

**ESTIMASI VALUE AT RISK (VaR) DENGAN
METODE SIMULASI MONTE CARLO - COPULA GUMBEL
(Studi Kasus : Saham Syariah yang Tergabung dalam *Jakarta Islamic
Index* (JII) Periode 1 Januari 2014 – 13 Maret 2015)**

Skripsi

Untuk memenuhi sebagian persyaratan guna
Mencapai derajat sarjana S-1
Program Studi Matematika



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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.

Yogyakarta, 17 Juni 2015

Yang menyatakan,

Annisa Damasari
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HALAMAN PERSEMBAHAN



ALLAH SWT

Ibukku tercantik ETIK MAFRUKHAH

Bapakku tersabar DADIT DWI ANTORO

My annoying sister NABILLA YULIANDRINI

MOTTO

“Kalau kamu berbuat baik, sebetulnya kamu berbuat baik untuk dirimu. Dan jika

kamu berbuat buruk, berarti kamu telah berbuat buruk atas dirimu”

Q.S. Al-Isra : 7

“Never give up, today is hard, tomorrow will be worse, but the day after

tomorrow will be sunshine”

-Jack Ma-

“I am not an optimist, but a great believer of hope”

-Nelson Mandela-

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Penelitian ini dalam rangka memenuhi salah satu syarat untuk mencapai gelar S1 pada Fakultas Sains dan Teknologi Universitas Islam Negeri Sunan Kalijaga. Peneliti menyadari bahwa tanpa bantuan dan bimbingan dari berbagai pihak, dari masa perkuliahan sampai pada penyusunan skripsi ini, sangatlah sulit bagi peneliti untuk menyelesaikan skripsi ini. Oleh karena itu, dengan kerendahan hati peneliti mengucapkan rasa terima kasih yang sedalam-dalamnya kepada :

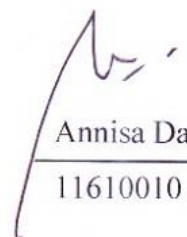
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$E(x)$: nilai ekspektasi
μ	: <i>mean</i>
σ^2	: variansi
σ	: standar deviasi
R_t	: <i>return</i> harga saham pada periode t
R_{pt}	: <i>return</i> portofolio harga saham pada periode t
P_t	: harga saham pada saat t
P_{t-1}	: harga saham pada saat $t - 1$
P	: probabilitas
ε_t	: nilai kesalahan (residual) pada saat t
c	: nilai konstanta
y_t	: variabel y pada saat t
\bar{y}	: nilai rata-rata (<i>mean</i>)
λ	: parameter transformasi
A_p	: parameter <i>autoregressive</i> ke- p
B_q	: parameter <i>moving average</i> ke- q
C	: copula
$C(u, v)$: fungsi copula bivariat
Ko	: konkordan
Di	: diskordan
S	: <i>skewness</i>

- K : *kurtosis*
- φ : generator
- φ^{-1} : invers dari generator φ
- u : residual saham WIKA.JK yang berdistribusi $U(0,1)$
- v : residual saham PTPP.JK. yang berdistribusi $U(0,1)$
- τ : fungsi Kendall's Tau
- τ_A : fungsi Kendall's Tau copula *Archimedean*
- τ_G : fungsi Kendall's Tau copula *Gumbel*
- k_t : invers *log-return* saham WIKA.JK pada waktu ke t
- l_t : invers *log-return* saham PTPP.JK pada waktu ke t
- θ : parameter copula *Gumbel*
- H : fungsi distribusi gabungan
- F dan G : fungsi distribusi marginal

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11610010**

ABSTRAK

Investasi merupakan salah satu cara yang banyak dilakukan orang untuk memperoleh keuntungan di masa mendatang. Keuntungan optimal dengan risiko yang minimal merupakan keinginan semua investor. Risiko tidak dapat dihindari namun dapat dikelola dan diperkirakan menggunakan alat ukur *Value at Risk* (VaR). Akan tetapi VaR memiliki asumsi distribusi normalitas yang jarang dimiliki oleh data keuangan runtun waktu. Copula merupakan suatu metode yang tidak memiliki asumsi normalitas. Copula mencakup distribusi gabungan (*joint distributions*) dari masing-masing variabel, sehingga copula merupakan suatu alat yang cocok untuk memodelkan variabel yang memiliki dependensi. Untuk mendapatkan hasil *return* yang tinggi dapat digunakan salah satu subcopula yang sensitif terhadap variabel yang memiliki korelasi erat dengan *return* yang tinggi, yaitu copula *Gumbel*.

Langkah-langkah utama pada estimasi VaR dengan metode simulasi *Monte Carlo – copula Gumbel* adalah menentukan model untuk masing-masing variabel, mentransformasikan masing-masing residual, membentuk struktur dependensi, melakukan simulasi *return* berdasarkan copula *Gumbel* dan menghitung VaR dengan simulasi *Monte Carlo*.

Data yang digunakan dalam penelitian ini adalah sepasang saham syariah yang memiliki korelasi kuat sebesar 0.565745, yaitu *log-return* bulanan saham Wijaya Karya (Persero) (WIKA.JK) dan PP (Persero) (PTPP.JK) periode 1 Januari 2014 sampai 13 Maret 2015. Kedua saham ini mengandung autokorelasi sehingga dimodelkan ke dalam bentuk MA(1) dan didapatkan model $C(u, v) = \exp(-[(-\ln u)^{3.033333} + (-\ln v)^{3.033333}]^{0.32967})$. Dari model ini, diperoleh hasil estimasi kerugian adalah sebesar 7.3264% untuk satu bulan ke depan.

Kata kunci : *Monte Carlo*, *Value at Risk* (VaR), Copula, Copula *Gumbel*

BAB I

PENDAHULUAN

1.1 Latar Belakang

Investasi merupakan salah satu cara yang banyak dilakukan oleh orang untuk mencapai keuntungan dimasa mendatang. Investor secara umum memiliki dua pilihan aset untuk investasi, yaitu aset riil dan aset keuangan. Aset riil adalah aset yang memiliki wujud fisik seperti emas dan *real-estate* termasuk juga aset yang memiliki kapasitas produktif seperti tanah, bangunan dan mesin (Bodie, dkk, 2005:p.4). Aset keuangan wujudnya diwakili oleh sebarang kertas sebagai bentuk bukti klaim pada pihak yang menerbitkan, contohnya adalah saham dan obligasi (Jones, 2007:pp.3-4). Pembelian investasi dalam aset riil dapat dilakukan secara langsung lewat penyedia barang atau jasa yang menjual aset tersebut, sedangkan pembelian aset keuangan dapat dilakukan di pasar modal.

Terdapat dua jenis pasar modal, yaitu pasar modal konvensional dan pasar modal syariah. Pasar modal syariah menjual saham-saham atas dasar prinsip-prinsip syariah, sedangkan pasar modal konvensional tidak. Otoritas Bursa Efek Indonesia (2011) menyatakan bahwa saham merupakan salah satu instrument pasar keuangan yang paling populer selain deposito dan obligasi. Saham merupakan instrumental investasi yang banyak dipilih oleh investor karena saham mampu memberikan tingkat keuntungan yang menarik.

Penerapan prinsip syariah di pasar modal bersumber pada Al-qur'an dan hadits. Penafsiran dari kedua sumber tersebut disebut dengan ilmu fiqh. Salah satu kajian yang dibahas dalam ilmu fiqh adalah muamalah, yaitu hubungan antar

manusia terkait perniagaan. Menurut Fatwa Dewan Syariah Nasional No.5/DSN-MUI/IV/2000 Tentang Jual Beli Saham, pada dasarnya semua bentuk muamalah boleh dilakukan kecuali ada dalil yang mengharamkannya. Konsep inilah yang menjadi prinsip pasar modal syariah di Indonesia. Firman Allah dalam Al-qur'an :

الَّذِينَ يَأْكُلُونَ الرِّبَا لَا يَقُومُونَ إِلَّا كَمَا يَقُومُ الَّذِي يَتَخَبَّطُهُ الشَّيْطَانُ مِنَ الْمَسِّ ذَلِكَ بِأَنَّهُمْ قَالُوا
 إِنَّمَا الْبَيْعُ مِثْلُ الرِّبَا وَأَحَلَّ اللَّهُ الْبَيْعَ وَحَرَّمَ الرِّبَا فَمَنْ جَاءَهُ مَوْعِظَةٌ مِنْ رَبِّهِ فَانْتَهَى فَلَهُ مَا سَلَفَ وَأَمْرُهُ
 إِلَى اللَّهِ وَمَنْ عَادَ فَأُولَئِكَ أَصْحَابُ النَّارِ هُمْ فِيهَا خَالِدُونَ

Artinya : *Orang-orang yang makan (mengambil) riba tidak dapat berdiri melainkan seperti berdirinya orang yang kemasukan syaitan lantaran (tekanan) penyakit gila. Keadaan mereka yang demikian itu, adalah disebabkan mereka berkata (berpendapat): “Sesungguhnya jual beli itu sama dengan riba,” padahal Allah telah menghalalkan jual beli dan mengharamkan riba. Orang-orang yang telah sampai kepadanya larangan dari Rabbnya, lalu terus berhenti (dari mengambil riba), maka baginya apa yang telah diambilnya dahulu (sebelum datang larangan); dan urusannya (terserah) kepada Allah. Orang yang meng-ulangi (mengambil riba), maka orang itu adalah penghuni-penghuni neraka; mereka kekal di dalamnya (QS. Al-Baqarah :275)*

Ayat ini menjelaskan bahwa hukum jual beli dalam Islam adalah halal dan riba adalah haram. Oleh karena itu, penelitian ini menggunakan data saham yang diambil dari pasar modal Syariah *Jakarta Islamic Index* (JII). Saham JII berjumlah 30 (tiga puluh) saham yang akan diperbaharui tiap 6 bulan sekali dan tidak bertentangan dengan syariah seperti yang telah ditetapkan oleh Badan Pengawas Pasar Modal dan Lembaga Keuangan (Bapepam-LK) dan Dewan Syariah Nasional – Majelis Ulama Indonesia (DSN-MUI). Kegiatan dalam berinvestasi seorang investor dihadapkan pada dua hal yaitu tingkat pengembalian (*return*) dan juga berupa risiko (*risk*) yang mungkin timbul akibat adanya ketidakpastian (Tandelilin, 2010:183). Allah SWT berfirman dalam Al-qur'an:

إِنَّ اللَّهَ عِنْدَهُ عِلْمُ السَّاعَةِ وَيُنزِلُ الْغَيْثَ وَيَعْلَمُ مَا فِي الْأَرْحَامِ وَمَا تَدْرِي نَفْسٌ مَّاذَا تَكْسِبُ غَدًا وَمَا
تَدْرِي نَفْسٌ بِأَيِّ أَرْضٍ تَمُوتُ ۚ إِنَّ اللَّهَ عَلِيمٌ خَبِيرٌ

Artinya : Sesungguhnya Allah, hanya pada sisi-Nya sajalah pengetahuan tentang Hari Kiamat; dan Dialah Yang menurunkan hujan, dan mengetahui apa yang ada dalam rahim. Dan tiada seorangpun yang dapat mengetahui (dengan pasti) apa yang akan diusahakannya besok. Dan tiada seorangpun yang dapat mengetahui di bumi mana dia akan mati. Sesungguhnya Allah Maha Mengetahui lagi Maha Mengenal (QS. Lukman :94).

Ayat di atas menerangkan bahwa manusia diberikan kesempatan untuk berikhtiar meraih yang terbaik di masa mendatang sekalipun mereka tidak dapat mengetahui tentang apa yang akan diperolehnya di masa mendatang. Hal ini terjadi karena dalam aktivitas sehari-hari, harga-harga saham mengalami fluktuasi baik berupa kenaikan maupun penurunan yang terjadi karena adanya permintaan dan penawaran atas saham tersebut. Jogiyanto (2010:1) mengatakan bahwa *return* atau keuntungan adalah hasil yang diperoleh dari investasi yang dapat berupa *return* realisasi yang sudah terjadi atau *return* ekspektasi yang belum terjadi tapi diharapkan akan terjadi dimasa mendatang. *Risk* atau risiko adalah suatu kondisi yang timbul karena ketidakpastian dengan seluruh konsekuensi tidak menguntungkan yang mungkin terjadi.

Semua jenis investasi selalu memiliki risiko. Semakin tinggi tingkat keuntungan maka semakin tinggi pula tingkat risikonya. Konsep ini disebut "*High Return High Risk, Low Return Low Risk*". Investasi seorang investor muslim, harus didasarkan pada prinsip-prinsip syariah dan tanpa adanya spekulasi. Oleh karena itu, investor sangat penting memahami risiko tersebut sebelum melakukan investasi. Dengan mengetahui risiko yang akan dihadapi, maka investor akan

dapat meminimalisir terjadinya risiko. Risiko-risiko tidak dapat dihindari namun dapat dikelola dan diperkirakan menggunakan alat ukur *Value at Risk* (VaR).

Ada beberapa pendekatan untuk mengestimasi VaR, seperti *variance-covariance*, *historical simulation data* (data historis) dan simulasi *Monte Carlo*. VaR memiliki asumsi distribusi normal yang jarang dimiliki oleh data runtun waktu. Asumsi normalitas pada *Value at Risk* (VaR) menyebabkan hasil estimasi yang kurang tepat. Oleh karena itu, perhitungan VaR tidak harus selalu diasumsikan berdistribusi normal tetapi dapat disesuaikan dengan distribusi data. Untuk mengatasi kelemahan tersebut, maka diperkenalkan suatu alat yaitu Copula. Teori Copula merupakan suatu alat yang sangat *powerful* untuk memodelkan distribusi gabungan (*joint distribution*) karena tidak mensyaratkan asumsi normalitas dari data sehingga cukup fleksibel untuk berbagai data terutama untuk data saham. Copula merupakan suatu fungsi yang dapat menggabungkan beberapa distribusi marginal menjadi distribusi bersama.

Kata copula berasal dari bahasa latin yang berarti mengikat atau berpasangan. Konsep copula pertama kali dipopulerkan pada tahun 1959 oleh seorang matematikawan bernama Abe Sklar. Melalui teoremanya (Teorema Sklar). Copula dapat mengeksplorasi dan membedakan karakteristik masing-masing struktur dependensi antar variabel random melalui fungsi distribusi marginal (Genest C dan Segers J, 2010:101). Copula merupakan suatu parameter yang terbentuk oleh distribusi gabungan dari fungsi marginal. Oleh karena itu, copula merupakan suatu alat yang *powerfull* untuk memodelkan distribusi gabungan. Pada penelitian ini yang akan dilakukan analisis pada dua buah saham

yang tergabung dalam JII. Masing-masing *log return* saham memiliki kebergantungan yang cukup kuat antar satu dan yang lain. Pada saat salah satu saham mengalami penurunan maka saham yang lain juga akan mengalami penurunan, begitu juga sebaliknya.

Copula memiliki beberapa keluarga, salah satu diantaranya adalah copula *Archimedean* yaitu copula yang memiliki generator unik (masing-masing generator mampu memunculkan sifat yang berbeda satu dan yang lain yang disebut dengan subcopula). Ada beberapa subcopula yang dimiliki oleh copula *Archimedean*, seperti copula *Gumbel*, copula *Clayton*, copula *Frank* dan copula *Ali-Mikhail-Haq*.

Copula *Gumbel* merupakan copula yang memiliki kesensitifan terbaik terhadap risiko yang tinggi. Sedangkan keuntungan yang tinggi akan diperoleh jika risiko yang dihadapi juga tinggi. Oleh karena itu copula *Gumbel* merupakan metode pendekatan yang tepat untuk mengestimasi VaR. Berdasarkan latar belakang yang telah dipaparkan, peneliti ingin mengaplikasikan pendekatan copula *Gumbel* untuk mengetahui risiko investasi pada sepasang saham syariah yang tergabung dalam JII dan memiliki tingkat korelasi yang erat. Sehingga, judul skripsi ini adalah “Estimasi *Value at Risk* (VaR) dengan Metode Simulasi *Monte Carlo* - Copula *Gumbel*”.

1.2 Batasan Masalah

Batasan masalah sangat diperlukan untuk menjamin keabsahan dalam kesimpulan yang diperoleh. Agar permasalahan lebih terkonsentrasi, maka pembahasan akan difokuskan pada

1. Pemilihan variabel didasarkan pada nilai korelasi tertinggi *return* harian saham syariah yang tergabung dalam JII periode 1 Januari 2014 sampai 13 Maret 2015.
2. Nilai korelasi dihitung menggunakan *Kendall's Tau*.
3. Konsep copula yang digunakan adalah copula bedimensi dua dari keluarga copula *Archimedean* yaitu copula *Gumbel* dengan pendekatan *Kendall's Tau*.
4. Estimasi *Value at Risk* (VaR) dilakukan dengan pendekatan simulasi *Monte Carlo* – copula *Gumbel*
5. Alat bantu yang digunakan dalam penelitian ini adalah *software* E-views 5.1, Microsoft Office Excel 2010 dan Matlab 8.1

1.3 Rumusan Masalah

Berdasarkan latar belakang dan batasan masalah, maka diperoleh rumusan masalah pada penelitian ini sebagai berikut :

1. Bagaimanakah langkah-langkah estimasi *Value at Risk* (VaR) dengan metode simulasi *Monte Carlo* - copula *Gumbel*?
2. Bagaimanakah bentuk pemodelan copula *Gumbel* pada saham syariah yang memiliki korelasi tertinggi?

3. Berapa besar risiko yang diperoleh dari estimasi *Value at Risk* (VaR) dengan metode simulasi *Monte Carlo* - copula *Gumbel* pada saham syariah yang memiliki korelasi tertinggi?

1.4 Tujuan Penelitian

Berdasarkan pada rumusan masalah, maka tujuan dari penelitian ini sebagai berikut :

1. Mengetahui dan mempelajari langkah-langkah estimasi *Value at Risk* (VaR) dengan metode simulasi *Monte Carlo* - copula *Gumbel* .
2. Mengetahui bentuk pemodelan copula *Gumbel* pada saham syariah yang memiliki korelasi tertinggi.
3. Mengetahui besar risiko yang diperoleh dari estimasi *Value at Risk* (VaR) dengan metode simulasi *Monte Carlo* - copula *Gumbel* pada saham syariah yang memiliki korelasi tertinggi.

1.5 Manfaat Penelitian

Terdapat dua manfaat dari penelitian ini yaitu

1.5.1 Manfaat Praktis

Manfaat praktis dari skripsi ini adalah agar para pembaca atau investor mengetahui seberapa besar risiko yang akan ditanggung untuk meminimalisir kerugian jika berinvestasi pada saham syariah.

1.5.2 Manfaat Teoritis

Manfaat teoritis dari skripsi ini adalah untuk mengetahui lebih dalam mengenai estimasi *Value at Risk* (VaR) dengan metode simulasi *Monte Carlo* - copula *Gumbel*.

1.6 Tinjauan Pustaka

Tinjauan pustaka yang digunakan oleh peneliti dalam skripsi ini adalah beberapa penelitian, buku maupun situs internet yang relevan dengan tema yang diambil peneliti. Buku yang menunjang penelitian ini adalah Roger B. Nelsen (2006) yang membahas mengenai pengenalan copula dan konsep-konsep dalam copula. Paravin K. Trivedi dan David M. Zimmer (2005) dalam bahasannya mengenai dependensi pada copula. Adapun penelitian yang relevan dengan tema yang diambil peneliti, antara lain:

- a. Jurnal Novella Putri Iriani, Muhammad Sjahid Akbar dan Haryono yang berjudul Estimasi *Value at Risk* (VaR) pada Portofolio Saham dengan Copula. Pada penelitian ini diaplikasikan pada nilai *return* saham Indofood Sukses Makmur (INDF), Telekomunikasi Indonesia (TLKM), Gudang Garam (GGRM), Bank Rakyat Indonesia (BBRI) dan Astra International (ASII) pada periode 1 September 2005 hingga 30 November 2010. Penelitian ini menggunakan pemodelan ARMA-GARCH untuk mendapatkan residual GARCH(1,1) yang selanjutnya digunakan untuk pemodelan copula dan estimasi VaR. Penelitian ini menunjukkan bahwa model copula clayton

sebagai model copula terbaik mampu menangkap *heavy tail* lebih baik berdasarkan VaR yang dihasilkan.

- b. Jurnal M. Mahfoud dan Michael Massmann (2012) berjudul Bivariat Archimedean Copulas : An Application to two Stock Market Indices. Pada penelitian ini diaplikasikan pada nilai indeks Dax-30 Jerman dan Indeks CAC-40 Perancis. Penelitian ini menggunakan pemodelan ARMA-GARCH dengan distribusi student-t yang selanjutnya digunakan untuk pemodelan copula *Archimedean*. Penelitian ini menunjukkan bahwa model copula *Gumbel* sebagai model copula terbaik.
- c. Jurnal Yimin Yang (2012) berjudul A Practical Method for Agregating Economic Capital Using a *Gumbel* Copula. Pada penelitian ini diaplikasikan pada data *charge-off* Fad pada C&I dan *consumehr loans* periode 1985 sampai 2012. Penelitian ini menggunakan pemodelan copula *Gumbel* untuk *Economic Capital* (EC).

Perbedaan penelitian ini dengan penelitian sebelumnya adalah pada penelitian ini peneliti menggunakan metode simulasi *Monte Carlo* – copula *Gumbel* untuk menghitung VaR, sedangkan pada Yimin Yang menggunakan simulasi historis. Pemilihan data pada penelitian ini didasarkan pada tingkat korelasi, sedangkan pada Novella Putri Iriani data dipilih secara acak. Penelitian ini menggabungkan antara model copula *Gumbel* dengan estimasi VaR, sedangkan pada M.Mahfoud hanya membahas copula *Archimedean*.

Tabel 1.1 Kajian Pustaka

No.	Nama Peneliti	Judul	Metode	Objek
a.	Novella Putri Iriani, Muhammad Sjahid Akbar, Haryono (2010)	Jurnal Estimasi <i>Value at Risk</i> (VaR) pada Portofolio Saham dengan Copula	VaR - Copula Clayton	INDF, TLKM, GGRM, BBRI, ASII
b.	M. Mahfoud dan Michael Massmann (2012)	Jurnal Bivariat Archidean Copulas : An Application to two Stock Market Indices	Copula <i>Archimedean</i>	Indeks Dax-30 Jerman dan Indeks CAC-40 Perancis
c.	Yimin Yang (2012)	A Practical Method for Agregating Economic Capital Using a <i>Gumbel</i> Copula	EC - Copula <i>Gumbel</i>	<i>charge-off</i> Fad pada C&I dan <i>consumer loans</i> periode 1985 sampai 2012

1.7 Sistematika Penulisan

Untuk memberikan gambaran secara umum dan memudahkan dalam penelitian mengenai estimasi *Value at Risk* (VaR) dengan metode simulasi *Monte Carlo* - copula *Gumbel*, secara garis besar sistematika penulisannya yaitu

BAB I PENDAHULUAN

Bab ini membahas latar belakang, rumusan masalah, batasan masalah, manfaat penelitian, tujuan penelitian, tinjauan pustaka dan sistematika penulisan.

BAB II LANDASAN TEORI

Bab ini membahas tentang teori pendukung yang digunakan dalam pembahasan yaitu *Value at Risk* (VaR) dengan metode simulasi *Monte Carlo* - copula *Gumbel*.

BAB III METODE PENELITIAN

Bab ini membahas proses pelaksanaan penelitian yang mencakup jenis dan sumber data, metode pengumpulan data, variable penelitian, metode penelitian, metode analisa data dan alat pengolahan data.

BAB IV PEMBAHASAN

Bab ini membahas model estimasi *Value at Risk* (VaR) dengan metode simulasi *Monte Carlo* - copula *Gumbel*.

BAB V STUDI KASUS

Bab ini membahas penerapan dan aplikasi estimasi *Value at Risk* (VaR) dengan metode simulasi *Monte Carlo* - copula *Gumbel* pada saham syariah yang terdaftar dalam JII dan memiliki tingkat korelasi tertinggi periode 1 Januari 2014 sampai 13 Maret 2015 dan memberikan interpretasi terhadap hasil yang diperoleh.

BAB VI PENUTUPAN

Bab ini membahas kesimpulan yang dapat diambil dari pembahasan permasalahan dan pemecahan masalah serta saran-saran yang berkaitan dengan penelitian sejenis untuk penelitian berikutnya.

BAB VI

PENUTUP

6.1 Kesimpulan

Berdasarkan pembahasan estimasi *Value at Risk* (VaR) dengan metode simulasi *Monte Carlo* - copula *Gumbel* pada studi kasus saham syariah yang tergabung dalam JII periode 1 Januari 2014 – 13 Maret 2015 dan memiliki korelasi tertinggi yaitu saham Wijaya Karya (persero) (WIKA.JK) dan PP (Persero) (PTPP.JK), dengan nilai korelasi sebesar 0.5808., dapat diambil kesimpulan sebagai berikut :

- a. Ada beberapa langkah dalam melakukan estimasi *Value at Risk* (VaR) dengan metode simulasi *Monte Carlo* - copula *Gumbel* yaitu sebagai berikut:
 - i) Menetapkan model marginal yang sesuai dengan karakteristik masing-masing data.
 - ii) Melakukan transformasikan masing-masing residual, sehingga residual akan berdistribusi $U(0,1)$.
 - iii) Memebentuk struktur dependensi copula *Gumbel* antar marginal berdasarkan residual yang telah ditransformasikan.
 - iv) Melakukan simulasi *return* bivariat (k_t, l_t)
 - v) Menghitung *return* portofolio pada saat t menggunakan rumus
$$R_{pt} = \frac{1}{2}k_t + \frac{1}{2}l_t.$$
 - vi) Melakukan perulangan langkah (iv) dan (v) sebanyak M kali, sehingga diperoleh beberapa nilai *return* portofolio $R_{pt}^1, R_{pt}^2, R_{pt}^3, \dots, R_{pt}^M$.

- vii) Menghitung VaR_α dari data R_{pt} , yaitu nilai kuantil ke- α dari R_{pt} yang telah diurutkan dari nilai terkecil ke nilai terbesar sehingga nilai VaR berada pada data ke $\alpha \times M$. Diambil tingkat kepercayaan 99%, 95% dan 90%.
- b. Model copula *Gumbel* pada saham syariah yang memiliki korelasi tertinggi yaitu Wijaya Karya (Persero) (WIKA.JK) dan PP (Persero) (PTPP.JK) adalah

$$C(u, v) = \exp(-[(-\ln u)^{3.033333} + (-\ln v)^{3.033333}]^{0.32967})$$

- a. Besar risiko yang diperoleh dari estimasi *Value at Risk* (VaR) dengan metode simulasi *Monte Carlo* – copula *Gumbel* dengan investasi awal sebesar Rp 100.000.000,00 pada saham WIKA.JK dan PTPP.JK pada periode 1 Januari 2014 sampai 13 Maret 2015 tidak akan melebihi Rp 8.113.600,00, Rp 7.691.800,00 dan Rp 7.366.600,00 untuk masing-masing tingkat kepercayaan 90%, 95% dan 99% dalam periode waktu satu bulan ke depan.

6.2 Saran

Berdasarkan pada hasil penelitian dan studi literatur yang telah peneliti lakukan. Saran yang dapat peneliti sampaikan bagi penelitian selanjutnya adalah

- a. Penelitian ini hanya menggunakan keunggulan dependensi copula saja, disarankan penelitian selanjutnya mampu menggali keunggulan copula yang lain, seperti copula *tail*.

- b. Penelitian ini menggunakan metode copula *Gumbel*, disarankan penelitian selanjutnya dapat memanfaatkan copula dari *family* lain, seperti *Student-t*, *Gaussian* maupun *Ellips*.
- c. Copula dapat digunakan untuk menganalisis lebih dari dua variabel, oleh karena itu penelitian selanjutnya diharapkan mampu mengaplikasikan lebih dari dua variabel.
- d. Penelitian ini menggabungkan metode estimasi VaR simulasi *Monte Carlo* dengan copula *Gumbel*, penelitian selanjutnya disarankan dapat menggunakan metode estimasi VaR yang lain.
- e. Memperluas pembahasan tentang estimasi VaR menggunakan metode copula pada sekuritas lain, seperti obligasi, sukuk dan lainnya.

