i
    simulReturns(:, :, a) = filter(fit{a}, Z(:, :, a), ...
                                'y0', Y0(a), 'z0', Z0(a), 'v0', V0(a));
end

```

Merubah dimensi matriks *return* simulasi

```
simulReturns = permute(simulReturns, [1 3 2]);
```

Menghitung *returns* kumulatif

```

cumulativeReturns = zeros(M, 1);
weights            = repmat(1/i, i, 1); %proporsi portfolio(Copula seimbang)
for a = 1:M
    cumulativeReturns(a)=sum(simulReturns(:, :, a)* weights);
end

```

## Perhitungan VaR

```

var = 100 * quantile(cumulativeReturns, [0.10 0.05 0.01]);
disp('Value at Risk Monte Carlo-Frank Copula ')
fprintf('Simulasi Kerugian Maksimal : %8.4f%%\n' , -100*min(cumulativeReturns),
'%')
fprintf('Simulasi Keuntungan Maksimal: %8.4f%%\n\n' , 100*max(cumulativeReturns),
'%')
fprintf('    Simulasi 90% VaR: %8.4f%%\n' , var(1), '%')
fprintf('    Simulasi 95% VaR: %8.4f%%\n' , var(2), '%')
fprintf('    Simulasi 99% VaR: %8.4f%%\n\n' , var(3), '%')
figure
h = cdfplot(cumulativeReturns);
set(h, 'Color', 'Red');
xlabel('Logarithmic Return')
ylabel('Probability')
title('Simulasi Return Pasangan Saham SMGR dan INTP Selama Satu Minggu')

```

Value at Risk Monte Carlo-Frank Copula

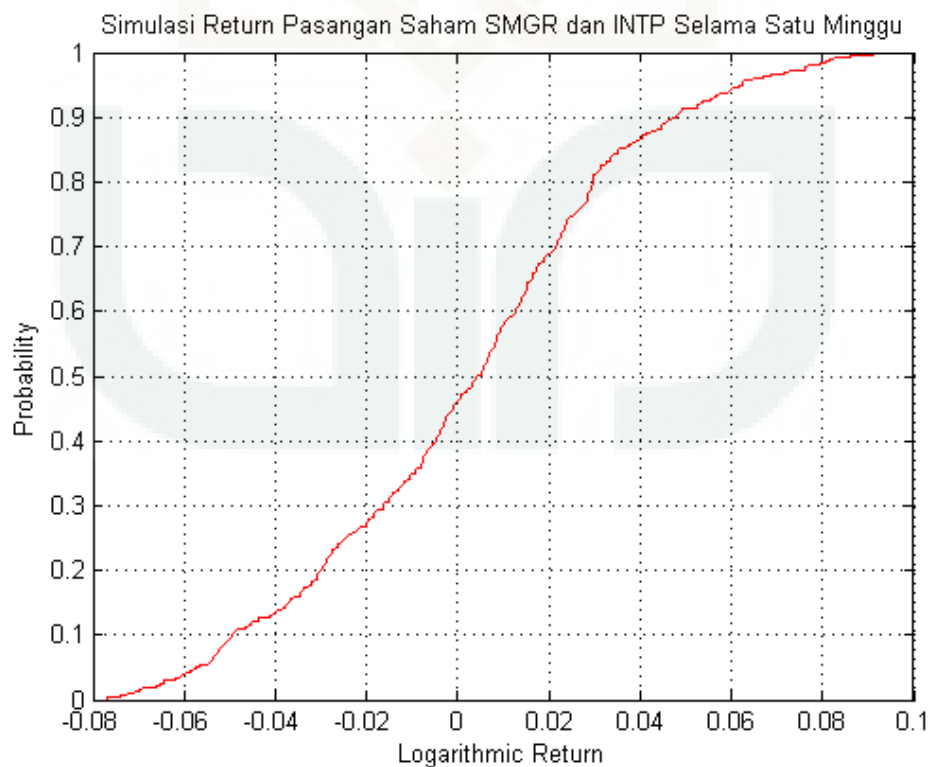
Simulasi kerugian Maksimal : 7.6787%

Simulasi Keuntungan Maksimal: 9.2115%

Simulasi 90% VaR: -4.9362%

Simulasi 95% VaR: -5.7440%

Simulasi 99% VaR: -7.1643%



## a. Data cumulative return

| Cumulative Return dengan M = 600 |          |          |          |          |          |
|----------------------------------|----------|----------|----------|----------|----------|
| 0.048763                         | -0.03199 | 0.021099 | -0.01788 | 0.001469 | 0.01892  |
| 0.046161                         | 0.045508 | -0.02298 | 0.010864 | -0.04997 | 0.013098 |
| -0.0179                          | -0.01998 | 0.037298 | -0.06593 | 0.054602 | 0.008656 |
| 0.056201                         | 0.006159 | -0.00779 | -0.05305 | -0.00693 | -0.00743 |
| 0.017785                         | -0.05723 | -0.02743 | -0.0129  | 0.024574 | 0.002691 |
| -0.03058                         | 0.003782 | 0.062271 | -0.03718 | 0.023794 | -0.02945 |
| -0.00413                         | -0.01477 | 0.035122 | 0.030143 | 0.013931 | 0.038957 |
| 0.046522                         | 0.013814 | 0.012859 | 0.064493 | -0.07146 | 0.014294 |
| 0.008206                         | 0.033519 | 0.021108 | 0.021273 | -0.06988 | 0.008373 |
| 0.086218                         | 0.014273 | 0.014172 | -0.03143 | -0.01615 | 0.021909 |
| -0.03063                         | 0.034352 | -0.01871 | 0.008004 | -0.00281 | 0.000551 |
| 0.092144                         | -0.04542 | -0.0262  | 0.003564 | 0.023025 | 0.011493 |
| 0.062535                         | -0.01735 | 0.00851  | 0.057488 | -0.00774 | 0.012826 |