DAFTAR PUSTAKA

- Bain, L.J. dan Engelhardt, M. ,1992, *Introduction to Probability and Mathematical Statistics*, 2nd edition, Duxburry Press, Callifornia.
- Bob, N. K., 2013, *Value at Risk Estimation A GARCH-EVT-Copula Approach*, Master Thesis, Stockholms Universitet.
- Cherubini, W., Luciano, W. dan Vechiato, W., 2004, *Copula Method in Finance*,. John Willey and Sonc Inc.
- Edward W. F. dan Emiliano A. V., 2011, *Understanding Relationships Using Copulas*, North American Actuarial Journal, Volume 2, Number 1.
- Embrechts, P., Mc.Neil and Straumann, D., 1999, *Correlation and Dependency in Risk Management Propertis and Pitfalls*.
- Enders, W., 2006, *Applied Econometric Time Series*.,Jones State University.
- Hanggara, D. H., 2013, *Analisis Risiko Investasi dengan Value at Risk (VaR) – Generalized*, Skripsi, Universitas Islam Negeri Sunan Kalijaga Yogyakarta, Yogyakarta.
- Islam, M.A., 2014, *Appliyng Autoregressive Conditional Heterocedasticity Model to Model Univariate Volatility*, Sekolah International Islam Malaysia.
- Jogiyanto, 2010, *Teori Portofolio dan Analisis Investasi*, BPFE, Yogyakarta.
- Jorion, P., 2006, *Value at Risk : The New Benchmark For Managing Financial Risk Third Edition*, The Mc Graw-Hill Companies Inc, New York.
- Jorion, P., 2007, *Value at Risk : The New Benchmark Managing Financial Risk*, Third Edition, The Mc. Graw-Hill Companies Inc, New York.

- Mahfoud, M dan Michael M., 2012, *Bivariat Archimedean Copulas : An Application to Two Stock Market Indices*, BMI Paper Vrije Universiteit Amsterdam, Amsterdam.
- Nelsen, R.B., 2006, *An Introduction to Copulas*, Springer, New York.
- Nurudin, M. dan dkk., 2014, *Ukuran Sample dan Distribusi Sampling dari Beberapa VaRiabel Random Kontinu*, Volume 3, No.01 (2014). UNTAN Pontianak.
- Novella, P. I. dan dkk., 2010, *Estmasi Value at Risk (VaR) pada Portofolio Saham dengan Copula*, Jurnal, Institut Teknologi Sepuluh November . Surabaya.
- Ochtora, M. D., 2014, *Copula Bersyarat untuk Mengestimasi Value at Risk*, Skripsi, FMIPA Universitas Gajah Mada, Yogyakarta.
- Paravin K. T. dan David M. Z., 2007, *Copula Modeling : An Introduction for Practitioners*, Boston.
- Parra P., H. and Koodi H. L., 2006, *Using Conditional Copula to Estimate Value at Risk*, Journal of Data Science, State University of Campinas.
- Rubinstein, R. Y., 1981, *Simulation and The Monte Carlo Method*, John Wiley and Sons, New York.
- Seth, H. and Donald E. M., 2007, *Estimating VaR Using Copula*, USA Final Report, Spring, USA.
- Soemitra, A., 2009, *Bank dan Lembaga Keuangan Syariah Edisi ke-1*, Kencana, Jakarta.

- Sofyan, Y. dan dkk., 2011, *Regresi dan Korelasi dalam Genggaman Anda*, Salemba Empat, Jakarta.
- Suirwan, 2011, *Pengukuran Risiko Pasar Portofolio Saham PT XYZ dengan Value at Risk dan Expected Shortfall model volatilitas GARCH*, Tesis, Universitas Indonesia, Jakarta.
- Sunariyah, 2006, *Pengantar Pengetahuan Pasar Modal*, Edisi ke -5, UPP STIM YKPN, Yogyakarta.
- Suryono, M., 2011, *Super Cerdas Investasi Syariah*, Qultum Media, Jakarta.
- Syafii, 2010, *Variabel Acak dan Distribusi Probabilitas*, Universitas Negeri Surakarta, Surakarta.
- Tupan, L. P., dan dkk., 2013, *Pengukuran VaR pada Asset Perusahaan dengan Metode Simulasi Monte Carlo*, Jurnal Matematika FMIPA UNSRAT ONLINE, UNSRAT, Manado.
- Walpole, R. E. dan Raymond H. M., 1995, *Ilmu Peluang dan Statistika untuk Insinyur dan Ilmuan*, ITB Bandung.
- Wei W. S dan William, 1990, *Time Series Analysis UniVaRiate and MultiVaRiate Methode*, Second Edition, Person Education Inc, USA.
- Widarjono, A., 2009, *Ekonometrika Pengantar dan Aplikasi*, Ekonisia, Yogyakarta.
- Yang, Y, 2012, *Practical Method fo Agregating Economic Capital using a Gumbel Copul*, Quant Perspectives.
- <http://finance.yahoo.com>

LAMPIRAN 1 : Data harga *close* harian JII

Tanggal	AALI	ADRO	AKRA	ANTM	ASRI	ASII
1/1/2014	25100	1090	4375	1090	430	6800
1/2/2014	24650	1060	4475	1080	455	6950
1/3/2014	23450	1010	4475	1040	445	6750
1/6/2014	22025	930	4435	1005	430	6850
1/7/2014	21500	880	4420	1005	425	6825
1/8/2014	22800	940	4445	1010	448	6800
1/9/2014	22500	945	4460	1005	444	6775
1/10/2014	21350	940	4520	980	458	6750
1/13/2014	21175	955	4750	990	498	7000
1/14/2014	21175	955	4750	990	498	7000
1/15/2014	20825	950	4750	990	496	7300
1/16/2014	20950	975	4630	1020	515	7300
1/17/2014	20875	975	4685	1005	520	6925
1/20/2014	21700	975	4640	1030	525	6825
1/21/2014	21900	980	4630	1080	540	6750
1/22/2014	22050	1025	4580	1070	520	6800
1/23/2014	22950	1025	4445	1045	525	6800
1/24/2014	22750	1040	4470	1040	510	6525
1/27/2014	21250	965	4350	1010	495	6400
1/28/2014	21425	935	4190	1005	500	6375
1/29/2014	21575	955	4410	1010	520	6425
1/30/2014	21475	950	4400	1030	510	6425
1/31/2014	21475	950	4400	1030	510	6425
2/3/2014	21650	910	4400	1020	515	6350
2/4/2014	21350	895	4370	1005	505	6250
2/5/2014	21400	905	4285	1000	510	6375
2/6/2014	22000	910	4200	1000	535	6400
2/7/2014	22150	905	4285	1010	555	6525
2/10/2014	22375	910	4440	1015	540	6500
2/11/2014	23125	945	4505	1040	570	6575
2/12/2014	23500	940	4500	1035	570	6650
2/13/2014	23150	935	4485	1015	560	6650
2/14/2014	23200	945	4500	1015	570	6700
2/17/2014	22900	975	4560	1035	590	6825
2/18/2014	23200	955	4580	1060	580	6800
2/19/2014	23850	950	4475	1060	580	6950

Tanggal	AALI	ADRO	AKRA	ANTM	ASRI	ASII
2/20/2014	23750	975	4535	1045	565	6900
2/21/2014	23500	970	4575	1055	595	6975
2/24/2014	23800	970	4590	1050	595	6775
2/25/2014	23750	940	4545	1035	585	6700
2/26/2014	23825	935	4545	1035	565	6550
2/27/2014	25175	950	4600	1045	580	6700
2/28/2014	25500	995	4560	1040	575	6950
3/3/2014	25400	980	4600	1040	565	6800
3/4/2014	25350	1015	4720	1040	580	6825
3/5/2014	27100	1020	4780	1080	585	7025
3/6/2014	27600	1020	4750	1130	605	7025
3/7/2014	27575	1015	4745	1130	605	7000
3/10/2014	27900	1000	4795	1100	595	7275
3/11/2014	27825	965	4760	1115	620	7250
3/12/2014	27450	945	4675	1095	615	7225
3/13/2014	26300	970	4650	1105	615	7275
3/14/2014	26075	970	4780	1105	635	7800
3/17/2014	26150	980	5050	1100	660	7925
3/18/2014	26050	975	5025	1125	655	7700
3/19/2014	26425	1000	4875	1180	660	7875
3/20/2014	25900	960	4830	1130	630	7550
3/21/2014	26100	990	4875	1135	635	7350
3/24/2014	26325	975	4715	1155	635	7275
3/25/2014	24925	980	4800	1145	625	7250
3/26/2014	25400	975	4835	1145	620	7300
3/27/2014	25400	970	4825	1135	620	7250
3/28/2014	26000	980	4835	1135	595	7375
3/31/2014	26000	980	4835	1135	595	7375
4/1/2014	26175	985	5075	1145	620	7675
4/2/2014	25800	980	5075	1140	625	7725
4/3/2014	25350	985	4930	1155	625	7800
4/4/2014	25350	970	4875	1145	615	7800
4/7/2014	25700	980	4930	1130	625	8000
4/8/2014	26250	970	4900	1125	620	8025
4/9/2014	26250	970	4900	1125	620	8025
4/10/2014	26300	955	4715	1095	545	7525
4/11/2014	27700	1010	4660	1080	535	7675

Tanggal	AALI	ADRO	AKRA	ANTM	ASRI	ASII
4/14/2014	27750	1010	4750	1125	555	7700
4/15/2014	27225	970	4855	1105	555	7725
4/16/2014	27100	985	4800	1120	560	7750
4/17/2014	28350	980	4775	1125	555	7825
4/18/2014	28350	980	4775	1125	555	7825
4/21/2014	28000	975	4730	1135	550	7900
4/22/2014	28275	1010	4785	1155	545	7850
4/23/2014	29100	1070	4760	1240	530	7900
4/24/2014	29000	1085	4790	1215	530	7950
4/25/2014	28300	1090	4785	1195	550	7875
4/28/2014	28500	1135	4800	1210	530	7600
4/29/2014	29000	1125	4770	1200	535	7475
4/30/2014	29400	1185	4770	1175	530	7425
5/1/2014	29400	1185	4770	1175	530	7425
5/2/2014	29425	1140	4655	1150	520	7425
5/5/2014	29675	1165	4615	1155	515	7425
5/6/2014	29100	1180	4575	1180	505	7400
5/7/2014	29225	1135	4555	1185	515	7500
5/8/2014	29025	1100	4555	1200	510	7475
5/9/2014	29225	1120	4550	1265	530	7475
5/12/2014	29000	1195	4655	1265	540	7500
5/13/2014	28500	1230	4660	1265	530	7425
5/14/2014	28775	1235	4710	1260	540	7575
5/15/2014	28775	1235	4710	1260	540	7575
5/16/2014	28975	1245	4640	1220	535	7675
5/19/2014	29125	1275	4560	1200	515	7700
5/20/2014	27500	1300	4380	1195	497	7500
5/21/2014	26800	1285	4420	1190	500	7500
5/22/2014	26900	1300	4445	1250	505	7600
5/23/2014	27000	1305	4435	1240	500	7500
5/26/2014	26850	1305	4440	1220	497	7450
5/27/2014	26850	1305	4440	1220	497	7450
5/28/2014	27800	1290	4460	1230	500	7450
5/29/2014	27800	1290	4460	1230	500	7450
5/30/2014	27325	1225	4125	1200	500	7075
6/2/2014	26875	1270	4300	1175	493	7225
6/3/2014	26850	1275	4360	1200	494	7225

Tanggal	AALI	ADRO	AKRA	ANTM	ASRI	ASII
6/4/2014	26800	1280	4385	1190	493	7175
6/5/2014	26875	1280	4345	1195	491	7150
6/6/2014	26850	1320	4295	1180	488	7200
6/9/2014	26250	1280	4260	1145	468	7225
6/10/2014	26650	1300	4395	1150	468	7400
6/11/2014	26650	1325	4520	1165	478	7525
6/12/2014	26400	1270	4550	1135	474	7450
6/13/2014	26475	1280	4605	1140	467	7400
6/16/2014	26600	1225	4600	1140	459	7250
6/17/2014	27025	1285	4550	1155	460	7225
6/18/2014	27150	1265	4580	1155	451	7175
6/19/2014	27000	1230	4510	1140	438	7150
6/20/2014	27400	1185	4410	1125	459	7150
6/23/2014	27400	1155	4435	1120	448	7225
6/24/2014	28400	1135	4500	1115	450	7275
6/25/2014	29000	1145	4530	1080	438	7200
6/26/2014	29300	1200	4435	1090	437	7225
6/27/2014	28700	1185	4380	1070	437	7350
6/30/2014	28175	1175	4330	1090	442	7275
7/1/2014	27300	1165	4280	1100	441	7350
7/2/2014	27600	1200	4370	1090	444	7450
7/3/2014	27225	1190	4485	1135	469	7350
7/4/2014	27500	1190	4520	1150	477	7350
7/7/2014	27775	1195	4575	1150	500	7500
7/8/2014	27000	1180	4515	1140	500	7650
7/9/2014	27000	1180	4515	1140	500	7650
7/10/2014	27150	1180	4715	1135	510	7825
7/11/2014	26500	1130	4655	1120	498	7550
7/14/2014	26475	1105	4550	1120	498	7500
7/15/2014	25950	1145	4625	1130	510	7600
7/16/2014	26075	1150	4710	1140	530	7600
7/17/2014	25900	1110	4550	1125	530	7600
7/18/2014	26150	1115	4510	1155	535	7650
7/21/2014	26250	1130	4520	1165	550	7725
7/22/2014	26000	1095	4405	1135	540	7725
7/23/2014	26000	1105	4435	1135	535	7700
7/24/2014	26575	1155	4495	1265	525	7675

Tanggal	AALI	ADRO	AKRA	ANTM	ASRI	ASII
7/25/2014	26700	1185	4400	1270	525	7725
7/28/2014	26700	1185	4400	1270	525	7725
7/29/2014	26700	1185	4400	1270	525	7725
7/30/2014	26700	1185	4400	1270	525	7725
7/31/2014	26700	1185	4400	1270	525	7725
8/1/2014	26700	1185	4400	1270	525	7725
8/4/2014	26250	1235	4620	1220	515	7900
8/5/2014	26275	1255	4620	1230	530	7800
8/6/2014	26650	1255	4650	1225	540	7625
8/7/2014	26450	1270	4605	1265	540	7675
8/8/2014	26225	1255	4600	1245	535	7550
8/11/2014	26500	1265	4690	1240	535	7650
8/12/2014	26250	1265	4675	1250	535	7650
8/13/2014	26275	1285	4800	1245	545	7725
8/14/2014	26275	1295	4800	1235	555	7725
8/15/2014	26050	1295	4930	1235	550	7650
8/18/2014	26075	1320	5050	1230	545	7675
8/19/2014	26550	1330	4950	1230	550	7675
8/20/2014	26350	1320	4845	1235	550	7725
8/21/2014	26175	1280	4990	1240	550	7775
8/22/2014	26150	1255	5050	1230	540	7725
8/25/2014	25900	1230	5000	1225	525	7625
8/26/2014	25850	1270	4980	1190	498	7600
8/27/2014	25900	1340	4915	1190	500	7600
8/28/2014	26000	1315	5100	1205	510	7675
8/29/2014	25500	1315	5250	1195	510	7575
9/1/2014	25550	1320	5500	1160	500	7625
9/2/2014	25625	1335	5675	1160	500	7725
9/3/2014	25850	1370	5600	1155	505	7675
9/4/2014	25500	1375	5300	1195	496	7550
9/5/2014	25800	1355	5250	1180	495	7650
9/8/2014	25775	1385	5300	1210	496	7575
9/9/2014	25300	1330	5325	1190	489	7500
9/10/2014	24425	1285	5325	1150	481	7325
9/11/2014	23550	1285	5250	1140	481	7250
9/12/2014	23350	1305	5225	1140	483	7225
9/15/2014	23300	1275	5225	1135	481	7300

Tanggal	AALI	ADRO	AKRA	ANTM	ASRI	ASII
9/16/2014	23000	1270	5225	1135	478	7250
9/17/2014	23075	1320	5225	1140	490	7275
9/18/2014	23850	1290	5250	1145	482	7375
9/19/2014	23875	1265	5250	1100	487	7350
9/22/2014	23600	1255	5250	1100	482	7350
9/23/2014	23150	1270	5225	1120	477	7250
9/24/2014	23175	1265	5275	1125	479	7200
9/25/2014	23500	1275	5225	1135	488	7175
9/26/2014	23200	1195	5200	1100	470	7000
9/29/2014	23000	1165	5325	1080	458	7050
9/30/2014	23000	1175	5450	1110	455	7050
10/1/2014	23100	1160	5350	1085	462	7000
10/2/2014	22600	1120	5175	1045	440	6600
10/3/2014	22025	1105	5150	1025	434	6600
10/6/2014	22100	1140	5050	1020	434	6725
10/7/2014	22475	1140	5025	1025	441	6800
10/8/2014	22100	1155	4880	1015	439	6700
10/9/2014	22325	1140	4870	1020	442	6725
10/10/2014	21900	1090	4760	990	438	6500
10/13/2014	21900	1010	4800	985	437	6350
10/14/2014	21800	1010	4705	990	442	6400
10/15/2014	20825	940	4805	1000	438	6400
10/16/2014	20100	965	4880	990	440	6350
10/17/2014	19950	980	4920	950	472	6550
10/20/2014	19600	960	4890	955	480	6600
10/21/2014	19425	975	4810	950	479	6500
10/22/2014	19625	1030	4965	960	475	6550
10/23/2014	19675	1050	4905	960	481	6700
10/24/2014	20300	1055	4920	960	473	6600
10/27/2014	20300	1045	4945	945	459	6525
10/28/2014	19975	1030	4805	945	456	6650
10/29/2014	21075	1100	4765	940	458	6875
10/30/2014	23000	1100	4800	960	457	6900
10/31/2014	23500	1135	4925	970	464	6775
11/3/2014	23850	1150	4850	945	457	6875
11/4/2014	23200	1140	4880	940	457	6775
11/5/2014	23000	1100	4840	935	455	6950

Tanggal	AALI	ADRO	AKRA	ANTM	ASRI	ASII
11/6/2014	23025	1080	4820	945	454	6950
11/7/2014	22925	1095	4775	935	445	6950
11/10/2014	22925	1085	4685	925	446	6725
11/11/2014	23600	1090	4565	920	448	6875
11/12/2014	24150	1020	4620	920	450	7100
11/13/2014	23650	1000	4640	940	448	7100
11/14/2014	23250	1000	4685	935	450	7175
11/17/2014	23550	1005	4660	930	453	7125
11/18/2014	23750	1015	4695	930	462	7200
11/19/2014	23975	1030	4705	930	473	7150
11/20/2014	24775	1070	4600	955	470	6875
11/21/2014	25100	1075	4635	980	505	6950
11/24/2014	24975	1090	4670	1000	499	7100
11/25/2014	24025	1095	4625	990	505	6900
11/26/2014	24175	1105	4605	970	510	7025
11/27/2014	24450	1100	4650	980	520	7100
11/28/2014	24000	1080	4650	980	560	7125
12/1/2014	23025	1065	4605	980	550	7125
12/2/2014	23200	1085	4600	985	570	7000
12/3/2014	23125	1095	4435	975	590	6900
12/4/2014	23425	1135	4520	980	595	6975
12/5/2014	24400	1120	4525	965	600	7100
12/8/2014	23900	1095	4535	960	575	7100
12/9/2014	23875	1090	4475	965	570	7100
12/10/2014	23900	1065	4570	965	580	7150
12/11/2014	24000	1060	4595	955	590	7100
12/12/2014	23675	1025	4670	970	580	7175
12/15/2014	23125	1025	4670	955	560	7025
12/16/2014	22500	1040	4550	970	510	7100
12/17/2014	22400	1050	4430	980	520	7025
12/18/2014	23300	1065	4330	965	535	7200
12/19/2014	22900	1060	4285	980	520	7200
12/22/2014	22950	1060	4175	985	525	7125
12/23/2014	23275	1055	4205	1025	525	7275
12/24/2014	23300	1060	4080	1085	540	7325
12/25/2014	23300	1060	4080	1085	540	7325
12/26/2014	23300	1060	4080	1085	540	7325

Tanggal	AALI	ADRO	AKRA	ANTM	ASRI	ASII
12/29/2014	23750	1040	4080	1095	560	7350
12/30/2014	24250	1040	4120	1065	560	7425
12/31/2014	24250	1040	4120	1065	560	7425
1/1/2015	24250	1040	4120	1065	560	7425
1/2/2015	24575	1040	4500	1045	580	7400
1/5/2015	24675	1025	4550	1040	570	7225
1/6/2015	24300	1010	4550	1025	555	7050
1/7/2015	24700	1010	4540	1040	580	7150
1/8/2015	25225	985	4575	1115	580	7075
1/9/2015	25975	1005	4605	1085	590	7025
1/12/2015	25800	995	4580	1090	590	7000
1/13/2015	25900	965	4585	1085	590	7175
1/14/2015	24900	945	4530	1070	575	7050
1/15/2015	24950	935	4580	1070	590	7275
1/16/2015	24725	935	4590	1055	575	7300
1/19/2015	24500	945	4510	1050	580	7425
1/20/2015	24500	980	4510	1055	580	7450
1/21/2015	24175	1005	4575	1050	580	7675
1/22/2015	24000	1015	4530	1055	600	7750
1/23/2015	24000	1000	4460	1060	605	8075
1/26/2015	23525	980	4455	1030	595	8025
1/27/2015	24275	1000	4610	1065	600	7825
1/28/2015	23675	995	4620	1050	595	7825
1/29/2015	23200	985	4700	1070	595	7750
1/30/2015	23250	1000	4695	1065	595	7850
2/2/2015	23450	995	4650	1055	585	7750
2/3/2015	23400	990	4585	1055	605	7625
2/4/2015	23625	1000	4590	1050	595	7725
2/5/2015	24450	995	4565	1035	600	7550
2/6/2015	26400	995	4605	1040	625	7600
2/9/2015	25200	980	4675	1035	635	7575
2/10/2015	24725	995	4700	1035	630	7625
2/11/2015	25100	980	4760	1070	640	7875
2/12/2015	25425	985	4855	1055	635	7925
2/13/2015	25600	1000	4895	1050	635	7950
2/16/2015	25000	990	4790	1045	620	7800
2/17/2015	25200	1000	4815	1030	630	7800

Tanggal	AALI	ADRO	AKRA	ANTM	ASRI	ASII
2/18/2015	25225	995	4860	1035	665	7950
2/19/2015	25225	995	4860	1035	665	7950
2/20/2015	24975	995	4870	1030	690	7850
2/23/2015	24525	980	4810	1020	685	7900
2/24/2015	24200	965	4840	1005	675	8000
2/25/2015	24500	960	4845	995	675	8150
2/26/2015	24950	945	4845	1000	665	8050
2/27/2015	24650	960	4870	1005	670	7850
3/2/2015	25550	1020	4975	1010	660	7875
3/3/2015	25625	1015	4990	1000	635	8000
3/4/2015	25975	985	5050	995	620	7875
3/5/2015	26300	1005	5075	1005	610	7850
3/6/2015	26150	985	4975	1000	610	8075
3/9/2015	26075	990	5000	985	585	7950
3/10/2015	26075	985	5175	980	585	7975
3/11/2015	26100	955	5150	970	555	7850
3/12/2015	26150	970	5075	985	560	7900
3/13/2015	25625	970	5125	975	565	7875

Tanggal	BMTR	BSDE	CPIN	ICBP	INCO	INDF
1/1/2014	1900	1290	3375	10200	2650	6600
1/2/2014	1900	1320	3525	10450	2500	6700
1/3/2014	1890	1290	3400	10200	2375	6700
1/6/2014	1840	1250	3380	10125	2175	6675
1/7/2014	1785	1210	3300	10100	2190	6625
1/8/2014	1835	1265	3375	10075	2200	6700
1/9/2014	1830	1270	3445	9975	2150	6575
1/10/2014	1835	1370	3550	10000	2300	6675
1/13/2014	1860	1525	3805	10150	2425	6725
1/14/2014	1860	1525	3805	10150	2425	6725
1/15/2014	1875	1490	3930	10750	2635	6675
1/16/2014	1905	1435	3935	10850	2600	6725
1/17/2014	1910	1455	3915	10925	2620	6675
1/20/2014	1935	1455	3910	10975	2600	6750
1/21/2014	1935	1515	3925	11100	2655	6775
1/22/2014	1930	1505	4030	11600	2750	7175
1/23/2014	1930	1475	3940	11300	2680	7275
1/24/2014	1855	1440	3885	11200	2650	7275
1/27/2014	1800	1340	3860	10850	2455	6950
1/28/2014	1830	1380	4000	10675	2375	6950
1/29/2014	1855	1460	4075	11200	2385	6925
1/30/2014	1850	1440	4135	11000	2305	6975
1/31/2014	1850	1440	4135	11000	2305	6975
2/3/2014	1800	1440	4030	10725	2310	6925
2/4/2014	1765	1420	3960	10775	2305	6825
2/5/2014	1755	1435	3905	10975	2305	6875
2/6/2014	1810	1500	3920	11100	2325	7025
2/7/2014	1835	1540	4000	11150	2435	7050
2/10/2014	1815	1535	3840	11100	2410	7050
2/11/2014	1800	1565	3895	11050	2515	6900
2/12/2014	1830	1545	3935	10950	2510	7000
2/13/2014	1810	1555	3925	10925	2550	6975
2/14/2014	1850	1555	3950	10875	2550	7000
2/17/2014	1920	1575	4010	10800	2580	7025
2/18/2014	1965	1550	4000	10700	2620	7000
2/19/2014	2095	1545	4000	10800	2620	7000
2/20/2014	2100	1555	3995	10775	2600	7000

Tanggal	BMTR	BSDE	CPIN	ICBP	INCO	INDF
2/21/2014	2110	1580	4050	10900	2570	7050
2/24/2014	2095	1560	4170	11200	2465	6975
2/25/2014	2080	1530	4185	11250	2415	6975
2/26/2014	2120	1460	4130	10900	2460	6950
2/27/2014	2150	1515	4200	11000	2385	7025
2/28/2014	2185	1535	4235	11175	2390	7175
3/3/2014	2130	1510	4170	11125	2420	7150
3/4/2014	2145	1530	4135	10925	2550	7125
3/5/2014	2170	1540	4180	10950	2690	7225
3/6/2014	2250	1575	4165	10925	2690	7400
3/7/2014	2400	1620	4195	10900	2710	7425
3/10/2014	2400	1640	4200	10875	2595	7400
3/11/2014	2440	1675	4205	11000	2630	7500
3/12/2014	2395	1675	4190	11000	2560	7550
3/13/2014	2395	1670	4200	11025	2570	7700
3/14/2014	2360	1690	4300	11100	2540	7750
3/17/2014	2385	1710	4350	11150	2540	7675
3/18/2014	2405	1685	4295	10850	2585	7500
3/19/2014	2485	1705	4190	10825	2780	7475
3/20/2014	2400	1620	4055	10800	2725	7225
3/21/2014	2405	1675	4135	10975	2725	7325
3/24/2014	2460	1680	4205	10200	2770	7050
3/25/2014	2415	1685	4160	10000	2820	7025
3/26/2014	2430	1685	4090	10050	2785	7075
3/27/2014	2385	1675	3995	10150	2785	7250
3/28/2014	2350	1635	3995	10100	2820	7300
3/31/2014	2350	1635	3995	10100	2820	7300
4/1/2014	2370	1685	4150	10075	2850	7425
4/2/2014	2385	1670	4110	10000	2820	7400
4/3/2014	2360	1665	4100	10050	2905	7300
4/4/2014	2335	1640	4020	10000	3050	7150
4/7/2014	2350	1645	4210	10075	3040	7225
4/8/2014	2300	1650	4250	10000	3125	7175
4/9/2014	2300	1650	4250	10000	3125	7175
4/10/2014	2235	1505	4110	9925	3165	7025
4/11/2014	2215	1490	4200	9925	3310	7200
4/14/2014	2135	1540	4215	10000	3480	7225

Tanggal	BMTR	BSDE	CPIN	ICBP	INCO	INDF
4/15/2014	2125	1585	4255	10050	3490	7150
4/16/2014	2100	1620	4190	9975	3395	7050
4/17/2014	2125	1615	4210	9975	3555	7200
4/18/2014	2125	1615	4210	9975	3555	7200
4/21/2014	2300	1605	4185	9975	3470	7175
4/22/2014	2295	1630	3935	9975	3625	7225
4/23/2014	2290	1620	3870	10000	3705	7150
4/24/2014	2265	1615	3900	10000	3675	7200
4/25/2014	2255	1620	3950	9975	3660	7150
4/28/2014	2175	1550	3850	10000	3635	7000
4/29/2014	2165	1565	3825	10000	3610	7025
4/30/2014	2190	1560	3770	10000	3550	7050
5/1/2014	2190	1560	3770	10000	3550	7050
5/2/2014	2200	1540	3700	9975	3450	7050
5/5/2014	2200	1540	3735	9975	3600	7025
5/6/2014	2195	1525	3950	9975	3675	7025
5/7/2014	2210	1565	3945	10000	3930	7025
5/8/2014	2200	1575	3950	9975	4040	7025
5/9/2014	2210	1575	3980	9975	4110	7050
5/12/2014	2200	1575	3865	9950	4155	7075
5/13/2014	2240	1580	3865	10000	4060	7050
5/14/2014	2280	1600	3940	10300	3950	7050
5/15/2014	2280	1600	3940	10300	3950	7050
5/16/2014	2260	1600	4000	10325	3765	7100
5/19/2014	2215	1530	4000	10225	3870	7025
5/20/2014	2190	1525	3855	9975	3920	6775
5/21/2014	2205	1560	3810	10050	3810	6750
5/22/2014	2195	1590	3895	9975	3910	6775
5/23/2014	2150	1580	3930	10200	3965	6700
5/26/2014	2150	1560	3965	10175	3940	6775
5/27/2014	2150	1560	3965	10175	3940	6775
5/28/2014	2095	1605	3995	10275	3980	6800
5/29/2014	2095	1605	3995	10275	3980	6800
5/30/2014	2050	1610	3775	10200	3915	6825
6/2/2014	2015	1555	3800	10075	3925	6875
6/3/2014	2040	1545	3810	10075	3945	6950
6/4/2014	2070	1575	3810	10200	3900	6900

Tanggal	BMTR	BSDE	CPIN	ICBP	INCO	INDF
6/5/2014	2085	1585	3840	10100	3850	6850
6/6/2014	2085	1600	3840	10100	3905	6800
6/9/2014	2060	1570	3755	10025	3855	6800
6/10/2014	2090	1580	3810	10200	3830	6850
6/11/2014	2165	1595	3935	10200	3780	6900
6/12/2014	2195	1580	3940	10200	3725	6875
6/13/2014	2160	1575	3895	10225	3670	6875
6/16/2014	2165	1575	3865	10000	3650	6800
6/17/2014	2150	1580	3890	10000	3730	6825
6/18/2014	2160	1570	3895	10000	3720	6825
6/19/2014	2115	1525	3860	10100	3620	6825
6/20/2014	2100	1565	3900	10100	3540	6825
6/23/2014	2085	1515	3845	9975	3560	6825
6/24/2014	2095	1500	3845	10000	3560	6825
6/25/2014	2085	1470	3820	9975	3540	6775
6/26/2014	2090	1470	3860	10000	3575	6825
6/27/2014	2105	1435	3765	9900	3555	6800
6/30/2014	2125	1485	3770	10000	3555	6700
7/1/2014	2130	1470	3760	10075	3560	6750
7/2/2014	2130	1500	3820	10225	3560	6825
7/3/2014	2090	1505	3840	10150	3720	6825
7/4/2014	2085	1555	3785	10075	3745	6800
7/7/2014	2080	1590	3895	10225	3735	6900
7/8/2014	2050	1590	3875	10225	3670	6900
7/9/2014	2050	1590	3875	10225	3670	6900
7/10/2014	2065	1620	3875	10350	3705	7075
7/11/2014	2015	1555	3845	10075	3595	7100
7/14/2014	1995	1600	3840	10025	3565	7050
7/15/2014	1990	1630	3855	9975	3640	7050
7/16/2014	1990	1660	4055	10500	3800	7075
7/17/2014	1970	1620	3980	10500	3750	6975
7/18/2014	1945	1635	3970	10475	3790	7075
7/21/2014	1955	1665	3975	10500	3785	7050
7/22/2014	1985	1650	3925	10450	3710	7000
7/23/2014	1980	1650	3970	10525	3740	7050
7/24/2014	1970	1610	3990	10475	3905	7075
7/25/2014	1920	1585	3950	10450	4025	7075

Tanggal	BMTR	BSDE	CPIN	ICBP	INCO	INDF
7/28/2014	1920	1585	3950	10450	4025	7075
7/29/2014	1920	1585	3950	10450	4025	7075
7/30/2014	1920	1585	3950	10450	4025	7075
7/31/2014	1920	1585	3950	10450	4025	7075
8/1/2014	1920	1585	3950	10450	4025	7075
8/4/2014	1865	1575	3945	10600	4000	7175
8/5/2014	1870	1600	3965	10550	3870	7075
8/6/2014	1815	1570	3950	10350	3790	7050
8/7/2014	1790	1600	3875	10475	3980	7000
8/8/2014	1755	1600	3860	10350	3940	6975
8/11/2014	1790	1615	3965	10375	3935	7075
8/12/2014	1815	1620	3985	10375	4035	7100
8/13/2014	1825	1630	4070	10500	4100	7125
8/14/2014	1845	1640	4030	10450	3975	7150
8/15/2014	1885	1630	4070	10475	3975	7100
8/18/2014	1905	1625	4035	10450	3925	7125
8/19/2014	1950	1615	3940	10225	3900	7000
8/20/2014	1995	1630	4005	10275	3955	7075
8/21/2014	2015	1630	4060	10250	4130	7125
8/22/2014	2020	1640	4030	10100	4090	7100
8/25/2014	2020	1630	4035	10300	4165	7075
8/26/2014	2015	1630	4035	10275	4105	7000
8/27/2014	1955	1630	4030	10500	4110	6950
8/28/2014	1945	1625	4050	10550	4155	6950
8/29/2014	1935	1605	3845	10500	4180	6875
9/1/2014	1945	1620	4030	10900	4180	7025
9/2/2014	1955	1630	4045	10900	4245	7025
9/3/2014	2000	1640	4050	10950	4200	7075
9/4/2014	1900	1630	4050	10900	4480	7025
9/5/2014	1955	1645	3985	10900	4480	6975
9/8/2014	1940	1610	4015	10975	4505	7000
9/9/2014	1930	1590	3965	10850	4470	7000
9/10/2014	1930	1530	3880	10775	4150	6950
9/11/2014	1890	1540	3800	10650	4000	6950
9/12/2014	1930	1550	3940	11275	4040	7050
9/15/2014	1930	1520	4205	11250	4020	7025
9/16/2014	1990	1520	4255	10975	4090	6975

Tanggal	BMTR	BSDE	CPIN	ICBP	INCO	INDF
9/17/2014	1955	1605	4245	11200	4170	7075
9/18/2014	2025	1595	4180	11225	4145	7100
9/19/2014	1990	1590	4275	11300	4020	7100
9/22/2014	1945	1600	4265	11200	3965	7125
9/23/2014	1940	1555	4150	10825	3870	7025
9/24/2014	1945	1570	4100	11000	3875	7050
9/25/2014	1930	1635	4110	11150	3905	6925
9/26/2014	2025	1600	4080	11300	3865	6950
9/29/2014	1990	1570	4185	11350	3845	6975
9/30/2014	1945	1545	4240	11350	3750	7000
10/1/2014	1955	1565	4160	11200	3650	6975
10/2/2014	1900	1500	3925	10750	3500	6825
10/3/2014	1880	1450	3795	10950	3560	6775
10/6/2014	1800	1475	3850	10925	3695	6775
10/7/2014	1880	1480	3905	10850	3740	6875
10/8/2014	1835	1445	3765	10600	3720	6725
10/9/2014	1825	1500	3815	11075	3700	6775
10/10/2014	1820	1460	3775	11100	3655	6850
10/13/2014	1800	1435	3700	11025	3660	6800
10/14/2014	1765	1455	3780	11025	3685	6950
10/15/2014	1810	1475	3860	11400	3645	7000
10/16/2014	1830	1495	3965	11325	3680	6825
10/17/2014	1810	1540	3980	11400	3670	6975
10/20/2014	1890	1580	3950	11000	3680	6900
10/21/2014	1920	1570	3985	11325	3680	6800
10/22/2014	1900	1600	4050	11175	3700	6775
10/23/2014	1935	1600	4065	11375	3695	6750
10/24/2014	1915	1585	4100	11400	3700	6650
10/27/2014	1900	1525	4225	11100	3635	6475
10/28/2014	1900	1520	4120	10900	3550	6400
10/29/2014	1940	1565	4240	11050	3610	6575
10/30/2014	1950	1570	4220	11000	3675	6600
10/31/2014	1960	1605	4200	11050	3790	6825
11/3/2014	1995	1595	3980	11000	3675	6850
11/4/2014	1980	1590	3895	10900	3690	6725
11/5/2014	1955	1575	3950	10850	3700	6625
11/6/2014	1950	1565	3835	10800	3835	6500

Tanggal	BMTR	BSDE	CPIN	ICBP	INCO	INDF
11/7/2014	1800	1540	3730	11000	3810	6450
11/10/2014	1810	1525	3790	11050	3730	6425
11/11/2014	1790	1535	3820	11175	3750	6525
11/12/2014	1730	1545	3850	11175	3780	6550
11/13/2014	1740	1550	3830	11250	3860	6575
11/14/2014	1685	1520	3790	11025	3850	6575
11/17/2014	1645	1550	3805	11025	3885	6675
11/18/2014	1700	1580	3930	11000	3915	6650
11/19/2014	1700	1640	3950	11150	3930	6650
11/20/2014	1690	1635	3950	11225	4010	6650
11/21/2014	1675	1670	3980	11075	4080	6750
11/24/2014	1695	1685	4045	11375	4150	6800
11/25/2014	1650	1705	4010	11450	4075	6775
11/26/2014	1650	1715	3975	11400	3995	6675
11/27/2014	1640	1735	4100	11375	4045	6725
11/28/2014	1605	1770	4110	11250	3985	6700
12/1/2014	1560	1820	4125	11400	3815	6625
12/2/2014	1575	1835	4115	11400	3900	6675
12/3/2014	1520	1820	4115	11400	3925	6600
12/4/2014	1505	1830	4195	11600	4060	6625
12/5/2014	1500	1845	4125	11750	4135	6675
12/8/2014	1470	1840	4080	11600	3980	6625
12/9/2014	1440	1840	4035	11850	3995	6650
12/10/2014	1460	1825	4000	11800	3880	6600
12/11/2014	1430	1810	3940	11500	3880	6525
12/12/2014	1415	1785	3840	11700	3855	6550
12/15/2014	1490	1695	3870	11800	3940	6575
12/16/2014	1415	1660	3780	11500	3830	6525
12/17/2014	1435	1765	3760	11775	3860	6400
12/18/2014	1455	1840	3790	12000	3770	6450
12/19/2014	1445	1830	3750	12325	3690	6550
12/22/2014	1410	1795	3735	12275	3660	6550
12/23/2014	1410	1795	3710	12275	3675	6625
12/24/2014	1455	1790	3795	12400	3595	6600
12/25/2014	1455	1790	3795	12400	3595	6600
12/26/2014	1455	1790	3795	12400	3595	6600
12/29/2014	1445	1790	3810	12500	3555	6625

Tanggal	BMTR	BSDE	CPIN	ICBP	INCO	INDF
12/30/2014	1425	1805	3780	13100	3625	6750
12/31/2014	1425	1805	3780	13100	3625	6750
1/1/2015	1425	1805	3780	13100	3625	6750
1/2/2015	1420	1865	3800	13150	3590	7450
1/5/2015	1415	1925	3785	13150	3540	7475
1/6/2015	1405	1900	3750	12850	3520	7375
1/7/2015	1460	1930	3840	13000	3540	7275
1/8/2015	1525	1975	3800	13000	3535	7250
1/9/2015	1605	1960	3805	12950	3600	7400
1/12/2015	1730	1935	3825	12500	3585	7425
1/13/2015	2010	1970	3895	12725	3530	7425
1/14/2015	1815	1960	3845	12700	3375	7425
1/15/2015	1760	1970	3860	12800	3325	7450
1/16/2015	1725	1980	3805	12725	3305	7300
1/19/2015	1850	2005	3790	13075	3385	7325
1/20/2015	1900	2020	3820	13400	3490	7375
1/21/2015	1945	2060	3835	14500	3425	7425
1/22/2015	1935	2145	3925	14675	3505	7625
1/23/2015	1900	2060	4010	14800	3555	7625
1/26/2015	1855	2065	4000	14100	3520	7475
1/27/2015	1850	2100	4025	14775	3590	7475
1/28/2015	1825	1990	3985	14700	3560	7400
1/29/2015	1850	1995	3950	14700	3495	7375
1/30/2015	1855	2020	3955	14500	3450	7550
2/2/2015	1840	2005	3780	14300	3400	7600
2/3/2015	1835	2090	3780	14300	3365	7450
2/4/2015	1865	2045	3780	14100	3385	7500
2/5/2015	1840	2030	3860	14075	3400	7300
2/6/2015	1860	2070	3925	14400	3540	7500
2/9/2015	1860	2095	3885	14525	3580	7475
2/10/2015	1830	2100	3855	14175	3550	7350
2/11/2015	1775	2085	3785	14075	3595	7350
2/12/2015	1790	2095	3850	14225	3610	7350
2/13/2015	1755	2110	3860	14225	3620	7400
2/16/2015	1720	2055	3835	14375	3515	7325
2/17/2015	1810	2020	3825	14200	3475	7400
2/18/2015	1840	2125	3815	14300	3480	7425

Tanggal	BMTR	BSDE	CPIN	ICBP	INCO	INDF
2/19/2015	1840	2125	3815	14300	3480	7425
2/20/2015	1855	2120	3785	14200	3435	7350
2/23/2015	1860	2095	3815	14050	3385	7350
2/24/2015	1890	2080	3810	14025	3350	7350
2/25/2015	1920	2120	3830	14050	3360	7425
2/26/2015	1990	2200	3825	14225	3385	7425
2/27/2015	2015	2220	3785	14300	3525	7400
3/2/2015	1995	2200	3830	14325	3535	7425
3/3/2015	2000	2190	3795	14725	3425	7425
3/4/2015	1945	2150	3800	14550	3390	7450
3/5/2015	1890	2140	3795	14375	3415	7450
3/6/2015	1990	2090	3820	14525	3450	7475
3/9/2015	1945	2050	3775	14225	3425	7375
3/10/2015	1905	2060	3770	14500	3380	7475
3/11/2015	1835	2000	3770	14300	3335	7350
3/12/2015	1805	2030	3755	14600	3290	7325
3/13/2015	1805	2025	3700	14625	3295	7325

Tanggal	INTP	ITMG	KLBF	LPKR	LSIP	MNCN
1/1/2014	20000	28500	1250	910	1930	2625
1/2/2014	20350	28100	1320	910	1900	2650
1/3/2014	20000	27150	1320	900	1840	2600
1/6/2014	20325	26550	1310	875	1785	2525
1/7/2014	20200	25550	1285	870	1665	2510
1/8/2014	20200	26200	1300	870	1700	2510
1/9/2014	20225	25700	1330	870	1625	2500
1/10/2014	20875	25700	1370	895	1535	2510
1/13/2014	21950	25650	1430	940	1490	2505
1/14/2014	21950	25650	1430	940	1490	2505
1/15/2014	21950	25100	1430	960	1520	2515
1/16/2014	21625	25000	1400	965	1540	2445
1/17/2014	21900	25125	1390	965	1575	2450
1/20/2014	21625	25475	1405	965	1665	2420
1/21/2014	21450	25800	1410	975	1695	2390
1/22/2014	20825	26850	1415	975	1675	2445
1/23/2014	21275	27550	1410	985	1785	2410
1/24/2014	21300	26875	1410	980	1760	2385
1/27/2014	20225	25650	1355	930	1700	2290
1/28/2014	21250	25750	1405	935	1635	2260
1/29/2014	21775	26250	1420	955	1670	2220
1/30/2014	22400	26800	1405	950	1655	2235
1/31/2014	22400	26800	1405	950	1655	2235
2/3/2014	21450	26350	1385	940	1680	2300
2/4/2014	20900	25875	1410	925	1630	2295
2/5/2014	21250	26775	1410	920	1630	2315
2/6/2014	21225	27500	1420	925	1705	2285
2/7/2014	21500	28100	1415	930	1720	2295
2/10/2014	21725	28000	1400	930	1750	2265
2/11/2014	22050	27250	1400	930	1785	2285
2/12/2014	22400	27300	1410	930	1835	2300
2/13/2014	22350	27500	1390	925	1830	2300
2/14/2014	22200	27200	1395	935	1880	2275
2/17/2014	22425	27050	1405	955	1905	2325
2/18/2014	22450	26900	1395	940	1985	2345
2/19/2014	22650	26700	1420	930	2020	2460
2/20/2014	22650	26975	1440	930	1990	2470

Tanggal	INTP	ITMG	KLBF	LPKR	LSIP	MNCN
2/21/2014	22775	26650	1470	950	1970	2475
2/24/2014	22250	25950	1460	940	1975	2460
2/25/2014	21900	25375	1435	935	1950	2455
2/26/2014	21175	25125	1400	930	1990	2495
2/27/2014	21725	25600	1400	945	2070	2470
2/28/2014	22450	26000	1450	940	2070	2535
3/3/2014	22000	25400	1430	935	2050	2490
3/4/2014	21800	25875	1430	930	2025	2540
3/5/2014	21950	25775	1430	930	2145	2535
3/6/2014	22050	25475	1420	950	2235	2535
3/7/2014	22500	25325	1425	1025	2310	2625
3/10/2014	22800	25225	1415	1065	2355	2630
3/11/2014	22700	25300	1420	1060	2330	2780
3/12/2014	22200	24600	1415	1085	2200	2765
3/13/2014	22200	24900	1445	1095	2170	2760
3/14/2014	24000	24300	1475	1135	2245	2660
3/17/2014	24500	24200	1490	1245	2300	2565
3/18/2014	24000	23700	1460	1250	2265	2555
3/19/2014	24050	23625	1420	1245	2360	2660
3/20/2014	23150	22525	1415	1190	2290	2590
3/21/2014	23550	24000	1425	1185	2280	2640
3/24/2014	24200	23900	1450	1165	2265	2630
3/25/2014	24225	23625	1445	1130	2160	2610
3/26/2014	24200	23850	1465	1135	2205	2660
3/27/2014	23800	24200	1475	1080	2190	2630
3/28/2014	23375	24350	1465	1085	2210	2630
3/31/2014	23375	24350	1465	1085	2210	2630
4/1/2014	23800	24750	1505	1155	2210	2680
4/2/2014	23900	24850	1495	1145	2250	2650
4/3/2014	24325	24650	1505	1170	2225	2630
4/4/2014	24150	24175	1500	1155	2245	2640
4/7/2014	24950	24300	1525	1195	2225	2765
4/8/2014	24950	24325	1510	1200	2225	2780
4/9/2014	24950	24325	1510	1200	2225	2780
4/10/2014	22725	24425	1510	1120	2165	2715
4/11/2014	22600	25400	1510	1095	2205	2765
4/14/2014	22950	25325	1520	1130	2250	2775

Tanggal	INTP	ITMG	KLBF	LPKR	LSIP	MNCN
4/15/2014	23400	24900	1515	1125	2310	2785
4/16/2014	23425	25300	1535	1115	2385	2840
4/17/2014	23450	25325	1545	1115	2380	2865
4/18/2014	23450	25325	1545	1115	2380	2865
4/21/2014	23000	25375	1515	1100	2345	2910
4/22/2014	22775	25975	1540	1065	2360	2925
4/23/2014	22600	26650	1550	1055	2420	2915
4/24/2014	22325	26275	1540	1075	2395	2925
4/25/2014	22600	26225	1545	1085	2410	2840
4/28/2014	22275	25725	1530	1065	2425	2650
4/29/2014	21875	24875	1525	1070	2450	2690
4/30/2014	21950	25475	1545	1070	2450	2715
5/1/2014	21950	25475	1545	1070	2450	2715
5/2/2014	21450	25000	1560	1070	2380	2715
5/5/2014	21375	25075	1560	1060	2410	2725
5/6/2014	21450	25175	1555	1050	2375	2685
5/7/2014	21425	25000	1545	1060	2415	2660
5/8/2014	22075	25000	1550	1055	2420	2685
5/9/2014	22000	24925	1560	1060	2425	2685
5/12/2014	23000	26075	1570	1090	2430	2660
5/13/2014	22775	26975	1550	1110	2360	2680
5/14/2014	23975	26700	1605	1130	2345	2725
5/15/2014	23975	26700	1605	1130	2345	2725
5/16/2014	23875	26975	1610	1140	2360	2775
5/19/2014	23100	27350	1630	1120	2300	2750
5/20/2014	23000	27125	1650	1095	2215	2610
5/21/2014	23075	28000	1610	1100	2230	2650
5/22/2014	23300	29000	1615	1110	2290	2695
5/23/2014	23450	29675	1630	1100	2300	2695
5/26/2014	23500	29450	1630	1100	2260	2720
5/27/2014	23500	29450	1630	1100	2260	2720
5/28/2014	23625	29475	1615	1095	2370	2720
5/29/2014	23625	29475	1615	1095	2370	2720
5/30/2014	22650	28650	1540	1035	2310	2830
6/2/2014	22900	29750	1595	1020	2310	2820
6/3/2014	23150	30000	1580	1025	2335	2850
6/4/2014	23175	29600	1585	1045	2290	2845

Tanggal	INTP	ITMG	KLBF	LPKR	LSIP	MNCN
6/5/2014	23100	29600	1585	1055	2295	2850
6/6/2014	23600	29600	1605	1045	2270	2740
6/9/2014	23150	28500	1605	1030	2190	2855
6/10/2014	23650	28500	1670	1030	2215	2855
6/11/2014	23825	27900	1670	1050	2225	2895
6/12/2014	24425	27800	1630	1050	2220	2860
6/13/2014	24850	27700	1610	1050	2240	2850
6/16/2014	24525	27175	1600	1040	2275	2770
6/17/2014	24950	27525	1645	1050	2260	2880
6/18/2014	24200	28075	1635	1040	2300	2795
6/19/2014	24250	27200	1600	1025	2275	2730
6/20/2014	23350	26975	1620	1005	2295	2675
6/23/2014	23100	26800	1645	1000	2280	2645
6/24/2014	22900	27300	1660	965	2300	2625
6/25/2014	22575	27300	1660	940	2340	2720
6/26/2014	22600	27400	1670	960	2400	2715
6/27/2014	22500	27150	1660	945	2365	2670
6/30/2014	22550	27000	1660	960	2315	2760
7/1/2014	23000	26525	1685	955	2280	2740
7/2/2014	23150	26800	1695	965	2250	2780
7/3/2014	23075	26950	1695	980	2260	2775
7/4/2014	23375	27100	1685	1010	2250	2725
7/7/2014	25000	27250	1695	1060	2255	2730
7/8/2014	25000	26750	1715	1090	2225	2730
7/9/2014	25000	26750	1715	1090	2225	2730
7/10/2014	25500	26400	1745	1165	2280	2560
7/11/2014	25725	26000	1735	1130	2250	2635
7/14/2014	25625	25250	1700	1130	2190	2665
7/15/2014	25850	25050	1725	1150	2125	2675
7/16/2014	26100	25350	1790	1170	2130	2690
7/17/2014	25650	25100	1735	1140	2085	2640
7/18/2014	26000	25325	1720	1140	2100	2590
7/21/2014	26450	25600	1745	1160	2090	2605
7/22/2014	26250	25025	1740	1150	2000	2565
7/23/2014	26125	25250	1760	1145	2010	2580
7/24/2014	25600	26425	1750	1100	2075	2600
7/25/2014	24950	26150	1730	1100	2100	2615

Tanggal	INTP	ITMG	KLBF	LPKR	LSIP	MNCN
7/28/2014	24950	26150	1730	1100	2100	2615
7/29/2014	24950	26150	1730	1100	2100	2615
7/30/2014	24950	26150	1730	1100	2100	2615
7/31/2014	24950	26150	1730	1100	2100	2615
8/1/2014	24950	26150	1730	1100	2100	2615
8/4/2014	24350	28050	1655	1105	2115	2780
8/5/2014	24250	27300	1635	1140	2125	2775
8/6/2014	24250	27900	1595	1120	2145	2725
8/7/2014	24425	28000	1630	1130	2120	2665
8/8/2014	24200	27450	1630	1155	2125	2750
8/11/2014	24500	27400	1640	1170	2095	2880
8/12/2014	24575	27400	1640	1205	2045	2900
8/13/2014	24600	28000	1630	1220	2040	2900
8/14/2014	24600	28750	1630	1180	2045	2795
8/15/2014	24650	29225	1615	1165	2020	2900
8/18/2014	24650	29275	1630	1170	2015	2900
8/19/2014	24600	29175	1640	1165	2060	2965
8/20/2014	24550	29250	1680	1170	2045	2930
8/21/2014	24900	28500	1685	1170	2050	2870
8/22/2014	25350	27750	1690	1150	2030	2915
8/25/2014	25150	28200	1675	1120	1960	2945
8/26/2014	24400	27900	1665	1075	1905	2820
8/27/2014	24475	28500	1665	1080	1910	2845
8/28/2014	24475	28650	1680	1085	1905	2835
8/29/2014	24250	28175	1660	1070	1870	2805
9/1/2014	24125	28775	1680	1060	1835	2810
9/2/2014	24450	28750	1675	1050	1870	2795
9/3/2014	24600	29275	1685	1070	1915	2810
9/4/2014	24225	29200	1680	1065	1890	2760
9/5/2014	24100	28800	1680	1045	1880	2760
9/8/2014	24525	28900	1690	1040	1905	2700
9/9/2014	24000	27650	1675	1015	1855	2685
9/10/2014	23750	26250	1660	1000	1775	2715
9/11/2014	23075	26050	1660	1000	1750	2715
9/12/2014	23150	26700	1665	1000	1810	2740
9/15/2014	24000	26025	1670	1015	1815	2785
9/16/2014	23525	27175	1655	1005	1815	2965