| 0.00322                          | 0.076403 | -0.00073 | 0.02353  | 0.048561 | 0.022796 |
| 0.039176                         | -0.04357 | 0.055684 | 0.048993 | 0.028667 | 0.009899 |
| -0.04892                         | 0.031224 | -0.05173 | -0.00357 | 0.068881 | 0.066073 |
| -0.00226                         | 0.007464 | -0.03036 | 0.00381  | -0.00317 | -0.04011 |
| 0.072437                         | 0.090911 | -0.03775 | 0.028324 | 0.006875 | -0.02832 |
| 0.031376                         | -0.03435 | -0.01837 | -0.04583 | -0.05283 | -0.03112 |
| 0.083581                         | -0.01847 | 0.001774 | -0.02411 | 0.028543 | -0.02786 |
| 0.023502                         | -0.05757 | -0.00469 | -0.02898 | 0.021725 | -0.022   |
| -0.05295                         | 0.059864 | 0.04746  | -0.01089 | -0.00593 | -0.01166 |
| 0.029651                         | -0.07674 | -0.01232 | 0.029088 | -0.06442 | -0.0273  |
| 0.062336                         | 0.02854  | -0.05288 | 0.029768 | -0.01513 | 0.026789 |
| 0.004635                         | 0.028514 | 0.059204 | -0.05424 | -0.05029 | 0.006973 |
| 0.029335                         | 0.02972  | 0.061101 | -0.00904 | -0.04618 | 0.048023 |
| 0.02887                          | -0.06019 | -0.00384 | 0.008719 | 0.005544 | 0.041704 |
| 0.001403                         | 0.00915  | -0.03985 | 0.004047 | 0.003338 | 0.049857 |
| 0.029776                         | -0.01469 | -0.03204 | 0.016293 | 0.005344 | -0.02791 |
| -0.00433                         | 0.029786 | 0.00044  | 0.014045 | 0.03636  | -0.02648 |
| 0.028696                         | 0.012377 | 0.012601 | -0.03406 | 0.009621 | 0.016885 |
| -0.0538                          | 0.034535 | -0.0359  | -0.03429 | 0.035721 | -0.05978 |
| -0.00101                         | -0.02183 | 0.020537 | -0.06903 | 0.029675 | 0.002922 |
| -0.0513                          | -0.01198 | 0.009443 | 0.065606 | 0.080642 | -0.00151 |
| -0.06593                         | -0.03427 | -0.03384 | -0.02767 | -0.01437 | 0.037427 |
| 0.022059                         | -0.05274 | -0.05244 | -0.01743 | 0.027688 | 0.016501 |
| 0.0316                           | 0.040565 | -0.01516 | 0.008984 | -0.02142 | -0.0014  |
| -0.01423                         | 0.006578 | -0.03406 | -0.03069 | 0.021752 | 0.005602 |
| 0.08058                          | -0.00406 | -0.0048  | -0.0042  | 0.022738 | 0.02264  |



| Cumulative Return dengan M = 600 |          |          |          |           |          |
|----------------------------------|----------|----------|----------|-----------|----------|
| -0.06911                         | -0.04945 | -0.01096 | -0.00265 | -0.04895  | -0.01592 |
| 0.000858                         | 0.059824 | -0.06433 | 0.076069 | -0.03031  | -0.01005 |
| -0.00254                         | -0.00265 | -0.01025 | 0.062822 | -0.03556  | -0.03835 |