Tanggal	INTP	ITMG	KLBF	LPKR	LSIP	MNCN
9/17/2014	23600	27325	1670	1055	1875	2995
9/18/2014	23625	26775	1670	1050	1905	3090
9/19/2014	23900	27100	1675	1045	1900	3155
9/22/2014	23575	27500	1690	1035	1870	3205
9/23/2014	23200	26500	1700	1025	1865	3145
9/24/2014	23125	26300	1675	1015	1885	3155
9/25/2014	22850	26650	1700	1015	1895	3220
9/26/2014	22175	25150	1695	990	1870	3200
9/29/2014	21850	25900	1695	960	1850	3185
9/30/2014	21550	25975	1700	940	1900	3195
10/1/2014	21675	26050	1675	970	1940	3145
10/2/2014	21025	26400	1660	920	1860	3055
10/3/2014	21075	27050	1670	900	1850	2975
10/6/2014	21800	26625	1665	905	1885	2870
10/7/2014	22500	26500	1660	940	1900	2940
10/8/2014	21775	26350	1655	915	1885	2920
10/9/2014	22150	25500	1655	960	1900	2945
10/10/2014	22000	24625	1640	980	1865	2925
10/13/2014	22000	22950	1615	970	1870	2910
10/14/2014	22150	22300	1605	965	1855	2905
10/15/2014	22500	19700	1605	970	1775	2950
10/16/2014	22325	20125	1670	975	1750	2970
10/17/2014	22900	19500	1690	1030	1865	3025
10/20/2014	23725	20000	1685	1005	1780	3035
10/21/2014	23700	20075	1700	1010	1750	3010
10/22/2014	23925	21075	1685	1045	1780	2975
10/23/2014	23750	21500	1700	1050	1805	2920
10/24/2014	23875	21650	1700	1055	1845	2815
10/27/2014	23875	21700	1660	1045	1825	2775
10/28/2014	23600	21200	1680	1040	1805	2800
10/29/2014	24025	21850	1705	1060	1880	2820
10/30/2014	23550	20900	1710	1070	1955	2800
10/31/2014	24000	21175	1705	1070	1945	2800
11/3/2014	23975	20150	1685	1075	1995	2795
11/4/2014	23575	19750	1705	1075	1960	2780
11/5/2014	23750	19875	1680	1040	1915	2740
11/6/2014	23550	19725	1685	1030	1940	2665

Tanggal	INTP	ITMG	KLBF	LPKR	LSIP	MNCN
11/7/2014	22875	19900	1655	1005	1890	2585
11/10/2014	22525	19700	1650	1020	1885	2565
11/11/2014	23175	20075	1690	1030	1930	2440
11/12/2014	23425	19425	1685	1035	1940	2350
11/13/2014	23925	18200	1685	1030	1945	2410
11/14/2014	24200	17650	1695	1030	1895	2315
11/17/2014	24225	18350	1725	1030	1900	2275
11/18/2014	24500	18425	1740	1060	1915	2375
11/19/2014	24475	18350	1780	1065	1930	2375
11/20/2014	24250	18100	1760	1075	1980	2330
11/21/2014	24400	18125	1750	1130	2035	2360
11/24/2014	24600	18475	1780	1130	2035	2465
11/25/2014	24750	18500	1770	1140	1990	2510
11/26/2014	24900	18700	1755	1150	2000	2480
11/27/2014	24925	19000	1740	1160	2025	2480
11/28/2014	24675	19025	1750	1165	1985	2405
12/1/2014	25425	18400	1765	1155	1910	2450
12/2/2014	25675	18125	1795	1175	1910	2450
12/3/2014	25200	17950	1830	1145	1930	2410
12/4/2014	25125	18325	1800	1175	2005	2420
12/5/2014	25200	18000	1780	1175	2025	2315
12/8/2014	25100	17975	1725	1155	1975	2250
12/9/2014	25000	17700	1725	1110	1955	2200
12/10/2014	25200	16700	1770	1130	1955	2265
12/11/2014	25200	16100	1770	1120	1975	2315
12/12/2014	25075	16300	1775	1100	1945	2375
12/15/2014	24400	16000	1800	1070	1910	2420
12/16/2014	23275	15300	1740	1015	1860	2335
12/17/2014	23225	15250	1725	995	1885	2455
12/18/2014	23675	15300	1775	1030	1925	2480
12/19/2014	24450	15700	1800	1025	1925	2505
12/22/2014	24750	15650	1825	990	1900	2510
12/23/2014	24750	15575	1820	990	1895	2515
12/24/2014	24800	15600	1830	990	1875	2545
12/25/2014	24800	15600	1830	990	1875	2545
12/26/2014	24800	15600	1830	990	1875	2545
12/29/2014	24700	15450	1830	1020	1910	2545

Tanggal	INTP	ITMG	KLBF	LPKR	LSIP	MNCN
12/30/2014	25000	15375	1830	1020	1890	2540
12/31/2014	25000	15375	1830	1020	1890	2540
1/1/2015	25000	15375	1830	1020	1890	2540
1/2/2015	24800	15900	1810	1030	1905	2580
1/5/2015	24775	15500	1810	1025	1930	2520
1/6/2015	24225	14575	1810	1000	1900	2585
1/7/2015	24625	14450	1825	1015	1915	2640
1/8/2015	24600	14475	1805	1025	2020	2645
1/9/2015	24175	15350	1790	1045	2020	2630
1/12/2015	24200	14625	1785	1040	2005	2675
1/13/2015	24650	14575	1810	1020	2015	2900
1/14/2015	24375	14975	1785	1005	1940	2765
1/15/2015	24850	15175	1780	1030	1970	2765
1/16/2015	22300	14900	1785	1015	1915	2680
1/19/2015	21825	14900	1790	1015	1895	2685
1/20/2015	22350	15125	1800	1030	1915	2705
1/21/2015	22125	15175	1810	1040	1905	2875
1/22/2015	22800	15325	1840	1065	1880	2895
1/23/2015	23000	15175	1880	1125	1865	2900
1/26/2015	22950	15025	1850	1095	1815	2800
1/27/2015	23000	15325	1855	1095	1840	2860
1/28/2015	23000	15400	1860	1090	1845	2855
1/29/2015	22875	15650	1845	1140	1825	2860
1/30/2015	23000	16750	1865	1135	1840	2860
2/2/2015	22900	16450	1835	1100	1815	2845
2/3/2015	23150	16650	1825	1115	1785	2930
2/4/2015	23300	16650	1835	1110	1785	3025
2/5/2015	23225	16325	1825	1105	1865	3020
2/6/2015	23450	16600	1835	1115	1950	3050
2/9/2015	23975	16450	1835	1120	1900	3065
2/10/2015	23900	16800	1840	1110	1885	3030
2/11/2015	23800	17100	1855	1110	1895	3040
2/12/2015	23400	17400	1850	1105	1900	3050
2/13/2015	23400	17575	1870	1115	1910	3055
2/16/2015	23425	17675	1800	1115	1900	3085
2/17/2015	23800	18425	1810	1115	1900	3040
2/18/2015	23700	18425	1805	1170	1895	3055

Tanggal	INTP	ITMG	KLBF	LPKR	LSIP	MNCN
2/19/2015	23700	18425	1805	1170	1895	3055
2/20/2015	23650	18200	1790	1165	1875	3075
2/23/2015	23950	17750	1795	1145	1825	3060
2/24/2015	23950	16700	1815	1155	1805	3080
2/25/2015	24125	16700	1820	1165	1815	3115
2/26/2015	24050	16625	1815	1170	1835	3120
2/27/2015	24050	16900	1805	1180	1880	3150
3/2/2015	24000	17525	1830	1175	1915	3150
3/3/2015	24100	17500	1825	1170	1920	3105
3/4/2015	24000	17000	1835	1145	1895	3085
3/5/2015	23900	16900	1805	1145	1910	3015
3/6/2015	24300	17100	1845	1160	1875	3055
3/9/2015	24000	16800	1815	1110	1890	3000
3/10/2015	23800	16750	1800	1110	1875	2920
3/11/2015	23000	16375	1785	1105	1845	2925
3/12/2015	22500	16950	1790	1105	1845	2925
3/13/2015	22200	17300	1800	1095	1840	2895

Tanggal	MPPA	PGAS	PTBA	PTPP	SILO	SMGR
1/1/2014	1940	4475	10200	1160	9500	14150
1/2/2014	1950	4600	10400	1190	9500	14500
1/3/2014	1920	4550	10000	1170	9500	14350
1/6/2014	1840	4400	9300	1140	9500	14300
1/7/2014	1750	4270	9125	1125	9500	14275
1/8/2014	1730	4250	9375	1145	9475	14125
1/9/2014	1765	4280	9200	1150	9500	14100
1/10/2014	1750	4435	9175	1225	9500	14900
1/13/2014	1790	4420	9150	1315	9500	15525
1/14/2014	1790	4420	9150	1315	9500	15525
1/15/2014	1875	4370	9250	1300	9500	15675
1/16/2014	1880	4260	9150	1320	9475	15200
1/17/2014	1880	4385	9475	1340	9450	15200
1/20/2014	1880	4695	9625	1345	9450	15075
1/21/2014	1920	4700	9700	1340	9450	14975
1/22/2014	1920	4725	9950	1305	9600	14675
1/23/2014	1995	4685	9750	1310	9600	14900
1/24/2014	2005	4700	9600	1295	9600	14550
1/27/2014	1935	4560	9300	1260	9600	13975
1/28/2014	1975	4600	9300	1285	9600	14000
1/29/2014	1995	4760	9450	1315	9575	14400
1/30/2014	2005	4770	9250	1350	9625	14200
1/31/2014	2005	4770	9250	1350	9625	14200
2/3/2014	2035	4790	9250	1360	9650	14000
2/4/2014	2035	4745	9125	1350	9650	13875
2/5/2014	2060	4820	9275	1380	9700	14425
2/6/2014	2110	4830	9650	1390	9750	14550
2/7/2014	2175	4830	9625	1390	9800	14950
2/10/2014	2065	4825	9600	1350	9825	15075
2/11/2014	2070	4800	9650	1345	9800	15100
2/12/2014	2125	4805	9600	1355	9900	15100
2/13/2014	2150	4790	9350	1365	9950	15100
2/14/2014	2145	4930	9275	1400	10000	14850
2/17/2014	2160	4955	9250	1450	10500	15225
2/18/2014	2155	4965	9300	1430	10500	15000
2/19/2014	2175	5050	9350	1390	10500	15000
2/20/2014	2180	5050	9300	1370	10500	15100

Tanggal	MPPA	PGAS	PTBA	PTPP	SILO	SMGR
2/21/2014	2160	5000	9325	1405	10500	15075
2/24/2014	2120	5000	9225	1405	10500	14900
2/25/2014	2095	4950	9150	1405	10500	14650
2/26/2014	2035	4865	9200	1385	10475	14375
2/27/2014	2030	4900	9350	1425	10500	14450
2/28/2014	2165	4900	9575	1405	10500	15000
3/3/2014	2145	4940	9350	1420	10475	14700
3/4/2014	2145	4945	9525	1510	10500	14700
3/5/2014	2165	5000	9525	1535	10700	14875
3/6/2014	2175	5000	9525	1565	10975	15100
3/7/2014	2175	4960	9425	1575	11150	15300
3/10/2014	2190	4960	9525	1590	11150	15300
3/11/2014	2225	4915	9550	1645	11150	15450
3/12/2014	2255	4985	9275	1645	11275	15125
3/13/2014	2305	5175	9375	1665	10400	15100
3/14/2014	2395	5275	9250	1825	10300	16000
3/17/2014	2500	5300	9275	1810	10400	16500
3/18/2014	2500	5175	9275	1785	10400	16075
3/19/2014	2600	5075	9375	1775	10375	16000
3/20/2014	2595	4880	9150	1735	10300	15300
3/21/2014	2635	5175	9350	1790	10350	15400
3/24/2014	2690	4995	9275	1790	10400	15750
3/25/2014	2695	4950	9200	1790	10350	15750
3/26/2014	2730	5025	9200	1810	10350	15700
3/27/2014	2690	5125	9350	1825	10350	15700
3/28/2014	2685	5125	9325	1830	10300	15800
3/31/2014	2685	5125	9325	1830	10300	15800
4/1/2014	2750	5250	9450	1880	10350	16500
4/2/2014	2770	5125	9450	1915	10475	16600
4/3/2014	2780	5150	9425	1910	10575	17000
4/4/2014	2940	5125	9325	1905	10400	16625
4/7/2014	2940	5325	9400	1910	10400	16850
4/8/2014	2925	5275	9400	1905	10500	16800
4/9/2014	2925	5275	9400	1905	10500	16800
4/10/2014	2955	5200	9325	1695	10200	15675
4/11/2014	2910	5275	9700	1675	10450	15325
4/14/2014	2840	5325	9750	1775	10500	15925

Tanggal	MPPA	PGAS	PTBA	PTPP	SILO	SMGR
4/15/2014	2790	5400	9575	1805	10475	15925
4/16/2014	2715	5250	9625	1805	10500	15950
4/17/2014	2640	5350	9700	1800	10725	15825
4/18/2014	2640	5350	9700	1800	10725	15825
4/21/2014	2685	5400	9725	1790	10700	15775
4/22/2014	2700	5400	9950	1790	10700	15700
4/23/2014	2750	5425	10200	1785	10700	15700
4/24/2014	2795	5475	10075	1810	10825	15525
4/25/2014	2795	5525	10150	1855	10850	15700
4/28/2014	2765	5475	10175	1785	10825	15425
4/29/2014	2765	5300	9800	1830	10900	14975
4/30/2014	2770	5325	9875	1845	11000	14850
5/1/2014	2770	5325	9875	1845	11000	14850
5/2/2014	2755	5300	9800	1855	12000	14600
5/5/2014	2755	5275	9675	1870	12000	14675
5/6/2014	2595	5275	9725	1850	12000	14525
5/7/2014	2595	5350	9725	1900	12000	14275
5/8/2014	2640	5275	9750	1915	12000	14700
5/9/2014	2630	5275	9725	1915	12025	14800
5/12/2014	2680	5475	10150	1910	12025	15600
5/13/2014	2745	5450	10375	1915	12075	15600
5/14/2014	2790	5475	10575	1955	12250	15950
5/15/2014	2790	5475	10575	1955	12250	15950
5/16/2014	2795	5525	10825	1930	12375	15950
5/19/2014	2810	5575	10925	1840	13025	15275
5/20/2014	2845	5475	10525	1805	13050	14850
5/21/2014	2890	5600	10975	1865	13050	14975
5/22/2014	2920	5725	11400	1905	12500	14950
5/23/2014	2965	5750	11575	1915	13050	15025
5/26/2014	2840	5700	11450	1895	13200	15000
5/27/2014	2840	5700	11450	1895	13200	15000
5/28/2014	2865	5725	11150	1885	13200	15225
5/29/2014	2865	5725	11150	1885	13200	15225
5/30/2014	3100	5425	10700	1910	15000	14725
6/2/2014	3100	5250	11025	1855	14950	14850
6/3/2014	3195	5225	11275	1840	14975	15050
6/4/2014	3235	5225	11150	1840	14775	15100

Tanggal	MPPA	PGAS	PTBA	PTPP	SILO	SMGR
6/5/2014	3265	5325	11400	1810	14725	15200
6/6/2014	3295	5400	11400	1770	14725	15325
6/9/2014	3280	5425	11050	1720	14625	15000
6/10/2014	3270	5475	11125	1750	14600	15250
6/11/2014	3255	5500	11250	1810	14500	15350
6/12/2014	3265	5500	11000	1815	14475	15400
6/13/2014	3290	5425	10900	1815	14450	15425
6/16/2014	3360	5300	10475	1840	14375	15375
6/17/2014	3315	5450	10825	1825	14325	15425
6/18/2014	3345	5500	10525	1780	14300	15200
6/19/2014	3330	5500	10800	1780	14300	15000
6/20/2014	3205	5450	10600	1775	14300	14925
6/23/2014	3050	5450	10725	1775	14300	15000
6/24/2014	3000	5400	10425	1815	14450	15000
6/25/2014	2915	5400	10300	1795	14500	15000
6/26/2014	2960	5500	10550	1805	14600	15100
6/27/2014	2910	5450	10625	1780	14800	14975
6/30/2014	3125	5575	10725	1850	14450	15075
7/1/2014	3125	5500	10550	1825	14000	15075
7/2/2014	3125	5525	10750	1815	14000	15075
7/3/2014	3055	5450	10725	1815	14000	15025
7/4/2014	3005	5425	10650	1870	14000	15125
7/7/2014	3015	5525	11200	2010	14000	15925
7/8/2014	2980	5525	11125	2025	13975	16200
7/9/2014	2980	5525	11125	2025	13975	16200
7/10/2014	2975	5700	11225	2155	14000	16725
7/11/2014	2945	5650	10750	2080	14000	16650
7/14/2014	2935	5700	10750	2085	14000	16650
7/15/2014	2935	5725	10750	2210	14000	16925
7/16/2014	2995	5900	10800	2255	13975	17050
7/17/2014	2675	5875	10500	2265	13950	16550
7/18/2014	2895	5900	10575	2300	13800	16700
7/21/2014	2975	6025	10950	2390	14000	16975
7/22/2014	2935	6075	10650	2365	14225	16625
7/23/2014	2920	6100	10750	2365	14300	16875
7/24/2014	2930	6000	11125	2275	14300	16650
7/25/2014	2945	5900	11650	2260	14300	16575

Tanggal	MPPA	PGAS	PTBA	PTPP	SILO	SMGR
7/28/2014	2945	5900	11650	2260	14300	16575
7/29/2014	2945	5900	11650	2260	14300	16575
7/30/2014	2945	5900	11650	2260	14300	16575
7/31/2014	2945	5900	11650	2260	14300	16575
8/1/2014	2945	5900	11650	2260	14300	16575
8/4/2014	2895	6100	12500	2285	14550	16725
8/5/2014	2825	6000	12700	2325	14325	16500
8/6/2014	2755	5775	12500	2290	14300	16400
8/7/2014	2670	5725	12875	2280	15000	16350
8/8/2014	2710	5725	12950	2290	15000	16250
8/11/2014	2790	5850	12600	2350	15000	16575
8/12/2014	2830	5925	12400	2365	15000	16650
8/13/2014	2950	5950	12700	2435	14000	16725
8/14/2014	2950	5850	12900	2460	15100	16450
8/15/2014	2955	5875	12775	2450	15300	16475
8/18/2014	3050	5850	13775	2445	15400	16650
8/19/2014	3105	5850	13600	2435	15550	16675
8/20/2014	3100	5900	13650	2460	15500	16600
8/21/2014	3090	5950	13400	2470	15500	16650
8/22/2014	3100	5975	13625	2430	15550	16800
8/25/2014	3095	5975	13275	2460	15525	16775
8/26/2014	3010	5950	13275	2425	14700	16450
8/27/2014	2970	5950	13575	2425	14900	16250
8/28/2014	3065	5950	13600	2425	15075	16400
8/29/2014	3080	5800	13350	2465	15075	16225
9/1/2014	3080	5825	13425	2475	15075	16250
9/2/2014	3120	5850	13550	2475	15100	16275
9/3/2014	3160	5925	13900	2510	15150	16425
9/4/2014	3105	5950	13925	2480	15350	16250
9/5/2014	3160	5975	13875	2460	15300	16375
9/8/2014	3200	5950	13975	2450	15325	16300
9/9/2014	3195	5925	13500	2420	15250	15925
9/10/2014	3195	5950	13075	2375	14875	15825
9/11/2014	3195	5950	12900	2395	15300	15700
9/12/2014	3195	5950	13275	2405	15050	15775
9/15/2014	3250	6000	13125	2395	15550	16175
9/16/2014	3300	5950	12800	2375	15600	16175

Tanggal	MPPA	PGAS	PTBA	PTPP	SILO	SMGR
9/17/2014	3300	5950	12975	2405	15600	16375
9/18/2014	3250	6025	12975	2395	15225	16425
9/19/2014	3250	5925	12900	2410	15900	16325
9/22/2014	3245	6050	12825	2375	15825	16275
9/23/2014	3115	6050	13375	2335	15900	16125
9/24/2014	3145	6000	13150	2310	15900	15975
9/25/2014	3300	6025	13450	2325	15525	15950
9/26/2014	3330	6000	13100	2185	15700	15125
9/29/2014	3215	6025	13325	2150	15675	15250
9/30/2014	3150	6000	13200	2150	15025	15425
10/1/2014	3150	5900	13000	2280	15425	15150
10/2/2014	3055	5750	12875	2200	15325	14700
10/3/2014	2905	5850	12875	2180	15200	14625
10/6/2014	2935	5825	12800	2205	15000	15050
10/7/2014	2880	5800	13300	2300	14725	15400
10/8/2014	2795	5725	13300	2245	14500	14750
10/9/2014	2805	5775	13000	2270	14375	14825
10/10/2014	2650	5750	12800	2225	14150	14850
10/13/2014	2725	5700	12175	2240	13800	15100
10/14/2014	3000	5800	11975	2285	13750	15100
10/15/2014	3020	5800	11375	2375	14000	15625
10/16/2014	2905	5800	11975	2395	13950	15500
10/17/2014	2955	5775	12650	2460	13875	16000
10/20/2014	3085	5725	12300	2430	13500	16000
10/21/2014	3000	5675	12075	2465	13275	15700
10/22/2014	3185	5725	12500	2475	13250	16100
10/23/2014	3140	5800	12450	2490	13425	16100
10/24/2014	3115	5800	12275	2445	13325	15900
10/27/2014	3250	5825	12325	2500	13475	15800
10/28/2014	3295	5850	11875	2500	13675	15575
10/29/2014	3230	5925	12550	2570	13775	16025
10/30/2014	3200	5875	12625	2620	13775	15700
10/31/2014	3145	5950	12950	2630	13775	15875
11/3/2014	3160	5950	12800	2645	13800	15775
11/4/2014	3075	5875	12675	2600	14300	15700
11/5/2014	3080	5925	12675	2585	14600	15600
11/6/2014	3180	5900	12575	2655	14500	15375

Tanggal	MPPA	PGAS	PTBA	PTPP	SILO	SMGR
11/7/2014	3215	5900	12550	2670	14500	15300
11/10/2014	3130	5825	12650	2715	14250	15200
11/11/2014	3085	6000	12875	2785	14450	15300
11/12/2014	3000	6000	12600	2770	14425	15475
11/13/2014	3100	6000	12350	2795	14350	15600
11/14/2014	3040	6050	11975	2865	14000	15975
11/17/2014	3115	6075	12300	2925	13875	15850
11/18/2014	3070	6150	12350	2970	13750	15950
11/19/2014	3180	6175	12300	2970	15400	16075
11/20/2014	3110	6175	12450	2955	14875	16000
11/21/2014	3230	6150	12800	2975	14300	16100
11/24/2014	3275	6125	13300	3010	14150	16300
11/25/2014	3330	6050	12950	2990	14350	16075
11/26/2014	3285	6075	13200	3020	14025	16000
11/27/2014	3200	6000	13375	3000	13450	16050
11/28/2014	3265	5950	13150	3060	13625	16000
12/1/2014	3270	5950	13100	3235	13600	16675
12/2/2014	3375	6050	12825	3250	13600	16500
12/3/2014	3475	6000	12900	3225	13600	16575
12/4/2014	3450	5975	13500	3235	14225	16500
12/5/2014	3450	6000	13375	3235	14025	16550
12/8/2014	3450	5975	13100	3140	14025	16625
12/9/2014	3580	5850	13250	3175	14125	16475
12/10/2014	3585	5975	13150	3310	13975	16550
12/11/2014	3590	5975	13300	3310	14000	16375
12/12/2014	3600	6000	12950	3325	14600	16525
12/15/2014	3500	5925	12775	3315	14075	16150
12/16/2014	3320	5850	12400	3235	14000	15500
12/17/2014	3240	5800	12950	3200	14000	15350
12/18/2014	3195	5850	13350	3300	14250	15800
12/19/2014	3150	5825	13000	3455	13925	15975
12/22/2014	3170	5850	12750	3435	13875	16000
12/23/2014	3115	5925	12525	3450	13875	16075
12/24/2014	3075	6000	12625	3505	13800	16100
12/25/2014	3075	6000	12625	3505	13800	16100
12/26/2014	3075	6000	12625	3505	13800	16100
12/29/2014	3075	5975	12525	3575	13800	16175

Tanggal	MPPA	PGAS	PTBA	PTPP	SILO	SMGR
12/30/2014	3050	6000	12500	3575	13700	16200
12/31/2014	3050	6000	12500	3575	13700	16200
1/1/2015	3050	6000	12500	3575	13700	16200
1/2/2015	3100	5975	12375	3590	13775	16200
1/5/2015	3055	5900	12350	3540	13750	16225
1/6/2015	3035	5800	12075	3540	13600	15925
1/7/2015	2965	5800	12100	3685	13600	15975
1/8/2015	2870	5800	11800	3755	13575	15875
1/9/2015	2910	5800	11800	3750	13600	15750
1/12/2015	3000	5800	11525	3670	13575	15950
1/13/2015	3080	5625	11200	3745	13500	16150
1/14/2015	3010	5450	11200	3685	13225	15925
1/15/2015	2955	5500	11200	3695	13100	16200
1/16/2015	2905	5475	10725	3670	13100	15000
1/19/2015	2930	5200	10400	3650	13125	14100
1/20/2015	2950	5275	10725	3645	13050	14175
1/21/2015	3050	5350	11150	3630	13050	14100
1/22/2015	3290	5375	11750	3805	13275	14400
1/23/2015	3410	5375	11625	3800	13475	14475
1/26/2015	3430	5250	11225	3750	13325	14475
1/27/2015	3575	5275	11400	3780	13300	14525
1/28/2015	3560	5225	11525	3800	13300	14475
1/29/2015	3600	5075	11325	3800	13300	14400
1/30/2015	3800	5050	11375	3915	13400	14575
2/2/2015	3590	5050	11375	3970	13500	14500
2/3/2015	3770	5200	11425	4120	13475	14675
2/4/2015	3770	5375	11500	3950	13325	14775
2/5/2015	3880	5250	11375	3990	13350	14625
2/6/2015	3800	5250	11600	3995	12550	14775
2/9/2015	3890	5275	11400	3955	12150	14900
2/10/2015	3930	5250	11175	3920	12225	14725
2/11/2015	3930	5300	11025	3960	12300	14725
2/12/2015	3845	5300	11225	3930	12250	14400
2/13/2015	4045	5300	11475	3930	12400	14450
2/16/2015	4200	5300	11150	3865	12225	14500
2/17/2015	4300	5375	11075	3875	12225	14675
2/18/2015	4420	5375	10875	3945	12250	14775

Tanggal	MPPA	PGAS	PTBA	PTPP	SILO	SMGR
2/19/2015	4420	5375	10875	3945	12250	14775
2/20/2015	4470	5375	10600	3965	12250	14750
2/23/2015	4470	5425	10475	4055	12250	14800
2/24/2015	4400	5475	10400	4055	12100	14925
2/25/2015	4305	5375	10425	4030	12250	15150
2/26/2015	4180	5300	10425	4040	12250	15100
2/27/2015	4180	5200	10675	4060	12225	14875
3/2/2015	4305	5300	11000	4060	12225	14900
3/3/2015	4440	5350	11025	3980	12225	14825
3/4/2015	4225	5250	10800	3950	12200	14875
3/5/2015	4065	5275	10825	3980	12500	14900
3/6/2015	4110	5350	10925	3960	13100	14950
3/9/2015	4015	5350	10775	3885	13700	14750
3/10/2015	4080	5225	10600	3905	13750	14700
3/11/2015	4150	5200	10225	3800	13500	14450
3/12/2015	4200	5200	10650	3775	13475	14375
3/13/2015	4330	5200	10425	3770	13450	14225

Tanggal	SMRA	SSMS	TLKM	UNTR	UNVR	WIKA
1/1/2014	780	820	2150	19000	26000	1580
1/2/2014	820	880	2175	19350	26800	1660
1/3/2014	820	880	2125	19550	26500	1660
1/6/2014	785	875	2085	19475	26750	1625
1/7/2014	765	880	2070	19750	26200	1580
1/8/2014	805	900	2100	19450	26200	1645
1/9/2014	850	890	2085	18800	26075	1655
1/10/2014	900	920	2145	19000	25900	1780
1/13/2014	955	850	2220	19000	27025	1940
1/14/2014	955	850	2220	19000	27025	1940
1/15/2014	950	860	2205	18825	28025	1940
1/16/2014	905	875	2230	19000	27800	1930
1/17/2014	900	895	2225	19300	27650	1955
1/20/2014	925	870	2250	19500	28050	1935
1/21/2014	955	840	2255	19800	28150	1905
1/22/2014	945	825	2230	20950	28500	1845
1/23/2014	950	815	2225	20950	28575	1915
1/24/2014	940	810	2210	19700	28075	1920
1/27/2014	905	810	2150	18650	27125	1835
1/28/2014	900	845	2150	18700	27700	1860
1/29/2014	920	840	2230	19400	28500	1930
1/30/2014	955	840	2275	19300	28550	1950
1/31/2014	955	840	2275	19300	28550	1950
2/3/2014	955	845	2220	18975	28400	1975
2/4/2014	920	825	2195	18300	27850	1955
2/5/2014	910	825	2235	17975	28125	2020
2/6/2014	925	860	2305	17900	28200	2035
2/7/2014	945	875	2295	18200	28225	2030
2/10/2014	980	905	2295	17975	28100	1990
2/11/2014	1000	900	2275	18450	27600	1985
2/12/2014	995	905	2290	18500	28000	1985
2/13/2014	970	900	2265	18625	28125	1985
2/14/2014	975	930	2250	18300	28375	2025
2/17/2014	1025	930	2275	18475	28375	2090
2/18/2014	1045	940	2305	18525	28075	2070
2/19/2014	1000	945	2330	18575	28400	1995
2/20/2014	985	955	2360	18650	28300	1940

Tanggal	SMRA	SSMS	TLKM	UNTR	UNVR	WIKA
2/21/2014	1045	950	2400	18600	28400	1995
2/24/2014	1060	950	2375	18525	28375	2005
2/25/2014	1045	955	2290	18475	28400	2075
2/26/2014	1020	955	2285	18325	28025	2080
2/27/2014	1000	970	2285	18550	28025	2145
2/28/2014	1005	995	2325	18975	28575	2145
3/3/2014	990	995	2300	18850	28275	2155
3/4/2014	1050	985	2300	19050	28025	2235
3/5/2014	1050	995	2320	19400	28125	2280
3/6/2014	1075	995	2310	20000	28300	2280
3/7/2014	1065	1020	2295	19400	28125	2235
3/10/2014	1070	1005	2185	19350	28250	2255
3/11/2014	1100	1040	2180	19825	28475	2280
3/12/2014	1090	1035	2165	19500	29000	2235
3/13/2014	1080	1030	2190	19800	30300	2280
3/14/2014	1120	1065	2280	20225	30875	2490
3/17/2014	1150	1085	2250	20225	29725	2465
3/18/2014	1095	1065	2210	20225	28975	2410
3/19/2014	1125	1070	2260	20600	28900	2410
3/20/2014	1045	1055	2190	19750	28125	2335
3/21/2014	1050	1045	2160	19900	28125	2360
3/24/2014	1090	1055	2230	20400	28300	2385
3/25/2014	1070	1045	2190	20750	28250	2360
3/26/2014	1070	1035	2210	20100	28725	2405
3/27/2014	1060	1035	2175	20100	28700	2395
3/28/2014	1065	1035	2215	20750	29250	2390
3/31/2014	1065	1035	2215	20750	29250	2390
4/1/2014	1125	1055	2255	21000	30000	2435
4/2/2014	1095	1055	2250	20950	29925	2495
4/3/2014	1130	1080	2260	20925	30000	2500
4/4/2014	1135	1090	2275	19950	29400	2495
4/7/2014	1130	1095	2320	20700	29950	2515
4/8/2014	1115	1100	2330	20900	29675	2440
4/9/2014	1115	1100	2330	20900	29675	2440
4/10/2014	1020	1090	2260	20500	29550	2130
4/11/2014	1030	1095	2315	20925	30525	2120
4/14/2014	1070	1100	2340	21200	30750	2265

Tanggal	SMRA	SSMS	TLKM	UNTR	UNVR	WIKA
4/15/2014	1120	1105	2300	21500	30675	2265
4/16/2014	1105	1130	2320	21250	30100	2240
4/17/2014	1100	1145	2325	21600	30800	2230
4/18/2014	1100	1145	2325	21600	30800	2230
4/21/2014	1085	1145	2315	21600	30700	2190
4/22/2014	1090	1145	2335	21900	30825	2185
4/23/2014	1090	1145	2340	22000	29975	2160
4/24/2014	1130	1145	2355	21950	29300	2220
4/25/2014	1115	1150	2365	21750	29025	2330
4/28/2014	1085	1175	2330	21000	28575	2290
4/29/2014	1090	1200	2270	21900	29000	2295
4/30/2014	1110	1200	2265	21700	29250	2265
5/1/2014	1110	1200	2265	21700	29250	2265
5/2/2014	1105	1240	2300	22200	29200	2265
5/5/2014	1095	1285	2325	22100	29725	2255
5/6/2014	1095	1280	2330	22150	29375	2235
5/7/2014	1115	1295	2350	22275	30225	2285
5/8/2014	1180	1320	2345	22225	30400	2340
5/9/2014	1250	1300	2350	22300	30750	2350
5/12/2014	1275	1295	2350	22375	30575	2340
5/13/2014	1250	1275	2360	22400	30200	2345
5/14/2014	1270	1280	2400	22450	30800	2400
5/15/2014	1270	1280	2400	22450	30800	2400
5/16/2014	1265	1285	2535	22000	30800	2410
5/19/2014	1260	1255	2580	21825	30500	2340
5/20/2014	1240	1235	2430	21175	29600	2340
5/21/2014	1260	1245	2480	21450	30000	2360
5/22/2014	1275	1250	2535	21650	30025	2390
5/23/2014	1250	1230	2535	21625	30025	2375
5/26/2014	1235	1230	2565	21625	30125	2360
5/27/2014	1235	1230	2565	21625	30125	2360
5/28/2014	1280	1250	2550	22000	30200	2350
5/29/2014	1280	1250	2550	22000	30200	2350
5/30/2014	1255	1245	2575	21675	29125	2345
6/2/2014	1235	1290	2520	22175	29750	2305
6/3/2014	1210	1290	2550	22350	30050	2310
6/4/2014	1205	1275	2520	22450	30275	2330

Tanggal	SMRA	SSMS	TLKM	UNTR	UNVR	WIKA
6/5/2014	1195	1280	2520	22550	30450	2315
6/6/2014	1185	1275	2530	22850	30475	2275
6/9/2014	1175	1275	2470	22650	29975	2205
6/10/2014	1175	1275	2525	22875	30200	2220
6/11/2014	1225	1275	2480	23000	30475	2300
6/12/2014	1235	1275	2405	23000	30000	2300
6/13/2014	1215	1280	2440	22900	29800	2270
6/16/2014	1220	1275	2410	21975	29650	2275
6/17/2014	1195	1280	2420	22525	29500	2260
6/18/2014	1175	1280	2420	22525	29400	2225
6/19/2014	1150	1250	2410	22525	29550	2180
6/20/2014	1155	1255	2410	22550	29875	2180
6/23/2014	1115	1260	2455	22725	29800	2160
6/24/2014	1150	1260	2465	23000	29700	2220
6/25/2014	1100	1260	2450	22900	29700	2160
6/26/2014	1095	1250	2465	23075	29800	2180
6/27/2014	1110	1255	2425	22750	29475	2175
6/30/2014	1135	1245	2465	23100	29275	2215
7/1/2014	1115	1240	2480	22875	29750	2215
7/2/2014	1100	1245	2500	23150	30325	2220
7/3/2014	1110	1245	2475	23150	30200	2270
7/4/2014	1170	1245	2525	23150	30300	2320
7/7/2014	1220	1255	2600	23650	30900	2430
7/8/2014	1230	1265	2615	24000	31225	2435
7/9/2014	1230	1265	2615	24000	31225	2435
7/10/2014	1350	1270	2590	24600	31400	2500
7/11/2014	1250	1255	2575	23500	30400	2465
7/14/2014	1255	1240	2610	23725	30400	2510
7/15/2014	1310	1165	2655	23800	31375	2610
7/16/2014	1315	1170	2650	23300	31250	2615
7/17/2014	1285	1150	2645	22900	30900	2595
7/18/2014	1325	1145	2680	22725	30925	2650
7/21/2014	1365	1155	2695	23000	31100	2800
7/22/2014	1380	1165	2650	22825	31200	2765
7/23/2014	1370	1185	2610	22700	31225	2710
7/24/2014	1335	1260	2640	22900	31150	2670
7/25/2014	1350	1265	2650	22900	30750	2650

Tanggal	SMRA	SSMS	TLKM	UNTR	UNVR	WIKA
7/28/2014	1350	1265	2650	22900	30750	2650
7/29/2014	1350	1265	2650	22900	30750	2650
7/30/2014	1350	1265	2650	22900	30750	2650
7/31/2014	1350	1265	2650	22900	30750	2650
8/1/2014	1350	1265	2650	22900	30750	2650
8/4/2014	1330	1275	2690	23900	31475	2615
8/5/2014	1315	1280	2710	24025	30900	2690
8/6/2014	1295	1320	2655	23800	30750	2645
8/7/2014	1300	1320	2690	23975	30775	2650
8/8/2014	1310	1325	2700	23975	30500	2610
8/11/2014	1335	1335	2750	24175	31250	2665
8/12/2014	1330	1345	2780	23675	31350	2765
8/13/2014	1350	1350	2785	24400	32000	2790
8/14/2014	1330	1305	2755	24100	31975	2770
8/15/2014	1335	1290	2710	24125	31900	2790
8/18/2014	1350	1275	2725	24100	31500	2840
8/19/2014	1360	1270	2700	24225	31450	2885
8/20/2014	1395	1255	2725	24400	31900	2895
8/21/2014	1390	1255	2715	24175	31900	2940
8/22/2014	1390	1290	2685	23525	31600	2925
8/25/2014	1375	1275	2685	23150	31500	2915
8/26/2014	1300	1290	2705	22675	31675	2800
8/27/2014	1305	1325	2735	22125	31950	2830
8/28/2014	1330	1300	2720	22125	32100	2840
8/29/2014	1340	1305	2665	22150	31025	2870
9/1/2014	1315	1340	2710	22175	32000	2850
9/2/2014	1305	1405	2700	22225	32000	2850
9/3/2014	1315	1415	2725	22450	32000	2935
9/4/2014	1275	1430	2730	21550	31675	2885
9/5/2014	1230	1410	2730	21550	31825	2905
9/8/2014	1235	1420	2835	21800	31850	2880
9/9/2014	1225	1400	2820	21000	31300	2840
9/10/2014	1215	1385	2810	20400	31150	2845
9/11/2014	1240	1365	2795	20500	31175	2870
9/12/2014	1265	1385	2790	20850	31300	2870
9/15/2014	1285	1415	2775	20450	31325	2875
9/16/2014	1265	1410	2795	20375	31600	2835

Tanggal	SMRA	SSMS	TLKM	UNTR	UNVR	WIKA
9/17/2014	1290	1425	2850	20600	31900	2845
9/18/2014	1270	1395	2875	20775	31975	2840
9/19/2014	1300	1405	2945	21150	31750	2890
9/22/2014	1285	1410	2870	20950	31975	2870
9/23/2014	1310	1390	2890	20475	31500	2845
9/24/2014	1300	1390	2870	20600	31325	2840
9/25/2014	1305	1390	2885	20675	31300	2840
9/26/2014	1230	1360	2880	20150	31800	2665
9/29/2014	1215	1310	2910	20100	32000	2605
9/30/2014	1220	1265	2915	19900	31800	2605
10/1/2014	1215	1260	2865	19850	31800	2715
10/2/2014	1155	1250	2760	19275	31650	2610
10/3/2014	1090	1235	2790	19075	30775	2490
10/6/2014	1095	1260	2845	20000	30750	2490
10/7/2014	1155	1270	2860	20450	30650	2555
10/8/2014	1140	1230	2800	19425	30575	2500
10/9/2014	1165	1240	2800	19325	30700	2590
10/10/2014	1165	1210	2775	19150	30800	2560
10/13/2014	1160	1145	2775	18200	30500	2590
10/14/2014	1180	1045	2775	18000	30925	2675
10/15/2014	1190	1035	2855	17200	31100	2760
10/16/2014	1205	1050	2805	17175	30925	2800
10/17/2014	1250	1105	2805	17250	31950	2870
10/20/2014	1230	1100	2845	17450	31175	2880
10/21/2014	1260	1105	2850	17250	31625	2905
10/22/2014	1290	1140	2860	17475	32025	2915
10/23/2014	1310	1170	2880	17925	31200	2915
10/24/2014	1265	1200	2870	17650	30600	2895
10/27/2014	1220	1185	2805	16950	30050	2895
10/28/2014	1220	1195	2685	17050	29875	2855
10/29/2014	1235	1210	2720	17675	31100	2900
10/30/2014	1225	1235	2760	17675	30450	2890
10/31/2014	1260	1245	2750	18375	30400	2860
11/3/2014	1295	1245	2760	18350	30450	2875
11/4/2014	1280	1265	2740	17875	30375	2860
11/5/2014	1280	1215	2740	18600	30325	2800
11/6/2014	1295	1200	2710	19075	30100	2770

Tanggal	SMRA	SSMS	TLKM	UNTR	UNVR	WIKA
11/7/2014	1255	1115	2615	18850	29800	2760
11/10/2014	1240	1110	2630	18950	29925	2765
11/11/2014	1260	1150	2715	19125	30525	2880
11/12/2014	1260	1160	2730	18500	30550	2865
11/13/2014	1275	1160	2735	19000	30650	2865
11/14/2014	1260	1230	2740	19200	30450	2900
11/17/2014	1300	1285	2750	18650	31050	2955
11/18/2014	1305	1350	2755	18950	31600	3080
11/19/2014	1365	1250	2775	19275	31100	3075
11/20/2014	1355	1230	2720	18850	31400	3005
11/21/2014	1395	1265	2765	18275	31450	3005
11/24/2014	1410	1270	2815	18700	31500	3035
11/25/2014	1440	1420	2785	17700	31700	3025
11/26/2014	1445	1420	2815	18175	31600	3020
11/27/2014	1450	1460	2810	18450	32000	3000
11/28/2014	1460	1460	2825	18325	31800	3005
12/1/2014	1525	1480	2880	17925	31375	3120
12/2/2014	1560	1460	2875	17950	31275	3215
12/3/2014	1580	1450	2850	17400	31275	3195
12/4/2014	1550	1495	2845	17900	31575	3190
12/5/2014	1535	1500	2840	17675	31675	3190
12/8/2014	1495	1505	2805	17550	31150	3120
12/9/2014	1560	1510	2795	17600	31025	3115
12/10/2014	1560	1520	2835	17400	31100	3290
12/11/2014	1565	1525	2835	17225	30900	3300
12/12/2014	1595	1535	2825	17100	30975	3345
12/15/2014	1575	1530	2785	16850	31225	3295
12/16/2014	1485	1535	2745	16600	31200	3220
12/17/2014	1470	1540	2725	17250	30700	3200
12/18/2014	1515	1545	2800	17300	31700	3270
12/19/2014	1580	1700	2815	17125	32000	3345
12/22/2014	1535	1580	2825	17250	31500	3340
12/23/2014	1550	1595	2825	17250	31500	3425
12/24/2014	1530	1590	2845	17150	31525	3535
12/25/2014	1530	1590	2845	17150	31525	3535
12/26/2014	1530	1590	2845	17150	31525	3535
12/29/2014	1520	1625	2850	17200	31950	3720

Tanggal	SMRA	SSMS	TLKM	UNTR	UNVR	WIKA
12/30/2014	1520	1665	2865	17350	32300	3680
12/31/2014	1520	1665	2865	17350	32300	3680
1/1/2015	1520	1665	2865	17350	32300	3680
1/2/2015	1550	1690	2860	17300	32525	3675
1/5/2015	1570	1710	2835	16875	32475	3575
1/6/2015	1565	1710	2815	16950	32475	3555
1/7/2015	1605	1710	2810	17025	33125	3650
1/8/2015	1635	1710	2835	16900	33375	3680
1/9/2015	1590	1705	2860	17100	33225	3675
1/12/2015	1565	1700	2835	17075	32100	3600
1/13/2015	1515	1700	2840	17475	33000	3620
1/14/2015	1495	1695	2825	17450	32650	3550
1/15/2015	1545	1710	2830	17425	32725	3630
1/16/2015	1600	1690	2845	17250	33500	3565
1/19/2015	1605	1695	2855	17050	34000	3585
1/20/2015	1590	1690	2900	17125	34200	3600
1/21/2015	1610	1710	2915	17150	35950	3595
1/22/2015	1695	1670	2880	17625	35800	3640
1/23/2015	1630	1685	2890	17875	36200	3655
1/26/2015	1595	1680	2820	18050	35500	3550
1/27/2015	1585	1675	2830	18200	35525	3630
1/28/2015	1630	1670	2845	18200	35500	3675
1/29/2015	1635	1635	2860	18200	35375	3675
1/30/2015	1650	1650	2830	17900	35825	3745
2/2/2015	1620	1665	2805	17600	36175	3765
2/3/2015	1670	1665	2825	17900	36375	3815
2/4/2015	1660	1675	2845	18025	36400	3655
2/5/2015	1635	1700	2815	18000	35250	3640
2/6/2015	1720	1720	2830	18500	36650	3635
2/9/2015	1760	1710	2860	18125	36125	3620
2/10/2015	1735	1700	2845	18450	35500	3560
2/11/2015	1760	1710	2860	18575	35675	3555
2/12/2015	1745	1715	2895	18600	35675	3530
2/13/2015	1760	1740	2980	18950	36325	3525
2/16/2015	1725	1750	2890	18750	35100	3475
2/17/2015	1695	1780	2895	19000	35900	3495
2/18/2015	1815	1800	2895	19275	35500	3565

Tanggal	SMRA	SSMS	TLKM	UNTR	UNVR	WIKA
2/19/2015	1815	1800	2895	19275	35500	3565
2/20/2015	1830	1785	2890	19150	35325	3635
2/23/2015	1810	1795	2910	19225	36050	3680
2/24/2015	1805	1915	2905	19700	36025	3650
2/25/2015	1810	1930	2970	20100	36350	3670
2/26/2015	1815	1940	2975	20000	36500	3675
2/27/2015	1815	1985	2935	20750	36000	3660
3/2/2015	1795	1985	2950	21625	36400	3630
3/3/2015	1785	1985	2945	22225	36075	3595
3/4/2015	1795	1995	2910	21650	36100	3545
3/5/2015	1725	1990	2910	21775	36250	3515
3/6/2015	1665	1985	2985	21750	37800	3505
3/9/2015	1610	1990	2945	20625	37500	3425
3/10/2015	1660	2010	2945	21350	37800	3485
3/11/2015	1625	2000	2940	20925	38750	3445
3/12/2015	1620	1990	2925	20750	39825	3455
3/13/2015	1660	2000	2955	20775	39875	3405

LAMPIRAN 2 : Data harga *log-return* harian JII

Tanggal	AALI	ADRO	AKRA	ANTM	ASRI	ASII
1/2/2014	-0.0181	-0.0279	0.0226	-0.0092	0.05651	0.02182
1/3/2014	-0.0499	-0.0483	0	-0.0377	-0.0222	-0.0292
1/6/2014	-0.0627	-0.0825	-0.009	-0.0342	-0.0343	0.01471
1/7/2014	-0.0241	-0.0553	-0.0034	0	-0.0117	-0.0037
1/8/2014	0.05871	0.06596	0.00564	0.00496	0.0527	-0.0037
1/9/2014	-0.0132	0.00531	0.00337	-0.005	-0.009	-0.0037
1/10/2014	-0.0525	-0.0053	0.01336	-0.0252	0.03104	-0.0037
1/13/2014	-0.0082	0.01583	0.04963	0.01015	0.08373	0.03637
1/14/2014	0	0	0	0	0	0
1/15/2014	-0.0167	-0.0052	0	0	-0.004	0.04196
1/16/2014	0.00598	0.02598	-0.0256	0.02985	0.03759	0
1/17/2014	-0.0036	0	0.01181	-0.0148	0.00966	-0.0527
1/20/2014	0.03876	0	-0.0097	0.02457	0.00957	-0.0145
1/21/2014	0.00917	0.00512	-0.0022	0.0474	0.02817	-0.011
1/22/2014	0.00683	0.0449	-0.0109	-0.0093	-0.0377	0.00738
1/23/2014	0.04001	0	-0.0299	-0.0236	0.00957	0
1/24/2014	-0.0088	0.01453	0.00561	-0.0048	-0.029	-0.0413
1/27/2014	-0.0682	-0.0748	-0.0272	-0.0293	-0.0299	-0.0193
1/28/2014	0.0082	-0.0316	-0.0375	-0.005	0.01005	-0.0039
1/29/2014	0.00698	0.02116	0.05117	0.00496	0.03922	0.00781
1/30/2014	-0.0046	-0.0052	-0.0023	0.01961	-0.0194	0
1/31/2014	0	0	0	0	0	0
2/3/2014	0.00812	-0.043	0	-0.0098	0.00976	-0.0117
2/4/2014	-0.014	-0.0166	-0.0068	-0.0148	-0.0196	-0.0159
2/5/2014	0.00234	0.01111	-0.0196	-0.005	0.00985	0.0198
2/6/2014	0.02765	0.00551	-0.02	0	0.04786	0.00391
2/7/2014	0.0068	-0.0055	0.02004	0.00995	0.0367	0.01934
2/10/2014	0.01011	0.00551	0.03553	0.00494	-0.0274	-0.0038
2/11/2014	0.03297	0.03774	0.01453	0.02433	0.05407	0.01147
2/12/2014	0.01609	-0.0053	-0.0011	-0.0048	0	0.01134
2/13/2014	-0.015	-0.0053	-0.0033	-0.0195	-0.0177	0
2/14/2014	0.00216	0.01064	0.00334	0	0.0177	0.00749
2/17/2014	-0.013	0.03125	0.01325	0.01951	0.03449	0.01848
2/18/2014	0.01302	-0.0207	0.00438	0.02387	-0.0171	-0.0037
2/19/2014	0.02763	-0.0052	-0.0232	0	0	0.02182
2/20/2014	-0.0042	0.02598	0.01332	-0.0143	-0.0262	-0.0072

Tanggal	AALI	ADRO	AKRA	ANTM	ASRI	ASII
2/21/2014	-0.0106	-0.0051	0.00878	0.00952	0.05174	0.01081
2/24/2014	0.01269	0	0.00327	-0.0048	0	-0.0291
2/25/2014	-0.0021	-0.0314	-0.0099	-0.0144	-0.0169	-0.0111
2/26/2014	0.00315	-0.0053	0	0	-0.0348	-0.0226
2/27/2014	0.05512	0.01592	0.01203	0.00962	0.0262	0.02264
2/28/2014	0.01283	0.04628	-0.0087	-0.0048	-0.0087	0.03663
3/3/2014	-0.0039	-0.0152	0.00873	0	-0.0175	-0.0218
3/4/2014	-0.002	0.03509	0.02575	0	0.0262	0.00367
3/5/2014	0.06675	0.00491	0.01263	0.03774	0.00858	0.02888
3/6/2014	0.01828	0	-0.0063	0.04526	0.03362	0
3/7/2014	-0.0009	-0.0049	-0.0011	0	0	-0.0036
3/10/2014	0.01172	-0.0149	0.01048	-0.0269	-0.0167	0.03853
3/11/2014	-0.0027	-0.0356	-0.0073	0.01354	0.04116	-0.0034
3/12/2014	-0.0136	-0.0209	-0.018	-0.0181	-0.0081	-0.0035
3/13/2014	-0.0428	0.02611	-0.0054	0.00909	0	0.0069
3/14/2014	-0.0086	0	0.02757	0	0.032	0.06968
3/17/2014	0.00287	0.01026	0.05495	-0.0045	0.03861	0.0159
3/18/2014	-0.0038	-0.0051	-0.005	0.02247	-0.0076	-0.0288
3/19/2014	0.01429	0.02532	-0.0303	0.04773	0.0076	0.02247
3/20/2014	-0.0201	-0.0408	-0.0093	-0.0433	-0.0465	-0.0421
3/21/2014	0.00769	0.03077	0.00927	0.00442	0.00791	-0.0268
3/24/2014	0.00858	-0.0153	-0.0334	0.01747	0	-0.0103
3/25/2014	-0.0546	0.00512	0.01787	-0.0087	-0.0159	-0.0034
3/26/2014	0.01888	-0.0051	0.00727	0	-0.008	0.00687
3/27/2014	0	-0.0051	-0.0021	-0.0088	0	-0.0069
3/28/2014	0.02335	0.01026	0.00207	0	-0.0412	0.01709
3/31/2014	0	0	0	0	0	0
4/1/2014	0.00671	0.00509	0.04845	0.00877	0.04116	0.03987
4/2/2014	-0.0144	-0.0051	0	-0.0044	0.00803	0.00649
4/3/2014	-0.0176	0.00509	-0.029	0.01307	0	0.00966
4/4/2014	0	-0.0153	-0.0112	-0.0087	-0.0161	0
4/7/2014	0.01371	0.01026	0.01122	-0.0132	0.01613	0.02532
4/8/2014	0.02117	-0.0103	-0.0061	-0.0044	-0.008	0.00312
4/9/2014	0	0	0	0	0	0
4/10/2014	0.0019	-0.0156	-0.0385	-0.027	-0.1289	-0.0643
4/11/2014	0.05186	0.05599	-0.0117	-0.0138	-0.0185	0.01974
4/14/2014	0.0018	0	0.01913	0.04082	0.0367	0.00325

Tanggal	AALI	ADRO	AKRA	ANTM	ASRI	ASII
4/15/2014	-0.0191	-0.0404	0.02186	-0.0179	0	0.00324
4/16/2014	-0.0046	0.01535	-0.0114	0.01348	0.00897	0.00323
4/17/2014	0.04509	-0.0051	-0.0052	0.00445	-0.009	0.00963
4/18/2014	0	0	0	0	0	0
4/21/2014	-0.0124	-0.0051	-0.0095	0.00885	-0.009	0.00954
4/22/2014	0.00977	0.03527	0.01156	0.01747	-0.0091	-0.0063
4/23/2014	0.02876	0.05771	-0.0052	0.07101	-0.0279	0.00635
4/24/2014	-0.0034	0.01392	0.00628	-0.0204	0	0.00631
4/25/2014	-0.0244	0.0046	-0.001	-0.0166	0.03704	-0.0095
4/28/2014	0.00704	0.04045	0.00313	0.01247	-0.037	-0.0355
4/29/2014	0.01739	-0.0088	-0.0063	-0.0083	0.00939	-0.0166
4/30/2014	0.0137	0.05196	0	-0.0211	-0.0094	-0.0067
5/1/2014	0	0	0	0	0	0
5/2/2014	0.00085	-0.0387	-0.0244	-0.0215	-0.019	0
5/5/2014	0.00846	0.02169	-0.0086	0.00434	-0.0097	0
5/6/2014	-0.0196	0.01279	-0.0087	0.02141	-0.0196	-0.0034
5/7/2014	0.00429	-0.0389	-0.0044	0.00423	0.01961	0.01342
5/8/2014	-0.0069	-0.0313	0	0.01258	-0.0098	-0.0033
5/9/2014	0.00687	0.01802	-0.0011	0.05275	0.03847	0
5/12/2014	-0.0077	0.06482	0.02281	0	0.01869	0.00334
5/13/2014	-0.0174	0.02887	0.00107	0	-0.0187	-0.0101
5/14/2014	0.0096	0.00406	0.01067	-0.004	0.01869	0.02
5/15/2014	0	0	0	0	0	0
5/16/2014	0.00693	0.00806	-0.015	-0.0323	-0.0093	0.01311
5/19/2014	0.00516	0.02381	-0.0174	-0.0165	-0.0381	0.00325
5/20/2014	-0.0574	0.01942	-0.0403	-0.0042	-0.0356	-0.0263
5/21/2014	-0.0258	-0.0116	0.00909	-0.0042	0.00602	0
5/22/2014	0.00372	0.01161	0.00564	0.04919	0.00995	0.01325
5/23/2014	0.00371	0.00384	-0.0023	-0.008	-0.01	-0.0132
5/26/2014	-0.0056	0	0.00113	-0.0163	-0.006	-0.0067
5/27/2014	0	0	0	0	0	0
5/28/2014	0.03477	-0.0116	0.00449	0.00816	0.00602	0
5/29/2014	0	0	0	0	0	0
5/30/2014	-0.0172	-0.0517	-0.0781	-0.0247	0	-0.0516
6/2/2014	-0.0166	0.03608	0.04155	-0.0211	-0.0141	0.02098
6/3/2014	-0.0009	0.00393	0.01386	0.02105	0.00203	0
6/4/2014	-0.0019	0.00391	0.00572	-0.0084	-0.002	-0.0069