| 0.005542                         | -0.01966 | 0.025788 | -0.04333 | 0.017802  | 0.054239 |
| 0.03262                          | -0.01678 | -0.05343 | 0.012454 | 0.028558  | -0.00916 |
| -0.03578                         | -0.00599 | 0.079711 | -0.01335 | -0.00069  | -0.055   |
| -0.02002                         | -0.06916 | 0.022622 | -0.00316 | 0.06229   | 0.044975 |
| -0.00019                         | -0.0072  | 0.00888  | 0.0003   | -0.00506  | -0.04015 |
| 0.008618                         | -0.05395 | 0.017862 | 0.044929 | -0.05941  | -0.00343 |
| 0.010862                         | -0.05247 | -0.02635 | 0.006837 | -0.00285  | 0.040676 |
| 0.018869                         | -0.03086 | 0.005336 | 0.061036 | 0.003272  | 0.006295 |
| -0.0345                          | -0.00393 | 0.052109 | -0.03014 | 0.076886  | 0.029673 |
| 0.011482                         | -0.07042 | 0.023892 | 0.025344 | -0.07678  | -0.00157 |
| -0.00399                         | 0.073224 | -0.00362 | 0.031009 | 0.017298  | 0.01659  |
| -0.02904                         | 0.053662 | -0.03375 | 0.008762 | -0.03729  | 0.04546  |
| -0.04936                         | -0.00176 | 0.011918 | 0.026036 | 0.006257  | -0.01632 |
| 0.005845                         | -0.018   | 0.015031 | 0.00861  | 0.035136  | -0.04979 |
| 0.074818                         | -0.01871 | 0.026376 | -0.00909 | -0.01192  | -0.00738 |
| -0.01096                         | 0.02584  | -0.00817 | -0.03763 | 0.048452  | 0.007776 |
| 0.01297                          | -0.0075  | -0.01624 | 0.087445 | 0.014914  | -0.02329 |
| -0.02769                         | -0.03116 | 0.053454 | -0.05781 | -0.05144  | -0.01965 |
| 0.01493                          | 0.031568 | -0.04921 | -0.04347 | -0.05013  | 0.048088 |
| -0.02189                         | -0.02545 | 0.038767 | 0.016206 | 0.016318  | -0.00708 |
| 0.015397                         | -0.04647 | 0.046057 | 0.029064 | -0.00893  | 0.042045 |
| 0.032655                         | 0.003978 | 0.032598 | 0.0195   | -0.05924  | 0.01758  |
| 0.0357                           | -0.0246  | -0.06421 | -0.03673 | -0.0295   | 0.028604 |
| 0.054879                         | -0.0373  | -0.02763 | -0.00629 | 0.016548  | -0.01041 |
| 0.010547                         | 0.045309 | -0.00277 | -0.00134 | -0.00913  | 0.034104 |
| -0.0323                          | 0.081501 | 0.024325 | 0.067367 | 0.02156   | 0.023182 |
| -0.03898                         | 0.007331 | -0.05628 | -0.04986 | -0.02643  | 0.000837 |
| -0.03329                         | -0.06102 | 0.012425 | 0.030648 | 0.077137  | -0.02989 |
| 0.063342                         | -0.01507 | -0.06178 | -0.01171 | -0.0002   | 0.029356 |
| -0.04471                         | -0.04539 | -0.02013 | 0.008329 | 0.031337  | 0.070779 |