Tanggal	AALI	ADRO	AKRA	ANTM	ASRI	ASII
6/5/2014	0.00279	0	-0.0092	0.00419	-0.0041	-0.0035
6/6/2014	-0.0009	0.03077	-0.0116	-0.0126	-0.0061	0.00697
6/9/2014	-0.0226	-0.0308	-0.0082	-0.0301	-0.0418	0.00347
6/10/2014	0.01512	0.0155	0.0312	0.00436	0	0.02393
6/11/2014	0	0.01905	0.02804	0.01296	0.02114	0.01675
6/12/2014	-0.0094	-0.0424	0.00662	-0.0261	-0.0084	-0.01
6/13/2014	0.00284	0.00784	0.01202	0.0044	-0.0149	-0.0067
6/16/2014	0.00471	-0.0439	-0.0011	0	-0.0173	-0.0205
6/17/2014	0.01585	0.04782	-0.0109	0.01307	0.00218	-0.0035
6/18/2014	0.00461	-0.0157	0.00657	0	-0.0198	-0.0069
6/19/2014	-0.0055	-0.0281	-0.0154	-0.0131	-0.0292	-0.0035
6/20/2014	0.01471	-0.0373	-0.0224	-0.0132	0.04683	0
6/23/2014	0	-0.0256	0.00565	-0.0045	-0.0243	0.01043
6/24/2014	0.03585	-0.0175	0.01455	-0.0045	0.00445	0.0069
6/25/2014	0.02091	0.00877	0.00664	-0.0319	-0.027	-0.0104
6/26/2014	0.01029	0.04692	-0.0212	0.00922	-0.0023	0.00347
6/27/2014	-0.0207	-0.0126	-0.0125	-0.0185	0	0.01715
6/30/2014	-0.0185	-0.0085	-0.0115	0.01852	0.01138	-0.0103
7/1/2014	-0.0315	-0.0085	-0.0116	0.00913	-0.0023	0.01026
7/2/2014	0.01093	0.0296	0.02081	-0.0091	0.00678	0.01351
7/3/2014	-0.0137	-0.0084	0.02598	0.04045	0.05478	-0.0135
7/4/2014	0.01005	0	0.00777	0.01313	0.01691	0
7/7/2014	0.00995	0.00419	0.01209	0	0.04709	0.0202
7/8/2014	-0.0283	-0.0126	-0.0132	-0.0087	0	0.0198
7/9/2014	0	0	0	0	0	0
7/10/2014	0.00554	0	0.04334	-0.0044	0.0198	0.02262
7/11/2014	-0.0242	-0.0433	-0.0128	-0.0133	-0.0238	-0.0358
7/14/2014	-0.0009	-0.0224	-0.0228	0	0	-0.0066
7/15/2014	-0.02	0.03556	0.01635	0.00889	0.02381	0.01325
7/16/2014	0.00481	0.00436	0.01821	0.00881	0.03847	0
7/17/2014	-0.0067	-0.0354	-0.0346	-0.0132	0	0
7/18/2014	0.00961	0.00449	-0.0088	0.02632	0.00939	0.00656
7/21/2014	0.00382	0.01336	0.00221	0.00862	0.02765	0.00976
7/22/2014	-0.0096	-0.0315	-0.0258	-0.0261	-0.0183	0
7/23/2014	0	0.00909	0.00679	0	-0.0093	-0.0032
7/24/2014	0.02187	0.04426	0.01344	0.10844	-0.0189	-0.0033
7/25/2014	0.00469	0.02564	-0.0214	0.00394	0	0.00649

Tanggal	AALI	ADRO	AKRA	ANTM	ASRI	ASII
7/28/2014	0	0	0	0	0	0
7/29/2014	0	0	0	0	0	0
7/30/2014	0	0	0	0	0	0
7/31/2014	0	0	0	0	0	0
8/1/2014	0	0	0	0	0	0
8/4/2014	-0.017	0.04133	0.04879	-0.0402	-0.0192	0.0224
8/5/2014	0.00095	0.01606	0	0.00816	0.02871	-0.0127
8/6/2014	0.01417	0	0.00647	-0.0041	0.01869	-0.0227
8/7/2014	-0.0075	0.01188	-0.0097	0.03213	0	0.00654
8/8/2014	-0.0085	-0.0119	-0.0011	-0.0159	-0.0093	-0.0164
8/11/2014	0.01043	0.00794	0.01938	-0.004	0	0.01316
8/12/2014	-0.0095	0	-0.0032	0.00803	0	0
8/13/2014	0.00095	0.01569	0.02639	-0.004	0.01852	0.00976
8/14/2014	0	0.00775	0	-0.0081	0.01818	0
8/15/2014	-0.0086	0	0.02672	0	-0.009	-0.0098
8/18/2014	0.00096	0.01912	0.02405	-0.0041	-0.0091	0.00326
8/19/2014	0.01805	0.00755	-0.02	0	0.00913	0
8/20/2014	-0.0076	-0.0075	-0.0214	0.00406	0	0.00649
8/21/2014	-0.0067	-0.0308	0.02949	0.00404	0	0.00645
8/22/2014	-0.001	-0.0197	0.01195	-0.0081	-0.0183	-0.0065
8/25/2014	-0.0096	-0.0201	-0.01	-0.0041	-0.0282	-0.013
8/26/2014	-0.0019	0.032	-0.004	-0.029	-0.0528	-0.0033
8/27/2014	0.00193	0.05365	-0.0131	0	0.00401	0
8/28/2014	0.00385	-0.0188	0.03695	0.01253	0.0198	0.00982
8/29/2014	-0.0194	0	0.02899	-0.0083	0	-0.0131
9/1/2014	0.00196	0.0038	0.04652	-0.0297	-0.0198	0.00658
9/2/2014	0.00293	0.0113	0.03132	0	0	0.01303
9/3/2014	0.00874	0.02588	-0.0133	-0.0043	0.00995	-0.0065
9/4/2014	-0.0136	0.00364	-0.0551	0.03405	-0.018	-0.0164
9/5/2014	0.0117	-0.0147	-0.0095	-0.0126	-0.002	0.01316
9/8/2014	-0.001	0.0219	0.00948	0.02511	0.00202	-0.0099
9/9/2014	-0.0186	-0.0405	0.00471	-0.0167	-0.0142	-0.01
9/10/2014	-0.0352	-0.0344	0	-0.0342	-0.0165	-0.0236
9/11/2014	-0.0365	0	-0.0142	-0.0087	0	-0.0103
9/12/2014	-0.0085	0.01544	-0.0048	0	0.00415	-0.0035
9/15/2014	-0.0021	-0.0233	0	-0.0044	-0.0041	0.01033
9/16/2014	-0.013	-0.0039	0	0	-0.0063	-0.0069

Tanggal	AALI	ADRO	AKRA	ANTM	ASRI	ASII
9/17/2014	0.00326	0.03861	0	0.0044	0.02479	0.00344
9/18/2014	0.03303	-0.023	0.00477	0.00438	-0.0165	0.01365
9/19/2014	0.00105	-0.0196	0	-0.0401	0.01032	-0.0034
9/22/2014	-0.0116	-0.0079	0	0	-0.0103	0
9/23/2014	-0.0193	0.01188	-0.0048	0.01802	-0.0104	-0.0137
9/24/2014	0.00108	-0.0039	0.00952	0.00445	0.00418	-0.0069
9/25/2014	0.01393	0.00787	-0.0095	0.00885	0.01861	-0.0035
9/26/2014	-0.0128	-0.0648	-0.0048	-0.0313	-0.0376	-0.0247
9/29/2014	-0.0087	-0.0254	0.02375	-0.0183	-0.0259	0.00712
9/30/2014	0	0.00855	0.0232	0.0274	-0.0066	0
10/1/2014	0.00434	-0.0128	-0.0185	-0.0228	0.01527	-0.0071
10/2/2014	-0.0219	-0.0351	-0.0333	-0.0376	-0.0488	-0.0588
10/3/2014	-0.0258	-0.0135	-0.0048	-0.0193	-0.0137	0
10/6/2014	0.0034	0.03118	-0.0196	-0.0049	0	0.01876
10/7/2014	0.01683	0	-0.005	0.00489	0.016	0.01109
10/8/2014	-0.0168	0.01307	-0.0293	-0.0098	-0.0045	-0.0148
10/9/2014	0.01013	-0.0131	-0.0021	0.00491	0.00681	0.00372
10/10/2014	-0.0192	-0.0449	-0.0228	-0.0299	-0.0091	-0.034
10/13/2014	0	-0.0762	0.00837	-0.0051	-0.0023	-0.0233
10/14/2014	-0.0046	0	-0.02	0.00506	0.01138	0.00784
10/15/2014	-0.0458	-0.0718	0.02103	0.01005	-0.0091	0
10/16/2014	-0.0354	0.02625	0.01549	-0.0101	0.00456	-0.0078
10/17/2014	-0.0075	0.01542	0.00816	-0.0412	0.0702	0.03101
10/20/2014	-0.0177	-0.0206	-0.0061	0.00525	0.01681	0.0076
10/21/2014	-0.009	0.0155	-0.0165	-0.0052	-0.0021	-0.0153
10/22/2014	0.01024	0.05488	0.03172	0.01047	-0.0084	0.00766
10/23/2014	0.00254	0.01923	-0.0122	0	0.01255	0.02264
10/24/2014	0.03127	0.00475	0.00305	0	-0.0168	-0.015
10/27/2014	0	-0.0095	0.00507	-0.0157	-0.03	-0.0114
10/28/2014	-0.0161	-0.0145	-0.0287	0	-0.0066	0.01898
10/29/2014	0.05361	0.06575	-0.0084	-0.0053	0.00438	0.03327
10/30/2014	0.08741	0	0.00732	0.02105	-0.0022	0.00363
10/31/2014	0.02151	0.03132	0.02571	0.01036	0.0152	-0.0183
11/3/2014	0.01478	0.01313	-0.0153	-0.0261	-0.0152	0.01465
11/4/2014	-0.0276	-0.0087	0.00617	-0.0053	0	-0.0147
11/5/2014	-0.0087	-0.0357	-0.0082	-0.0053	-0.0044	0.0255
11/6/2014	0.00109	-0.0183	-0.0041	0.01064	-0.0022	0

Tanggal	AALI	ADRO	AKRA	ANTM	ASRI	ASII
11/7/2014	-0.0044	0.01379	-0.0094	-0.0106	-0.02	0
11/10/2014	0	-0.0092	-0.019	-0.0108	0.00224	-0.0329
11/11/2014	0.02902	0.0046	-0.0259	-0.0054	0.00447	0.02206
11/12/2014	0.02304	-0.0664	0.01198	0	0.00445	0.0322
11/13/2014	-0.0209	-0.0198	0.00432	0.02151	-0.0045	0
11/14/2014	-0.0171	0	0.00965	-0.0053	0.00445	0.01051
11/17/2014	0.01282	0.00499	-0.0054	-0.0054	0.00664	-0.007
11/18/2014	0.00846	0.0099	0.00748	0	0.01967	0.01047
11/19/2014	0.00943	0.01467	0.00213	0	0.02353	-0.007
11/20/2014	0.03282	0.0381	-0.0226	0.02653	-0.0064	-0.0392
11/21/2014	0.01303	0.00466	0.00758	0.02584	0.07183	0.01085
11/24/2014	-0.005	0.01386	0.00752	0.0202	-0.012	0.02135
11/25/2014	-0.0388	0.00458	-0.0097	-0.0101	0.01195	-0.0286
11/26/2014	0.00622	0.00909	-0.0043	-0.0204	0.00985	0.01795
11/27/2014	0.01131	-0.0045	0.00972	0.01026	0.01942	0.01062
11/28/2014	-0.0186	-0.0183	0	0	0.07411	0.00351
12/1/2014	-0.0415	-0.014	-0.0097	0	-0.018	0
12/2/2014	0.00757	0.01861	-0.0011	0.00509	0.03572	-0.0177
12/3/2014	-0.0032	0.00917	-0.0365	-0.0102	0.03449	-0.0144
12/4/2014	0.01289	0.03588	0.01898	0.00512	0.00844	0.01081
12/5/2014	0.04078	-0.0133	0.00111	-0.0154	0.00837	0.01776
12/8/2014	-0.0207	-0.0226	0.00221	-0.0052	-0.0426	0
12/9/2014	-0.001	-0.0046	-0.0133	0.00519	-0.0087	0
12/10/2014	0.00105	-0.0232	0.02101	0	0.01739	0.00702
12/11/2014	0.00418	-0.0047	0.00546	-0.0104	0.01709	-0.007
12/12/2014	-0.0136	-0.0336	0.01619	0.01558	-0.0171	0.01051
12/15/2014	-0.0235	0	0	-0.0156	-0.0351	-0.0211
12/16/2014	-0.0274	0.01453	-0.026	0.01558	-0.0935	0.01062
12/17/2014	-0.0045	0.00957	-0.0267	0.01026	0.01942	-0.0106
12/18/2014	0.03939	0.01418	-0.0228	-0.0154	0.02844	0.02461
12/19/2014	-0.0173	-0.0047	-0.0104	0.01542	-0.0284	0
12/22/2014	0.00218	0	-0.026	0.00509	0.00957	-0.0105
12/23/2014	0.01406	-0.0047	0.00716	0.03981	0	0.02083
12/24/2014	0.00107	0.00473	-0.0302	0.05689	0.02817	0.00685
12/25/2014	0	0	0	0	0	0
12/26/2014	0	0	0	0	0	0
12/29/2014	0.01913	-0.019	0	0.00917	0.03637	0.00341

Tanggal	AALI	ADRO	AKRA	ANTM	ASRI	ASII
12/30/2014	0.02083	0	0.00976	-0.0278	0	0.01015
12/31/2014	0	0	0	0	0	0
1/1/2015	0	0	0	0	0	0
1/2/2015	0.01331	0	0.08822	-0.019	0.03509	-0.0034
1/5/2015	0.00406	-0.0145	0.01105	-0.0048	-0.0174	-0.0239
1/6/2015	-0.0153	-0.0147	0	-0.0145	-0.0267	-0.0245
1/7/2015	0.01633	0	-0.0022	0.01453	0.04406	0.01408
1/8/2015	0.02103	-0.0251	0.00768	0.06963	0	-0.0105
1/9/2015	0.0293	0.0201	0.00654	-0.0273	0.01709	-0.0071
1/12/2015	-0.0068	-0.01	-0.0054	0.0046	0	-0.0036
1/13/2015	0.00387	-0.0306	0.00109	-0.0046	0	0.02469
1/14/2015	-0.0394	-0.0209	-0.0121	-0.0139	-0.0258	-0.0176
1/15/2015	0.00201	-0.0106	0.01098	0	0.02575	0.03142
1/16/2015	-0.0091	0	0.00218	-0.0141	-0.0258	0.00343
1/19/2015	-0.0091	0.01064	-0.0176	-0.0048	0.00866	0.01698
1/20/2015	0	0.03637	0	0.00475	0	0.00336
1/21/2015	-0.0134	0.02519	0.01431	-0.0048	0	0.02975
1/22/2015	-0.0073	0.0099	-0.0099	0.00475	0.0339	0.00972
1/23/2015	0	-0.0149	-0.0156	0.00473	0.0083	0.04108
1/26/2015	-0.02	-0.0202	-0.0011	-0.0287	-0.0167	-0.0062
1/27/2015	0.03138	0.0202	0.0342	0.03342	0.00837	-0.0252
1/28/2015	-0.025	-0.005	0.00217	-0.0142	-0.0084	0
1/29/2015	-0.0203	-0.0101	0.01717	0.01887	0	-0.0096
1/30/2015	0.00215	0.01511	-0.0011	-0.0047	0	0.01282
2/2/2015	0.00857	-0.005	-0.0096	-0.0094	-0.0169	-0.0128
2/3/2015	-0.0021	-0.005	-0.0141	0	0.03362	-0.0163
2/4/2015	0.00957	0.01005	0.00109	-0.0048	-0.0167	0.01303
2/5/2015	0.03432	-0.005	-0.0055	-0.0144	0.00837	-0.0229
2/6/2015	0.07673	0	0.00872	0.00482	0.04082	0.0066
2/9/2015	-0.0465	-0.0152	0.01509	-0.0048	0.01587	-0.0033
2/10/2015	-0.019	0.01519	0.00533	0	-0.0079	0.00658
2/11/2015	0.01505	-0.0152	0.01269	0.03326	0.01575	0.03226
2/12/2015	0.01287	0.00509	0.01976	-0.0141	-0.0078	0.00633
2/13/2015	0.00686	0.01511	0.00821	-0.0048	0	0.00315
2/16/2015	-0.0237	-0.0101	-0.0217	-0.0048	-0.0239	-0.019
2/17/2015	0.00797	0.01005	0.00521	-0.0145	0.016	0
2/18/2015	0.00099	-0.005	0.0093	0.00484	0.05407	0.01905

Tanggal	AALI	ADRO	AKRA	ANTM	ASRI	ASII
2/19/2015	0	0	0	0	0	0
2/20/2015	-0.01	0	0.00206	-0.0048	0.0369	-0.0127
2/23/2015	-0.0182	-0.0152	-0.0124	-0.0098	-0.0073	0.00635
2/24/2015	-0.0133	-0.0154	0.00622	-0.0148	-0.0147	0.01258
2/25/2015	0.01232	-0.0052	0.00103	-0.01	0	0.01858
2/26/2015	0.0182	-0.0157	0	0.00501	-0.0149	-0.0123
2/27/2015	-0.0121	0.01575	0.00515	0.00499	0.00749	-0.0252
3/2/2015	0.03586	0.06062	0.02133	0.00496	-0.015	0.00318
3/3/2015	0.00293	-0.0049	0.00301	-0.01	-0.0386	0.01575
3/4/2015	0.01357	-0.03	0.01195	-0.005	-0.0239	-0.0157
3/5/2015	0.01243	0.0201	0.00494	0.01	-0.0163	-0.0032
3/6/2015	-0.0057	-0.0201	-0.0199	-0.005	0	0.02826
3/9/2015	-0.0029	0.00506	0.00501	-0.0151	-0.0418	-0.0156
3/10/2015	0	-0.0051	0.0344	-0.0051	0	0.00314
3/11/2015	0.00096	-0.0309	-0.0048	-0.0103	-0.0526	-0.0158
3/12/2015	0.00191	0.01558	-0.0147	0.01535	0.00897	0.00635
3/13/2015	-0.0203	0	0.0098	-0.0102	0.00889	-0.0032

Tanggal	BMTR	BSDE	CPIN	ICBP	INCO	INDF
1/2/2014	0	0.02299	0.04349	0.02421	-0.0583	0.01504
1/3/2014	-0.0053	-0.023	-0.0361	-0.0242	-0.0513	0
1/6/2014	-0.0268	-0.0315	-0.0059	-0.0074	-0.088	-0.0037
1/7/2014	-0.0303	-0.0325	-0.024	-0.0025	0.00687	-0.0075
1/8/2014	0.02763	0.04445	0.02247	-0.0025	0.00456	0.01126
1/9/2014	-0.0027	0.00394	0.02053	-0.01	-0.023	-0.0188
1/10/2014	0.00273	0.07579	0.03002	0.0025	0.06744	0.01509
1/13/2014	0.01353	0.10718	0.06937	0.01489	0.05292	0.00746
1/14/2014	0	0	0	0	0	0
1/15/2014	0.00803	-0.0232	0.03232	0.05743	0.08305	-0.0075
1/16/2014	0.01587	-0.0376	0.00127	0.00926	-0.0134	0.00746
1/17/2014	0.00262	0.01384	-0.0051	0.00689	0.00766	-0.0075
1/20/2014	0.013	0	-0.0013	0.00457	-0.0077	0.01117
1/21/2014	0	0.04041	0.00383	0.01133	0.02093	0.0037
1/22/2014	-0.0026	-0.0066	0.0264	0.04406	0.03516	0.05736
1/23/2014	0	-0.0201	-0.0226	-0.0262	-0.0258	0.01384
1/24/2014	-0.0396	-0.024	-0.0141	-0.0089	-0.0113	0
1/27/2014	-0.0301	-0.072	-0.0065	-0.0317	-0.0764	-0.0457
1/28/2014	0.01653	0.02941	0.03563	-0.0163	-0.0331	0
1/29/2014	0.01357	0.05635	0.01858	0.04801	0.0042	-0.0036
1/30/2014	-0.0027	-0.0138	0.01462	-0.018	-0.0341	0.00719
1/31/2014	0	0	0	0	0	0
2/3/2014	-0.0274	0	-0.0257	-0.0253	0.00217	-0.0072
2/4/2014	-0.0196	-0.014	-0.0175	0.00465	-0.0022	-0.0145
2/5/2014	-0.0057	0.01051	-0.014	0.01839	0	0.0073
2/6/2014	0.03086	0.0443	0.00383	0.01133	0.00864	0.02158
2/7/2014	0.01372	0.02632	0.0202	0.00449	0.04623	0.00355
2/10/2014	-0.011	-0.0033	-0.0408	-0.0045	-0.0103	0
2/11/2014	-0.0083	0.01936	0.01422	-0.0045	0.04265	-0.0215
2/12/2014	0.01653	-0.0129	0.01022	-0.0091	-0.002	0.01439
2/13/2014	-0.011	0.00645	-0.0025	-0.0023	0.01581	-0.0036
2/14/2014	0.02186	0	0.00635	-0.0046	0	0.00358
2/17/2014	0.03714	0.01278	0.01508	-0.0069	0.0117	0.00357
2/18/2014	0.02317	-0.016	-0.0025	-0.0093	0.01538	-0.0036
2/19/2014	0.06406	-0.0032	0	0.0093	0	0
2/20/2014	0.00238	0.00645	-0.0013	-0.0023	-0.0077	0
2/21/2014	0.00475	0.01595	0.01367	0.01153	-0.0116	0.00712

Tanggal	BMTR	BSDE	CPIN	ICBP	INCO	INDF
2/24/2014	-0.0071	-0.0127	0.0292	0.02715	-0.0417	-0.0107
2/25/2014	-0.0072	-0.0194	0.00359	0.00445	-0.0205	0
2/26/2014	0.01905	-0.0468	-0.0132	-0.0316	0.01846	-0.0036
2/27/2014	0.01405	0.03698	0.01681	0.00913	-0.031	0.01073
2/28/2014	0.01615	0.01311	0.0083	0.01578	0.00209	0.02113
3/3/2014	-0.0255	-0.0164	-0.0155	-0.0045	0.01247	-0.0035
3/4/2014	0.00702	0.01316	-0.0084	-0.0181	0.05233	-0.0035
3/5/2014	0.01159	0.00651	0.01082	0.00229	0.05345	0.01394
3/6/2014	0.0362	0.02247	-0.0036	-0.0023	0	0.02393
3/7/2014	0.06454	0.02817	0.00718	-0.0023	0.00741	0.00337
3/10/2014	0	0.01227	0.00119	-0.0023	-0.0434	-0.0034
3/11/2014	0.01653	0.02112	0.00119	0.01143	0.0134	0.01342
3/12/2014	-0.0186	0	-0.0036	0	-0.027	0.00664
3/13/2014	0	-0.003	0.00238	0.00227	0.0039	0.01967
3/14/2014	-0.0147	0.0119	0.02353	0.00678	-0.0117	0.00647
3/17/2014	0.01054	0.01176	0.01156	0.00449	0	-0.0097
3/18/2014	0.00835	-0.0147	-0.0127	-0.0273	0.01756	-0.0231
3/19/2014	0.03272	0.0118	-0.0248	-0.0023	0.07273	-0.0033
3/20/2014	-0.0348	-0.0511	-0.0328	-0.0023	-0.02	-0.034
3/21/2014	0.00208	0.03339	0.01954	0.01607	0	0.01375
3/24/2014	0.02261	0.00298	0.01679	-0.0732	0.01638	-0.0383
3/25/2014	-0.0185	0.00297	-0.0108	-0.0198	0.01789	-0.0036
3/26/2014	0.00619	0	-0.017	0.00499	-0.0125	0.00709
3/27/2014	-0.0187	-0.006	-0.0235	0.0099	0	0.02443
3/28/2014	-0.0148	-0.0242	0	-0.0049	0.01249	0.00687
3/31/2014	0	0	0	0	0	0
4/1/2014	0.00847	0.03012	0.03806	-0.0025	0.01058	0.01698
4/2/2014	0.00631	-0.0089	-0.0097	-0.0075	-0.0106	-0.0034
4/3/2014	-0.0105	-0.003	-0.0024	0.00499	0.0297	-0.0136
4/4/2014	-0.0106	-0.0151	-0.0197	-0.005	0.04871	-0.0208
4/7/2014	0.0064	0.00304	0.04618	0.00747	-0.0033	0.01043
4/8/2014	-0.0215	0.00303	0.00946	-0.0075	0.02758	-0.0069
4/9/2014	0	0	0	0	0	0
4/10/2014	-0.0287	-0.092	-0.0335	-0.0075	0.01272	-0.0211
4/11/2014	-0.009	-0.01	0.02166	0	0.0448	0.02461
4/14/2014	-0.0368	0.03301	0.00357	0.00753	0.05008	0.00347
4/15/2014	-0.0047	0.0288	0.00945	0.00499	0.00287	-0.0104

Tanggal	BMTR	BSDE	CPIN	ICBP	INCO	INDF
4/16/2014	-0.0118	0.02184	-0.0154	-0.0075	-0.0276	-0.0141
4/17/2014	0.01183	-0.0031	0.00476	0	0.04605	0.02105
4/18/2014	0	0	0	0	0	0
4/21/2014	0.07914	-0.0062	-0.006	0	-0.0242	-0.0035
4/22/2014	-0.0022	0.01546	-0.0616	0	0.0437	0.00694
4/23/2014	-0.0022	-0.0062	-0.0167	0.0025	0.02183	-0.0104
4/24/2014	-0.011	-0.0031	0.00772	0	-0.0081	0.00697
4/25/2014	-0.0044	0.00309	0.01274	-0.0025	-0.0041	-0.007
4/28/2014	-0.0361	-0.0442	-0.0256	0.0025	-0.0069	-0.0212
4/29/2014	-0.0046	0.00963	-0.0065	0	-0.0069	0.00357
4/30/2014	0.01148	-0.0032	-0.0145	0	-0.0168	0.00355
5/1/2014	0	0	0	0	0	0
5/2/2014	0.00456	-0.0129	-0.0187	-0.0025	-0.0286	0
5/5/2014	0	0	0.00941	0	0.04256	-0.0036
5/6/2014	-0.0023	-0.0098	0.05597	0	0.02062	0
5/7/2014	0.00681	0.02589	-0.0013	0.0025	0.06709	0
5/8/2014	-0.0045	0.00637	0.00127	-0.0025	0.02761	0
5/9/2014	0.00454	0	0.00757	0	0.01718	0.00355
5/12/2014	-0.0045	0	-0.0293	-0.0025	0.01089	0.00354
5/13/2014	0.01802	0.00317	0	0.00501	-0.0231	-0.0035
5/14/2014	0.0177	0.01258	0.01922	0.02956	-0.0275	0
5/15/2014	0	0	0	0	0	0
5/16/2014	-0.0088	0	0.01511	0.00242	-0.048	0.00707
5/19/2014	-0.0201	-0.0447	0	-0.0097	0.02751	-0.0106
5/20/2014	-0.0114	-0.0033	-0.0369	-0.0248	0.01284	-0.0362
5/21/2014	0.00683	0.02269	-0.0117	0.00749	-0.0285	-0.0037
5/22/2014	-0.0045	0.01905	0.02206	-0.0075	0.02591	0.0037
5/23/2014	-0.0207	-0.0063	0.00895	0.02231	0.01397	-0.0111
5/26/2014	0	-0.0127	0.00887	-0.0025	-0.0063	0.01113
5/27/2014	0	0	0	0	0	0
5/28/2014	-0.0259	0.02844	0.00754	0.00978	0.0101	0.00368
5/29/2014	0	0	0	0	0	0
5/30/2014	-0.0217	0.00311	-0.0566	-0.0073	-0.0165	0.00367
6/2/2014	-0.0172	-0.0348	0.0066	-0.0123	0.00255	0.0073
6/3/2014	0.01233	-0.0065	0.00263	0	0.00508	0.01085
6/4/2014	0.0146	0.01923	0	0.01233	-0.0115	-0.0072
6/5/2014	0.00722	0.00633	0.00784	-0.0099	-0.0129	-0.0073