| 0.020166                         | 0.015431 | 0.002521 | -0.0244  | -1.20E-05 | 0.009717 |
| -0.03954                         | -0.05317 | 0.032082 | 0.013698 | -0.00811  | 0.015182 |
| 0.043663                         | -0.051   | 0.028049 | -0.00916 | -0.05169  | 0.0092   |
| -0.00609                         | -0.03224 | 0.044701 | -0.01956 | 0.015145  | 0.04029  |
| -0.02667                         | 0.022701 | 0.029769 | 0.019889 | 0.013814  | 0.056922 |
| -0.04856                         | 0.029078 | -0.00748 | -0.02257 | 0.003466  | -0.05844 |
| 0.029639                         | 0.024157 | 0.010073 | -0.00789 | 0.003057  | 0.03401  |
| 0.008529                         | -0.0062  | -0.0473  | 0.005451 | 0.017556  | 0.083568 |

| Cumulative Return dengan M = 600 |          |          |          |          |           |
|----------------------------------|----------|----------|----------|----------|-----------|
| -0.0023                          | 0.013567 | -0.0731  | -0.0128  | 0.015246 | -6.10E-05 |
| 0.018521                         | -0.01432 | 0.015222 | -0.02789 | 0.022009 | 0.033611  |
| 0.022165                         | 0.02307  | -0.00694 | -0.00419 | 0.022217 | 0.017306  |
| 0.024197                         | -0.05433 | -0.00743 | -0.01062 | 0.060089 | -0.03058  |
| 0.077071                         | 0.027391 | 0.039935 | 0.037153 | -0.02581 | -0.0256   |
| -0.00439                         | -0.0372  | 0.009688 | 0.084254 | 0.024097 | 0.000783  |
| 0.033963                         | -0.00452 | 0.007066 | 0.027267 | -0.02361 | 0.007119  |
| 0.026425                         | 0.021133 | 0.031    | -0.01327 | -0.0607  | 0.029694  |
| -0.01967                         | 0.016591 | 0.052766 | 0.009489 | 0.019068 | 0.028422  |
| 0.008321                         | -0.06445 | 0.016207 | -0.0288  | 0.044941 | -0.02373  |
| -0.06512                         | 0.053889 | -0.02921 | 0.040472 | -0.00295 | 0.013119  |
| -0.07178                         | 0.027822 | -0.03679 | 0.056752 | 0.049881 | -0.02958  |
| 0.023097                         | 0.015687 | 0.03337  | 0.041337 | 0.024218 | -0.05073  |
| 0.023946                         | 0.007524 | -0.07387 | -0.00744 | 0.003507 | -0.0288   |
| 0.049185                         | 0.006438 | 0.017426 | 0.01303  | 0.017391 | 0.008856  |
| -0.04498                         | -0.04234 | -0.02539 | -0.05332 | -0.00537 | 0.01385   |
| 0.010067                         | -0.01443 | 0.071898 | 0.015351 | 0.027974 | -0.04811  |
| 0.006062                         | -0.01232 | 0.018323 | -0.01618 | 0.023331 | 0.006762  |
| -0.07669                         | 0.042528 | -0.00702 | -0.0573  | -0.02863 | -0.04111  |
| 0.000102                         | 0.058021 | 0.00556  | -0.01613 | 0.019732 | -0.03954  |