Tanggal	BMTR	BSDE	CPIN	ICBP	INCO	INDF
6/6/2014	0	0.00942	0	0	0.01418	-0.0073
6/9/2014	-0.0121	-0.0189	-0.0224	-0.0075	-0.0129	0
6/10/2014	0.01446	0.00635	0.01454	0.01731	-0.0065	0.00733
6/11/2014	0.03526	0.00945	0.03228	0	-0.0131	0.00727
6/12/2014	0.01376	-0.0094	0.00127	0	-0.0147	-0.0036
6/13/2014	-0.0161	-0.0032	-0.0115	0.00245	-0.0149	0
6/16/2014	0.00231	0	-0.0077	-0.0223	-0.0055	-0.011
6/17/2014	-0.007	0.00317	0.00645	0	0.02168	0.00367
6/18/2014	0.00464	-0.0063	0.00128	0	-0.0027	0
6/19/2014	-0.0211	-0.0291	-0.009	0.00995	-0.0272	0
6/20/2014	-0.0071	0.02589	0.01031	0	-0.0223	0
6/23/2014	-0.0072	-0.0325	-0.0142	-0.0125	0.00563	0
6/24/2014	0.00478	-0.01	0	0.0025	0	0
6/25/2014	-0.0048	-0.0202	-0.0065	-0.0025	-0.0056	-0.0074
6/26/2014	0.0024	0	0.01042	0.0025	0.00984	0.00735
6/27/2014	0.00715	-0.0241	-0.0249	-0.0101	-0.0056	-0.0037
6/30/2014	0.00946	0.03425	0.00133	0.01005	0	-0.0148
7/1/2014	0.00235	-0.0102	-0.0027	0.00747	0.00141	0.00743
7/2/2014	0	0.0202	0.01583	0.01478	0	0.01105
7/3/2014	-0.019	0.00333	0.00522	-0.0074	0.04396	0
7/4/2014	-0.0024	0.03268	-0.0144	-0.0074	0.0067	-0.0037
7/7/2014	-0.0024	0.02226	0.02865	0.01478	-0.0027	0.0146
7/8/2014	-0.0145	0	-0.0051	0	-0.0176	0
7/9/2014	0	0	0	0	0	0
7/10/2014	0.00729	0.01869	0	0.01215	0.00949	0.02505
7/11/2014	-0.0245	-0.041	-0.0078	-0.0269	-0.0301	0.00353
7/14/2014	-0.01	0.02853	-0.0013	-0.005	-0.0084	-0.0071
7/15/2014	-0.0025	0.01858	0.0039	-0.005	0.02082	0
7/16/2014	0	0.01824	0.05058	0.05129	0.04302	0.00354
7/17/2014	-0.0101	-0.0244	-0.0187	0	-0.0132	-0.0142
7/18/2014	-0.0128	0.00922	-0.0025	-0.0024	0.01061	0.01424
7/21/2014	0.00513	0.01818	0.00126	0.00238	-0.0013	-0.0035
7/22/2014	0.01523	-0.009	-0.0127	-0.0048	-0.02	-0.0071
7/23/2014	-0.0025	0	0.0114	0.00715	0.00805	0.00712
7/24/2014	-0.0051	-0.0245	0.00503	-0.0048	0.04317	0.00354
7/25/2014	-0.0257	-0.0156	-0.0101	-0.0024	0.03027	0
7/28/2014	0	0	0	0	0	0

Tanggal	BMTR	BSDE	CPIN	ICBP	INCO	INDF
7/29/2014	0	0	0	0	0	0
7/30/2014	0	0	0	0	0	0
7/31/2014	0	0	0	0	0	0
8/1/2014	0	0	0	0	0	0
8/4/2014	-0.0291	-0.0063	-0.0013	0.01425	-0.0062	0.01404
8/5/2014	0.00268	0.01575	0.00506	-0.0047	-0.033	-0.014
8/6/2014	-0.0299	-0.0189	-0.0038	-0.0191	-0.0209	-0.0035
8/7/2014	-0.0139	0.01893	-0.0192	0.012	0.04892	-0.0071
8/8/2014	-0.0197	0	-0.0039	-0.012	-0.0101	-0.0036
8/11/2014	0.01975	0.00933	0.02684	0.00241	-0.0013	0.01424
8/12/2014	0.01387	0.00309	0.00503	0	0.0251	0.00353
8/13/2014	0.00549	0.00615	0.02111	0.01198	0.01598	0.00351
8/14/2014	0.0109	0.00612	-0.0099	-0.0048	-0.031	0.0035
8/15/2014	0.02145	-0.0061	0.00988	0.00239	0	-0.007
8/18/2014	0.01055	-0.0031	-0.0086	-0.0024	-0.0127	0.00351
8/19/2014	0.02335	-0.0062	-0.0238	-0.0218	-0.0064	-0.0177
8/20/2014	0.02281	0.00925	0.01636	0.00488	0.014	0.01066
8/21/2014	0.00998	0	0.01364	-0.0024	0.0433	0.00704
8/22/2014	0.00248	0.00612	-0.0074	-0.0147	-0.0097	-0.0035
8/25/2014	0	-0.0061	0.00124	0.01961	0.01817	-0.0035
8/26/2014	-0.0025	0	0	-0.0024	-0.0145	-0.0107
8/27/2014	-0.0302	0	-0.0012	0.02166	0.00122	-0.0072
8/28/2014	-0.0051	-0.0031	0.00495	0.00475	0.01089	0
8/29/2014	-0.0052	-0.0124	-0.0519	-0.0048	0.006	-0.0109
9/1/2014	0.00515	0.0093	0.04699	0.03739	0	0.02158
9/2/2014	0.00513	0.00615	0.00372	0	0.01543	0
9/3/2014	0.02276	0.00612	0.00124	0.00458	-0.0107	0.00709
9/4/2014	-0.0513	-0.0061	0	-0.0046	0.06454	-0.0071
9/5/2014	0.02854	0.00916	-0.0162	0	0	-0.0071
9/8/2014	-0.0077	-0.0215	0.0075	0.00686	0.00556	0.00358
9/9/2014	-0.0052	-0.0125	-0.0125	-0.0115	-0.0078	0
9/10/2014	0	-0.0385	-0.0217	-0.0069	-0.0743	-0.0072
9/11/2014	-0.0209	0.00651	-0.0208	-0.0117	-0.0368	0
9/12/2014	0.02094	0.00647	0.03618	0.05703	0.00995	0.01429
9/15/2014	0	-0.0195	0.06509	-0.0022	-0.005	-0.0036
9/16/2014	0.03061	0	0.01182	-0.0247	0.01726	-0.0071
9/17/2014	-0.0177	0.05441	-0.0024	0.02029	0.01937	0.01424

Tanggal	BMTR	BSDE	CPIN	ICBP	INCO	INDF
9/18/2014	0.03518	-0.0063	-0.0154	0.00223	-0.006	0.00353
9/19/2014	-0.0174	-0.0031	0.02247	0.00666	-0.0306	0
9/22/2014	-0.0229	0.00627	-0.0023	-0.0089	-0.0138	0.00351
9/23/2014	-0.0026	-0.0285	-0.0273	-0.0341	-0.0243	-0.0141
9/24/2014	0.00257	0.0096	-0.0121	0.01604	0.00129	0.00355
9/25/2014	-0.0077	0.04057	0.00244	0.01354	0.00771	-0.0179
9/26/2014	0.04805	-0.0216	-0.0073	0.01336	-0.0103	0.0036
9/29/2014	-0.0174	-0.0189	0.02541	0.00442	-0.0052	0.00359
9/30/2014	-0.0229	-0.0161	0.01306	0	-0.025	0.00358
10/1/2014	0.00513	0.01286	-0.019	-0.0133	-0.027	-0.0036
10/2/2014	-0.0285	-0.0424	-0.0581	-0.041	-0.042	-0.0217
10/3/2014	-0.0106	-0.0339	-0.0337	0.01843	0.017	-0.0074
10/6/2014	-0.0435	0.01709	0.01439	-0.0023	0.03722	0
10/7/2014	0.04349	0.00338	0.01418	-0.0069	0.01211	0.01465
10/8/2014	-0.0242	-0.0239	-0.0365	-0.0233	-0.0054	-0.0221
10/9/2014	-0.0055	0.03736	0.01319	0.04384	-0.0054	0.00741
10/10/2014	-0.0027	-0.027	-0.0105	0.00225	-0.0122	0.01101
10/13/2014	-0.011	-0.0173	-0.0201	-0.0068	0.00137	-0.0073
10/14/2014	-0.0196	0.01384	0.02139	0	0.00681	0.02182
10/15/2014	0.02518	0.01365	0.02094	0.03345	-0.0109	0.00717
10/16/2014	0.01099	0.01347	0.02684	-0.0066	0.00956	-0.0253
10/17/2014	-0.011	0.02966	0.00378	0.0066	-0.0027	0.02174
10/20/2014	0.04325	0.02564	-0.0076	-0.0357	0.00272	-0.0108
10/21/2014	0.01575	-0.0063	0.00882	0.02912	0	-0.0146
10/22/2014	-0.0105	0.01893	0.01618	-0.0133	0.00542	-0.0037
10/23/2014	0.01825	0	0.0037	0.01774	-0.0014	-0.0037
10/24/2014	-0.0104	-0.0094	0.00857	0.0022	0.00135	-0.0149
10/27/2014	-0.0079	-0.0386	0.03003	-0.0267	-0.0177	-0.0267
10/28/2014	0	-0.0033	-0.0252	-0.0182	-0.0237	-0.0117
10/29/2014	0.02083	0.02918	0.02871	0.01367	0.01676	0.02698
10/30/2014	0.00514	0.00319	-0.0047	-0.0045	0.01785	0.0038
10/31/2014	0.00512	0.02205	-0.0048	0.00454	0.03081	0.03352
11/3/2014	0.0177	-0.0063	-0.0538	-0.0045	-0.0308	0.00366
11/4/2014	-0.0075	-0.0031	-0.0216	-0.0091	0.00407	-0.0184
11/5/2014	-0.0127	-0.0095	0.01402	-0.0046	0.00271	-0.015
11/6/2014	-0.0026	-0.0064	-0.0295	-0.0046	0.03584	-0.019
11/7/2014	-0.08	-0.0161	-0.0278	0.01835	-0.0065	-0.0077

Tanggal	BMTR	BSDE	CPIN	ICBP	INCO	INDF
11/10/2014	0.00554	-0.0098	0.01596	0.00454	-0.0212	-0.0039
11/11/2014	-0.0111	0.00654	0.00788	0.01125	0.00535	0.01544
11/12/2014	-0.0341	0.00649	0.00782	0	0.00797	0.00382
11/13/2014	0.00576	0.00323	-0.0052	0.00669	0.02094	0.00381
11/14/2014	-0.0321	-0.0195	-0.0105	-0.0202	-0.0026	0
11/17/2014	-0.024	0.01954	0.00395	0	0.00905	0.01509
11/18/2014	0.03289	0.01917	0.03232	-0.0023	0.00769	-0.0038
11/19/2014	0	0.03727	0.00508	0.01354	0.00382	0
11/20/2014	-0.0059	-0.0031	0	0.0067	0.02015	0
11/21/2014	-0.0089	0.02118	0.00757	-0.0135	0.01731	0.01493
11/24/2014	0.01187	0.00894	0.0162	0.02673	0.01701	0.00738
11/25/2014	-0.0269	0.0118	-0.0087	0.00657	-0.0182	-0.0037
11/26/2014	0	0.00585	-0.0088	-0.0044	-0.0198	-0.0149
11/27/2014	-0.0061	0.01159	0.03096	-0.0022	0.01244	0.00746
11/28/2014	-0.0216	0.01997	0.00244	-0.011	-0.0149	-0.0037
12/1/2014	-0.0284	0.02786	0.00364	0.01325	-0.0436	-0.0113
12/2/2014	0.00957	0.00821	-0.0024	0	0.02204	0.00752
12/3/2014	-0.0355	-0.0082	0	0	0.00639	-0.0113
12/4/2014	-0.0099	0.00548	0.01925	0.01739	0.03382	0.00378
12/5/2014	-0.0033	0.00816	-0.0168	0.01285	0.0183	0.00752
12/8/2014	-0.0202	-0.0027	-0.011	-0.0128	-0.0382	-0.0075
12/9/2014	-0.0206	0	-0.0111	0.02132	0.00376	0.00377
12/10/2014	0.01379	-0.0082	-0.0087	-0.0042	-0.0292	-0.0075
12/11/2014	-0.0208	-0.0083	-0.0151	-0.0258	0	-0.0114
12/12/2014	-0.0105	-0.0139	-0.0257	0.01724	-0.0065	0.00382
12/15/2014	0.05165	-0.0517	0.00778	0.00851	0.02181	0.00381
12/16/2014	-0.0516	-0.0209	-0.0235	-0.0258	-0.0283	-0.0076
12/17/2014	0.01404	0.06133	-0.0053	0.02363	0.0078	-0.0193
12/18/2014	0.01384	0.04161	0.00795	0.01893	-0.0236	0.00778
12/19/2014	-0.0069	-0.0054	-0.0106	0.02672	-0.0214	0.01538
12/22/2014	-0.0245	-0.0193	-0.004	-0.0041	-0.0082	0
12/23/2014	0	0	-0.0067	0	0.00409	0.01139
12/24/2014	0.03142	-0.0028	0.02265	0.01013	-0.022	-0.0038
12/25/2014	0	0	0	0	0	0
12/26/2014	0	0	0	0	0	0
12/29/2014	-0.0069	0	0.00394	0.00803	-0.0112	0.00378
12/30/2014	-0.0139	0.00834	-0.0079	0.04688	0.0195	0.01869

Tanggal	BMTR	BSDE	CPIN	ICBP	INCO	INDF
12/31/2014	0	0	0	0	0	0
1/1/2015	0	0	0	0	0	0
1/2/2015	-0.0035	0.0327	0.00528	0.00381	-0.0097	0.09867
1/5/2015	-0.0035	0.03166	-0.004	0	-0.014	0.00335
1/6/2015	-0.0071	-0.0131	-0.0093	-0.0231	-0.0057	-0.0135
1/7/2015	0.0384	0.01567	0.02372	0.01161	0.00567	-0.0137
1/8/2015	0.04356	0.02305	-0.0105	0	-0.0014	-0.0034
1/9/2015	0.05113	-0.0076	0.00131	-0.0039	0.01822	0.02048
1/12/2015	0.075	-0.0128	0.00524	-0.0354	-0.0042	0.00337
1/13/2015	0.15001	0.01793	0.01814	0.01784	-0.0155	0
1/14/2015	-0.102	-0.0051	-0.0129	-0.002	-0.0449	0
1/15/2015	-0.0308	0.00509	0.00389	0.00784	-0.0149	0.00336
1/16/2015	-0.0201	0.00506	-0.0144	-0.0059	-0.006	-0.0203
1/19/2015	0.06996	0.01255	-0.0039	0.02713	0.02392	0.00342
1/20/2015	0.02667	0.00745	0.00788	0.02455	0.03055	0.0068
1/21/2015	0.02341	0.01961	0.00392	0.07889	-0.0188	0.00676
1/22/2015	-0.0052	0.04043	0.0232	0.012	0.02309	0.02658
1/23/2015	-0.0183	-0.0404	0.02142	0.00848	0.01416	0
1/26/2015	-0.024	0.00242	-0.0025	-0.0485	-0.0099	-0.0199
1/27/2015	-0.0027	0.01681	0.00623	0.04676	0.01969	0
1/28/2015	-0.0136	-0.0538	-0.01	-0.0051	-0.0084	-0.0101
1/29/2015	0.01361	0.00251	-0.0088	0	-0.0184	-0.0034
1/30/2015	0.0027	0.01245	0.00127	-0.0137	-0.013	0.02345
2/2/2015	-0.0081	-0.0075	-0.0453	-0.0139	-0.0146	0.0066
2/3/2015	-0.0027	0.04152	0	0	-0.0103	-0.0199
2/4/2015	0.01622	-0.0218	0	-0.0141	0.00593	0.00669
2/5/2015	-0.0135	-0.0074	0.02094	-0.0018	0.00442	-0.027
2/6/2015	0.01081	0.01951	0.0167	0.02283	0.04035	0.02703
2/9/2015	0	0.012	-0.0102	0.00864	0.01124	-0.0033
2/10/2015	-0.0163	0.00238	-0.0078	-0.0244	-0.0084	-0.0169
2/11/2015	-0.0305	-0.0072	-0.0183	-0.0071	0.0126	0
2/12/2015	0.00842	0.00478	0.01703	0.0106	0.00416	0
2/13/2015	-0.0197	0.00713	0.00259	0	0.00277	0.00678
2/16/2015	-0.0201	-0.0264	-0.0065	0.01049	-0.0294	-0.0102
2/17/2015	0.051	-0.0172	-0.0026	-0.0122	-0.0114	0.01019
2/18/2015	0.01644	0.05067	-0.0026	0.00702	0.00144	0.00337
2/19/2015	0	0	0	0	0	0

Tanggal	BMTR	BSDE	CPIN	ICBP	INCO	INDF
2/20/2015	0.00812	-0.0024	-0.0079	-0.007	-0.013	-0.0102
2/23/2015	0.00269	-0.0119	0.00789	-0.0106	-0.0147	0
2/24/2015	0.016	-0.0072	-0.0013	-0.0018	-0.0104	0
2/25/2015	0.01575	0.01905	0.00524	0.00178	0.00298	0.01015
2/26/2015	0.03581	0.03704	-0.0013	0.01238	0.00741	0
2/27/2015	0.01248	0.00905	-0.0105	0.00526	0.04053	-0.0034
3/2/2015	-0.01	-0.009	0.01182	0.00175	0.00283	0.00337
3/3/2015	0.0025	-0.0046	-0.0092	0.02754	-0.0316	0
3/4/2015	-0.0279	-0.0184	0.00132	-0.012	-0.0103	0.00336
3/5/2015	-0.0287	-0.0047	-0.0013	-0.0121	0.00735	0
3/6/2015	0.05156	-0.0236	0.00657	0.01038	0.0102	0.00335
3/9/2015	-0.0229	-0.0193	-0.0119	-0.0209	-0.0073	-0.0135
3/10/2015	-0.0208	0.00487	-0.0013	0.01915	-0.0132	0.01347
3/11/2015	-0.0374	-0.0296	0	-0.0139	-0.0134	-0.0169
3/12/2015	-0.0165	0.01489	-0.004	0.02076	-0.0136	-0.0034
3/13/2015	0	-0.0025	-0.0148	0.00171	0.00152	0

Tanggal	INTP	ITMG	KLBF	LPKR	LSIP	MNCN
1/2/2014	0.01735	-0.0141	0.05449	0	-0.0157	0.00948
1/3/2014	-0.0173	-0.0344	0	-0.011	-0.0321	-0.019
1/6/2014	0.01612	-0.0223	-0.0076	-0.0282	-0.0303	-0.0293
1/7/2014	-0.0062	-0.0384	-0.0193	-0.0057	-0.0696	-0.006
1/8/2014	0	0.02512	0.01161	0	0.0208	0
1/9/2014	0.00124	-0.0193	0.02281	0	-0.0451	-0.004
1/10/2014	0.03163	0	0.02963	0.02833	-0.057	0.00399
1/13/2014	0.05021	-0.0019	0.04286	0.04906	-0.0298	-0.002
1/14/2014	0	0	0	0	0	0
1/15/2014	0	-0.0217	0	0.02105	0.01993	0.00398
1/16/2014	-0.0149	-0.004	-0.0212	0.00519	0.01307	-0.0282
1/17/2014	0.01264	0.00499	-0.0072	0	0.02247	0.00204
1/20/2014	-0.0126	0.01383	0.01073	0	0.05557	-0.0123
1/21/2014	-0.0081	0.01268	0.00355	0.01031	0.01786	-0.0125
1/22/2014	-0.0296	0.03989	0.00354	0	-0.0119	0.02275
1/23/2014	0.02138	0.02574	-0.0035	0.0102	0.06361	-0.0144
1/24/2014	0.00117	-0.0248	0	-0.0051	-0.0141	-0.0104
1/27/2014	-0.0518	-0.0467	-0.0398	-0.0524	-0.0347	-0.0406
1/28/2014	0.04944	0.00389	0.03624	0.00536	-0.039	-0.0132
1/29/2014	0.02441	0.01923	0.01062	0.02116	0.02118	-0.0179
1/30/2014	0.0283	0.02074	-0.0106	-0.0052	-0.009	0.00673
1/31/2014	0	0	0	0	0	0
2/3/2014	-0.0433	-0.0169	-0.0143	-0.0106	0.01499	0.02867
2/4/2014	-0.026	-0.0182	0.01789	-0.0161	-0.0302	-0.0022
2/5/2014	0.01661	0.03419	0	-0.0054	0	0.00868
2/6/2014	-0.0012	0.02672	0.00707	0.00542	0.04499	-0.013
2/7/2014	0.01287	0.02158	-0.0035	0.00539	0.00876	0.00437
2/10/2014	0.01041	-0.0036	-0.0107	0	0.01729	-0.0132
2/11/2014	0.01485	-0.0272	0	0	0.0198	0.00879
2/12/2014	0.01575	0.00183	0.00712	0	0.02763	0.00654
2/13/2014	-0.0022	0.0073	-0.0143	-0.0054	-0.0027	0
2/14/2014	-0.0067	-0.011	0.00359	0.01075	0.02696	-0.0109
2/17/2014	0.01008	-0.0055	0.00714	0.02116	0.01321	0.02174
2/18/2014	0.00111	-0.0056	-0.0071	-0.0158	0.04114	0.00857
2/19/2014	0.00887	-0.0075	0.01776	-0.0107	0.01748	0.04788
2/20/2014	0	0.01025	0.01399	0	-0.015	0.00406
2/21/2014	0.0055	-0.0121	0.02062	0.02128	-0.0101	0.00202

Tanggal	INTP	ITMG	KLBF	LPKR	LSIP	MNCN
2/24/2014	-0.0233	-0.0266	-0.0068	-0.0106	0.00253	-0.0061
2/25/2014	-0.0159	-0.0224	-0.0173	-0.0053	-0.0127	-0.002
2/26/2014	-0.0337	-0.0099	-0.0247	-0.0054	0.02031	0.01616
2/27/2014	0.02564	0.01873	0	0.016	0.03941	-0.0101
2/28/2014	0.03283	0.0155	0.03509	-0.0053	0	0.02598
3/3/2014	-0.0202	-0.0233	-0.0139	-0.0053	-0.0097	-0.0179
3/4/2014	-0.0091	0.01853	0	-0.0054	-0.0123	0.01988
3/5/2014	0.00686	-0.0039	0	0	0.05757	-0.002
3/6/2014	0.00455	-0.0117	-0.007	0.02128	0.0411	0
3/7/2014	0.0202	-0.0059	0.00351	0.07599	0.03301	0.03489
3/10/2014	0.01325	-0.004	-0.007	0.03828	0.01929	0.0019
3/11/2014	-0.0044	0.00297	0.00353	-0.0047	-0.0107	0.05547
3/12/2014	-0.0223	-0.0281	-0.0035	0.02331	-0.0574	-0.0054
3/13/2014	0	0.01212	0.02098	0.00917	-0.0137	-0.0018
3/14/2014	0.07796	-0.0244	0.02055	0.03588	0.03398	-0.0369
3/17/2014	0.02062	-0.0041	0.01012	0.0925	0.0242	-0.0364
3/18/2014	-0.0206	-0.0209	-0.0203	0.00401	-0.0153	-0.0039
3/19/2014	0.00208	-0.0032	-0.0278	-0.004	0.04109	0.04027
3/20/2014	-0.0381	-0.0477	-0.0035	-0.0452	-0.0301	-0.0267
3/21/2014	0.01713	0.06343	0.00704	-0.0042	-0.0044	0.01912
3/24/2014	0.02723	-0.0042	0.01739	-0.017	-0.0066	-0.0038
3/25/2014	0.00103	-0.0116	-0.0035	-0.0305	-0.0475	-0.0076
3/26/2014	-0.001	0.00948	0.01375	0.00442	0.02062	0.01898
3/27/2014	-0.0167	0.01457	0.0068	-0.0497	-0.0068	-0.0113
3/28/2014	-0.018	0.00618	-0.0068	0.00462	0.00909	0
3/31/2014	0	0	0	0	0	0
4/1/2014	0.01802	0.01629	0.02694	0.06252	0	0.01883
4/2/2014	0.00419	0.00403	-0.0067	-0.0087	0.01794	-0.0113
4/3/2014	0.01763	-0.0081	0.00667	0.0216	-0.0112	-0.0076
4/4/2014	-0.0072	-0.0195	-0.0033	-0.0129	0.00895	0.0038
4/7/2014	0.03259	0.00516	0.01653	0.03405	-0.0089	0.04626
4/8/2014	0	0.00103	-0.0099	0.00418	0	0.00541
4/9/2014	0	0	0	0	0	0
4/10/2014	-0.0934	0.0041	0	-0.069	-0.0273	-0.0237
4/11/2014	-0.0055	0.03914	0	-0.0226	0.01831	0.01825
4/14/2014	0.01537	-0.003	0.0066	0.03146	0.0202	0.00361
4/15/2014	0.01942	-0.0169	-0.0033	-0.0044	0.02632	0.0036

Tanggal	INTP	ITMG	KLBF	LPKR	LSIP	MNCN
4/16/2014	0.00107	0.01594	0.01311	-0.0089	0.03195	0.01956
4/17/2014	0.00107	0.00099	0.00649	0	-0.0021	0.00876
4/18/2014	0	0	0	0	0	0
4/21/2014	-0.0194	0.00197	-0.0196	-0.0135	-0.0148	0.01558
4/22/2014	-0.0098	0.02337	0.01637	-0.0323	0.00638	0.00514
4/23/2014	-0.0077	0.02565	0.00647	-0.0094	0.02511	-0.0034
4/24/2014	-0.0122	-0.0142	-0.0065	0.01878	-0.0104	0.00342
4/25/2014	0.01224	-0.0019	0.00324	0.00926	0.00624	-0.0295
4/28/2014	-0.0145	-0.0192	-0.0098	-0.0186	0.0062	-0.0692
4/29/2014	-0.0181	-0.0336	-0.0033	0.00468	0.01026	0.01498
4/30/2014	0.00342	0.02383	0.01303	0	0	0.00925
5/1/2014	0	0	0	0	0	0
5/2/2014	-0.023	-0.0188	0.00966	0	-0.029	0
5/5/2014	-0.0035	0.003	0	-0.0094	0.01253	0.00368
5/6/2014	0.0035	0.00398	-0.0032	-0.0095	-0.0146	-0.0148
5/7/2014	-0.0012	-0.007	-0.0065	0.00948	0.0167	-0.0094
5/8/2014	0.02989	0	0.00323	-0.0047	0.00207	0.00935
5/9/2014	-0.0034	-0.003	0.00643	0.00473	0.00206	0
5/12/2014	0.04445	0.04511	0.00639	0.02791	0.00206	-0.0094
5/13/2014	-0.0098	0.03393	-0.0128	0.01818	-0.0292	0.00749
5/14/2014	0.05135	-0.0102	0.03487	0.01786	-0.0064	0.01665
5/15/2014	0	0	0	0	0	0
5/16/2014	-0.0042	0.01025	0.00311	0.00881	0.00638	0.01818
5/19/2014	-0.033	0.01381	0.01235	-0.0177	-0.0258	-0.009
5/20/2014	-0.0043	-0.0083	0.0122	-0.0226	-0.0377	-0.0523
5/21/2014	0.00326	0.03175	-0.0245	0.00456	0.00675	0.01521
5/22/2014	0.0097	0.03509	0.0031	0.00905	0.02655	0.01684
5/23/2014	0.00642	0.02301	0.00925	-0.009	0.00436	0
5/26/2014	0.00213	-0.0076	0	0	-0.0175	0.00923
5/27/2014	0	0	0	0	0	0
5/28/2014	0.00531	0.00085	-0.0092	-0.0046	0.04753	0
5/29/2014	0	0	0	0	0	0
5/30/2014	-0.0421	-0.0284	-0.0476	-0.0564	-0.0256	0.03964
6/2/2014	0.01098	0.03768	0.03509	-0.0146	0	-0.0035
6/3/2014	0.01086	0.00837	-0.0094	0.00489	0.01076	0.01058
6/4/2014	0.00108	-0.0134	0.00316	0.01932	-0.0195	-0.0018
6/5/2014	-0.0032	0	0	0.00952	0.00218	0.00176

Tanggal	INTP	ITMG	KLBF	LPKR	LSIP	MNCN
6/6/2014	0.02141	0	0.01254	-0.0095	-0.011	-0.0394
6/9/2014	-0.0193	-0.0379	0	-0.0145	-0.0359	0.04111
6/10/2014	0.02137	0	0.0397	0	0.01135	0
6/11/2014	0.00737	-0.0213	0	0.01923	0.0045	0.01391
6/12/2014	0.02487	-0.0036	-0.0242	0	-0.0022	-0.0122
6/13/2014	0.01725	-0.0036	-0.0123	0	0.00897	-0.0035
6/16/2014	-0.0132	-0.0191	-0.0062	-0.0096	0.0155	-0.0285
6/17/2014	0.01718	0.0128	0.02774	0.00957	-0.0066	0.03894
6/18/2014	-0.0305	0.01978	-0.0061	-0.0096	0.01754	-0.03
6/19/2014	0.00206	-0.0317	-0.0216	-0.0145	-0.0109	-0.0235
6/20/2014	-0.0378	-0.0083	0.01242	-0.0197	0.00875	-0.0204
6/23/2014	-0.0108	-0.0065	0.01531	-0.005	-0.0066	-0.0113
6/24/2014	-0.0087	0.01848	0.00908	-0.0356	0.00873	-0.0076
6/25/2014	-0.0143	0	0	-0.0262	0.01724	0.03555
6/26/2014	0.00111	0.00366	0.00601	0.02105	0.02532	-0.0018
6/27/2014	-0.0044	-0.0092	-0.006	-0.0157	-0.0147	-0.0167
6/30/2014	0.00222	-0.0055	0	0.01575	-0.0214	0.03315
7/1/2014	0.01976	-0.0177	0.01495	-0.0052	-0.0152	-0.0073
7/2/2014	0.0065	0.01031	0.00592	0.01042	-0.0132	0.01449
7/3/2014	-0.0032	0.00558	0	0.01542	0.00443	-0.0018
7/4/2014	0.01292	0.00555	-0.0059	0.03015	-0.0044	-0.0182
7/7/2014	0.06721	0.00552	0.00592	0.04832	0.00222	0.00183
7/8/2014	0	-0.0185	0.01173	0.02791	-0.0134	0
7/9/2014	0	0	0	0	0	0
7/10/2014	0.0198	-0.0132	0.01734	0.06654	0.02442	-0.0643
7/11/2014	0.00878	-0.0153	-0.0057	-0.0305	-0.0132	0.02888
7/14/2014	-0.0039	-0.0293	-0.0204	0	-0.027	0.01132
7/15/2014	0.00874	-0.008	0.0146	0.01754	-0.0301	0.00375
7/16/2014	0.00962	0.0119	0.03699	0.01724	0.00235	0.00559
7/17/2014	-0.0174	-0.0099	-0.0312	-0.026	-0.0214	-0.0188
7/18/2014	0.01355	0.00892	-0.0087	0	0.00717	-0.0191
7/21/2014	0.01716	0.0108	0.01443	0.01739	-0.0048	0.00577
7/22/2014	-0.0076	-0.0227	-0.0029	-0.0087	-0.044	-0.0155
7/23/2014	-0.0048	0.00895	0.01143	-0.0044	0.00499	0.00583
7/24/2014	-0.0203	0.04548	-0.0057	-0.0401	0.03183	0.00772
7/25/2014	-0.0257	-0.0105	-0.0115	0	0.01198	0.00575
7/28/2014	0	0	0	0	0	0

Tanggal	INTP	ITMG	KLBF	LPKR	LSIP	MNCN
7/29/2014	0	0	0	0	0	0
7/30/2014	0	0	0	0	0	0
7/31/2014	0	0	0	0	0	0
8/1/2014	0	0	0	0	0	0
8/4/2014	-0.0243	0.07014	-0.0443	0.00454	0.00712	0.06119
8/5/2014	-0.0041	-0.0271	-0.0122	0.03118	0.00472	-0.0018
8/6/2014	0	0.02174	-0.0248	-0.0177	0.00937	-0.0182
8/7/2014	0.00719	0.00358	0.02171	0.00889	-0.0117	-0.0223
8/8/2014	-0.0093	-0.0198	0	0.02188	0.00236	0.0314
8/11/2014	0.01232	-0.0018	0.00612	0.0129	-0.0142	0.04619
8/12/2014	0.00306	0	0	0.02948	-0.0242	0.00692
8/13/2014	0.00102	0.02166	-0.0061	0.01237	-0.0024	0
8/14/2014	0	0.02643	0	-0.0333	0.00245	-0.0369
8/15/2014	0.00203	0.01639	-0.0092	-0.0128	-0.0123	0.03688
8/18/2014	0	0.00171	0.00925	0.00428	-0.0025	0
8/19/2014	-0.002	-0.0034	0.00612	-0.0043	0.02209	0.02217
8/20/2014	-0.002	0.00257	0.0241	0.00428	-0.0073	-0.0119
8/21/2014	0.01416	-0.026	0.00297	0	0.00244	-0.0207
8/22/2014	0.01791	-0.0267	0.00296	-0.0172	-0.0098	0.01556
8/25/2014	-0.0079	0.01609	-0.0089	-0.0264	-0.0351	0.01024
8/26/2014	-0.0303	-0.0107	-0.006	-0.041	-0.0285	-0.0434
8/27/2014	0.00307	0.02128	0	0.00464	0.00262	0.00883
8/28/2014	0	0.00525	0.00897	0.00462	-0.0026	-0.0035
8/29/2014	-0.0092	-0.0167	-0.012	-0.0139	-0.0185	-0.0106
9/1/2014	-0.0052	0.02107	0.01198	-0.0094	-0.0189	0.00178
9/2/2014	0.01338	-0.0009	-0.003	-0.0095	0.01889	-0.0054
9/3/2014	0.00612	0.0181	0.00595	0.01887	0.02378	0.00535
9/4/2014	-0.0154	-0.0026	-0.003	-0.0047	-0.0131	-0.018
9/5/2014	-0.0052	-0.0138	0	-0.019	-0.0053	0
9/8/2014	0.01748	0.00347	0.00593	-0.0048	0.01321	-0.022
9/9/2014	-0.0216	-0.0442	-0.0089	-0.0243	-0.0266	-0.0056
9/10/2014	-0.0105	-0.052	-0.009	-0.0149	-0.0441	0.01111
9/11/2014	-0.0288	-0.0076	0	0	-0.0142	0
9/12/2014	0.00325	0.02465	0.00301	0	0.03371	0.00917
9/15/2014	0.03606	-0.0256	0.003	0.01489	0.00276	0.01629
9/16/2014	-0.02	0.04324	-0.009	-0.0099	0	0.06263
9/17/2014	0.00318	0.0055	0.00902	0.04855	0.03252	0.01007

Tanggal	INTP	ITMG	KLBF	LPKR	LSIP	MNCN
9/18/2014	0.00106	-0.0203	0	-0.0048	0.01587	0.03123
9/19/2014	0.01157	0.01207	0.00299	-0.0048	-0.0026	0.02082
9/22/2014	-0.0137	0.01465	0.00892	-0.0096	-0.0159	0.01572
9/23/2014	-0.016	-0.037	0.0059	-0.0097	-0.0027	-0.0189
9/24/2014	-0.0032	-0.0076	-0.0148	-0.0098	0.01067	0.00317
9/25/2014	-0.012	0.01322	0.01482	0	0.00529	0.02039
9/26/2014	-0.03	-0.0579	-0.0029	-0.0249	-0.0133	-0.0062
9/29/2014	-0.0148	0.02939	0	-0.0308	-0.0108	-0.0047
9/30/2014	-0.0138	0.00289	0.00295	-0.0211	0.02667	0.00313
10/1/2014	0.00578	0.00288	-0.0148	0.03142	0.02083	-0.0158
10/2/2014	-0.0304	0.01335	-0.009	-0.0529	-0.0421	-0.029
10/3/2014	0.00238	0.02432	0.00601	-0.022	-0.0054	-0.0265
10/6/2014	0.03382	-0.0158	-0.003	0.00554	0.01874	-0.0359
10/7/2014	0.03161	-0.0047	-0.003	0.03794	0.00793	0.0241
10/8/2014	-0.0328	-0.0057	-0.003	-0.027	-0.0079	-0.0068
10/9/2014	0.01707	-0.0328	0	0.04801	0.00793	0.00853
10/10/2014	-0.0068	-0.0349	-0.0091	0.02062	-0.0186	-0.0068
10/13/2014	0	-0.0704	-0.0154	-0.0103	0.00268	-0.0051
10/14/2014	0.0068	-0.0287	-0.0062	-0.0052	-0.0081	-0.0017
10/15/2014	0.01568	-0.124	0	0.00517	-0.0441	0.01537
10/16/2014	-0.0078	0.02134	0.0397	0.00514	-0.0142	0.00676
10/17/2014	0.02543	-0.0315	0.0119	0.05488	0.06365	0.01835
10/20/2014	0.03539	0.02532	-0.003	-0.0246	-0.0466	0.0033
10/21/2014	-0.0011	0.00374	0.00886	0.00496	-0.017	-0.0083
10/22/2014	0.00945	0.04861	-0.0089	0.03407	0.017	-0.0117
10/23/2014	-0.0073	0.01997	0.00886	0.00477	0.01395	-0.0187
10/24/2014	0.00525	0.00695	0	0.00475	0.02192	-0.0366
10/27/2014	0	0.00231	-0.0238	-0.0095	-0.0109	-0.0143
10/28/2014	-0.0116	-0.0233	0.01198	-0.0048	-0.011	0.00897
10/29/2014	0.01785	0.0302	0.01477	0.01905	0.04071	0.00712
10/30/2014	-0.02	-0.0445	0.00293	0.00939	0.03912	-0.0071
10/31/2014	0.01893	0.01307	-0.0029	0	-0.0051	0
11/3/2014	-0.001	-0.0496	-0.0118	0.00466	0.02538	-0.0018
11/4/2014	-0.0168	-0.0201	0.0118	0	-0.0177	-0.0054
11/5/2014	0.0074	0.00631	-0.0148	-0.0331	-0.0232	-0.0145
11/6/2014	-0.0085	-0.0076	0.00297	-0.0097	0.01297	-0.0278
11/7/2014	-0.0291	0.00883	-0.018	-0.0246	-0.0261	-0.0305

Tanggal	INTP	ITMG	KLBF	LPKR	LSIP	MNCN
11/10/2014	-0.0154	-0.0101	-0.003	0.01482	-0.0026	-0.0078
11/11/2014	0.02845	0.01886	0.02395	0.00976	0.02359	-0.05
11/12/2014	0.01073	-0.0329	-0.003	0.00484	0.00517	-0.0376
11/13/2014	0.02112	-0.0651	0	-0.0048	0.00257	0.02521
11/14/2014	0.01143	-0.0307	0.00592	0	-0.026	-0.0402
11/17/2014	0.00103	0.03889	0.01754	0	0.00264	-0.0174
11/18/2014	0.01129	0.00408	0.00866	0.02871	0.00786	0.04302
11/19/2014	-0.001	-0.0041	0.02273	0.00471	0.0078	0
11/20/2014	-0.0092	-0.0137	-0.0113	0.00935	0.02558	-0.0191
11/21/2014	0.00617	0.00138	-0.0057	0.0499	0.0274	0.01279
11/24/2014	0.00816	0.01913	0.017	0	0	0.04353
11/25/2014	0.00608	0.00135	-0.0056	0.00881	-0.0224	0.01809
11/26/2014	0.00604	0.01075	-0.0085	0.00873	0.00501	-0.012
11/27/2014	0.001	0.01592	-0.0086	0.00866	0.01242	0
11/28/2014	-0.0101	0.00131	0.00573	0.0043	-0.02	-0.0307
12/1/2014	0.02994	-0.0334	0.00853	-0.0086	-0.0385	0.01854
12/2/2014	0.00978	-0.0151	0.01685	0.01717	0	0
12/3/2014	-0.0187	-0.0097	0.01931	-0.0259	0.01042	-0.0165
12/4/2014	-0.003	0.02068	-0.0165	0.02586	0.03812	0.00414
12/5/2014	0.00298	-0.0179	-0.0112	0	0.00993	-0.0444
12/8/2014	-0.004	-0.0014	-0.0314	-0.0172	-0.025	-0.0285
12/9/2014	-0.004	-0.0154	0	-0.0397	-0.0102	-0.0225
12/10/2014	0.00797	-0.0582	0.02575	0.01786	0	0.02912
12/11/2014	0	-0.0366	0	-0.0089	0.01018	0.02183
12/12/2014	-0.005	0.01235	0.00282	-0.018	-0.0153	0.02559
12/15/2014	-0.0273	-0.0186	0.01399	-0.0277	-0.0182	0.01877
12/16/2014	-0.0472	-0.0447	-0.0339	-0.0528	-0.0265	-0.0358
12/17/2014	-0.0022	-0.0033	-0.0087	-0.0199	0.01335	0.05011
12/18/2014	0.01919	0.00327	0.02857	0.03457	0.021	0.01013
12/19/2014	0.03221	0.02581	0.01399	-0.0049	0	0.01003
12/22/2014	0.0122	-0.0032	0.01379	-0.0347	-0.0131	0.00199
12/23/2014	0	-0.0048	-0.0027	0	-0.0026	0.00199
12/24/2014	0.00202	0.0016	0.00548	0	-0.0106	0.01186
12/25/2014	0	0	0	0	0	0
12/26/2014	0	0	0	0	0	0
12/29/2014	-0.004	-0.0097	0	0.02985	0.01849	0
12/30/2014	0.01207	-0.0049	0	0	-0.0105	-0.002

Tanggal	INTP	ITMG	KLBF	LPKR	LSIP	MNCN
12/31/2014	0	0	0	0	0	0
1/1/2015	0	0	0	0	0	0
1/2/2015	-0.008	0.03358	-0.011	0.00976	0.00791	0.01563
1/5/2015	-0.001	-0.0255	0	-0.0049	0.01304	-0.0235
1/6/2015	-0.0224	-0.0615	0	-0.0247	-0.0157	0.02547
1/7/2015	0.01638	-0.0086	0.00825	0.01489	0.00786	0.02105
1/8/2015	-0.001	0.00173	-0.011	0.0098	0.05338	0.00189
1/9/2015	-0.0174	0.05869	-0.0083	0.01932	0	-0.0057
1/12/2015	0.00103	-0.0484	-0.0028	-0.0048	-0.0075	0.01697
1/13/2015	0.01842	-0.0034	0.01391	-0.0194	0.00498	0.08076
1/14/2015	-0.0112	0.02707	-0.0139	-0.0148	-0.0379	-0.0477
1/15/2015	0.0193	0.01327	-0.0028	0.02457	0.01535	0
1/16/2015	-0.1083	-0.0183	0.00281	-0.0147	-0.0283	-0.0312
1/19/2015	-0.0215	0	0.0028	0	-0.0105	0.00186
1/20/2015	0.02377	0.01499	0.00557	0.01467	0.0105	0.00742
1/21/2015	-0.0101	0.0033	0.00554	0.00966	-0.0052	0.06095
1/22/2015	0.03005	0.00984	0.01644	0.02375	-0.0132	0.00693
1/23/2015	0.00873	-0.0098	0.02151	0.05481	-0.008	0.00173
1/26/2015	-0.0022	-0.0099	-0.0161	-0.027	-0.0272	-0.0351
1/27/2015	0.00218	0.01977	0.0027	0	0.01368	0.0212
1/28/2015	0	0.00488	0.00269	-0.0046	0.00271	-0.0017
1/29/2015	-0.0054	0.0161	-0.0081	0.04485	-0.0109	0.00175
1/30/2015	0.00545	0.06793	0.01078	-0.0044	0.00819	0
2/2/2015	-0.0044	-0.0181	-0.0162	-0.0313	-0.0137	-0.0053
2/3/2015	0.01086	0.01208	-0.0055	0.01354	-0.0167	0.02944
2/4/2015	0.00646	0	0.00546	-0.0045	0	0.03191
2/5/2015	-0.0032	-0.0197	-0.0055	-0.0045	0.04384	-0.0017
2/6/2015	0.00964	0.01671	0.00546	0.00901	0.04457	0.00988
2/9/2015	0.02214	-0.0091	0	0.00447	-0.026	0.00491
2/10/2015	-0.0031	0.02105	0.00272	-0.009	-0.0079	-0.0115
2/11/2015	-0.0042	0.0177	0.00812	0	0.00529	0.00329
2/12/2015	-0.0169	0.01739	-0.0027	-0.0045	0.00264	0.00328
2/13/2015	0	0.01001	0.01075	0.00901	0.00525	0.00164
2/16/2015	0.00107	0.00567	-0.0382	0	-0.0052	0.00977
2/17/2015	0.01588	0.04156	0.00554	0	0	-0.0147
2/18/2015	-0.0042	0	-0.0028	0.04815	-0.0026	0.00492
2/19/2015	0	0	0	0	0	0

Tanggal	INTP	ITMG	KLBF	LPKR	LSIP	MNCN
2/20/2015	-0.0021	-0.0123	-0.0083	-0.0043	-0.0106	0.00653
2/23/2015	0.01261	-0.025	0.00279	-0.0173	-0.027	-0.0049
2/24/2015	0	-0.061	0.01108	0.0087	-0.011	0.00651
2/25/2015	0.00728	0	0.00275	0.00862	0.00552	0.0113
2/26/2015	-0.0031	-0.0045	-0.0028	0.00428	0.01096	0.0016
2/27/2015	0	0.01641	-0.0055	0.00851	0.02423	0.00957
3/2/2015	-0.0021	0.03631	0.01376	-0.0042	0.01845	0
3/3/2015	0.00416	-0.0014	-0.0027	-0.0043	0.00261	-0.0144
3/4/2015	-0.0042	-0.029	0.00546	-0.0216	-0.0131	-0.0065
3/5/2015	-0.0042	-0.0059	-0.0165	0	0.00788	-0.023
3/6/2015	0.0166	0.01176	0.02192	0.01302	-0.0185	0.01318
3/9/2015	-0.0124	-0.0177	-0.0164	-0.0441	0.00797	-0.0182
3/10/2015	-0.0084	-0.003	-0.0083	0	-0.008	-0.027
3/11/2015	-0.0342	-0.0226	-0.0084	-0.0045	-0.0161	0.00171
3/12/2015	-0.022	0.03451	0.0028	0	0	0
3/13/2015	-0.0134	0.02044	0.00557	-0.0091	-0.0027	-0.0103

Tanggal	MPPA	PGAS	PTBA	PTPP	SILO	SMGR
1/2/2014	0.00514	0.02755	0.01942	0.02553	0	0.02443
1/3/2014	-0.0155	-0.0109	-0.0392	-0.0169	0	-0.0104
1/6/2014	-0.0426	-0.0335	-0.0726	-0.026	0	-0.0035
1/7/2014	-0.0501	-0.03	-0.019	-0.0132	0	-0.0017
1/8/2014	-0.0115	-0.0047	0.02703	0.01762	-0.0026	-0.0106
1/9/2014	0.02003	0.00703	-0.0188	0.00436	0.00264	-0.0018
1/10/2014	-0.0085	0.03557	-0.0027	0.06318	0	0.05519
1/13/2014	0.0226	-0.0034	-0.0027	0.0709	0	0.04109
1/14/2014	0	0	0	0	0	0
1/15/2014	0.04639	-0.0114	0.01087	-0.0115	0	0.00962
1/16/2014	0.00266	-0.0255	-0.0109	0.01527	-0.0026	-0.0308
1/17/2014	0	0.02892	0.0349	0.01504	-0.0026	0
1/20/2014	0	0.06831	0.01571	0.00372	0	-0.0083
1/21/2014	0.02105	0.00106	0.00776	-0.0037	0	-0.0067
1/22/2014	0	0.00531	0.02545	-0.0265	0.01575	-0.0202
1/23/2014	0.03832	-0.0085	-0.0203	0.00382	0	0.01522
1/24/2014	0.005	0.0032	-0.0155	-0.0115	0	-0.0238
1/27/2014	-0.0355	-0.0302	-0.0317	-0.0274	0	-0.0403
1/28/2014	0.02046	0.00873	0	0.01965	0	0.00179
1/29/2014	0.01008	0.03419	0.016	0.02308	-0.0026	0.02817
1/30/2014	0.005	0.0021	-0.0214	0.02627	0.00521	-0.014
1/31/2014	0	0	0	0	0	0
2/3/2014	0.01485	0.00418	0	0.00738	0.00259	-0.0142
2/4/2014	0	-0.0094	-0.0136	-0.0074	0	-0.009
2/5/2014	0.01221	0.01568	0.0163	0.02198	0.00517	0.03887
2/6/2014	0.02398	0.00207	0.03964	0.00722	0.00514	0.00863
2/7/2014	0.03034	0	-0.0026	0	0.00512	0.02712
2/10/2014	-0.0519	-0.001	-0.0026	-0.0292	0.00255	0.00833
2/11/2014	0.00242	-0.0052	0.00519	-0.0037	-0.0025	0.00166
2/12/2014	0.02622	0.00104	-0.0052	0.00741	0.01015	0
2/13/2014	0.0117	-0.0031	-0.0264	0.00735	0.00504	0
2/14/2014	-0.0023	0.02881	-0.0081	0.02532	0.00501	-0.0167
2/17/2014	0.00697	0.00506	-0.0027	0.03509	0.04879	0.02494
2/18/2014	-0.0023	0.00202	0.00539	-0.0139	0	-0.0149
2/19/2014	0.00924	0.01697	0.00536	-0.0284	0	0
2/20/2014	0.0023	0	-0.0054	-0.0145	0	0.00664
2/21/2014	-0.0092	-0.01	0.00268	0.02523	0	-0.0017

Tanggal	MPPA	PGAS	PTBA	PTPP	SILO	SMGR
2/24/2014	-0.0187	0	-0.0108	0	0	-0.0117
2/25/2014	-0.0119	-0.0101	-0.0082	0	0	-0.0169
2/26/2014	-0.0291	-0.0173	0.00545	-0.0143	-0.0024	-0.0189
2/27/2014	-0.0025	0.00717	0.01617	0.02847	0.00238	0.0052
2/28/2014	0.06438	0	0.02378	-0.0141	0	0.03736
3/3/2014	-0.0093	0.00813	-0.0238	0.01062	-0.0024	-0.0202
3/4/2014	0	0.00101	0.01854	0.06145	0.00238	0
3/5/2014	0.00928	0.01106	0	0.01642	0.01887	0.01183
3/6/2014	0.00461	0	0	0.01936	0.02538	0.01501
3/7/2014	0	-0.008	-0.0106	0.00637	0.01582	0.01316
3/10/2014	0.00687	0	0.01055	0.00948	0	0
3/11/2014	0.01586	-0.0091	0.00262	0.03401	0	0.00976
3/12/2014	0.01339	0.01414	-0.0292	0	0.01115	-0.0213
3/13/2014	0.02193	0.03741	0.01072	0.01208	-0.0808	-0.0017
3/14/2014	0.0383	0.01914	-0.0134	0.09175	-0.0097	0.05789
3/17/2014	0.04291	0.00473	0.0027	-0.0083	0.00966	0.03077
3/18/2014	0	-0.0239	0	-0.0139	0	-0.0261
3/19/2014	0.03922	-0.0195	0.01072	-0.0056	-0.0024	-0.0047
3/20/2014	-0.0019	-0.0392	-0.0243	-0.0228	-0.0073	-0.0447
3/21/2014	0.0153	0.05869	0.02162	0.03121	0.00484	0.00651
3/24/2014	0.02066	-0.0354	-0.0081	0	0.00482	0.02247
3/25/2014	0.00186	-0.009	-0.0081	0	-0.0048	0
3/26/2014	0.0129	0.01504	0	0.01111	0	-0.0032
3/27/2014	-0.0148	0.01971	0.01617	0.00825	0	0
3/28/2014	-0.0019	0	-0.0027	0.00274	-0.0048	0.00635
3/31/2014	0	0	0	0	0	0
4/1/2014	0.02392	0.0241	0.01332	0.02696	0.00484	0.04335
4/2/2014	0.00725	-0.0241	0	0.01845	0.012	0.00604
4/3/2014	0.0036	0.00487	-0.0026	-0.0026	0.0095	0.02381
4/4/2014	0.05596	-0.0049	-0.0107	-0.0026	-0.0167	-0.0223
4/7/2014	0	0.03828	0.00801	0.00262	0	0.01344
4/8/2014	-0.0051	-0.0094	0	-0.0026	0.00957	-0.003
4/9/2014	0	0	0	0	0	0
4/10/2014	0.0102	-0.0143	-0.008	-0.1168	-0.029	-0.0693
4/11/2014	-0.0153	0.01432	0.03943	-0.0119	0.02421	-0.0226
4/14/2014	-0.0243	0.00943	0.00514	0.05799	0.00477	0.0384
4/15/2014	-0.0178	0.01399	-0.0181	0.01676	-0.0024	0

Tanggal	MPPA	PGAS	PTBA	PTPP	SILO	SMGR
4/16/2014	-0.0272	-0.0282	0.00521	0	0.00238	0.00157
4/17/2014	-0.028	0.01887	0.00776	-0.0028	0.0212	-0.0079
4/18/2014	0	0	0	0	0	0
4/21/2014	0.0169	0.0093	0.00257	-0.0056	-0.0023	-0.0032
4/22/2014	0.00557	0	0.02287	0	0	-0.0048
4/23/2014	0.01835	0.00462	0.02482	-0.0028	0	0
4/24/2014	0.01623	0.00917	-0.0123	0.01391	0.01161	-0.0112
4/25/2014	0	0.00909	0.00742	0.02456	0.00231	0.01121
4/28/2014	-0.0108	-0.0091	0.00246	-0.0385	-0.0023	-0.0177
4/29/2014	0	-0.0325	-0.0376	0.0249	0.0069	-0.0296
4/30/2014	0.00181	0.00471	0.00762	0.00816	0.00913	-0.0084
5/1/2014	0	0	0	0	0	0
5/2/2014	-0.0054	-0.0047	-0.0076	0.00541	0.08701	-0.017
5/5/2014	0	-0.0047	-0.0128	0.00805	0	0.00512
5/6/2014	-0.0598	0	0.00515	-0.0108	0	-0.0103
5/7/2014	0	0.01412	0	0.02667	0	-0.0174
5/8/2014	0.01719	-0.0141	0.00257	0.00786	0	0.02934
5/9/2014	-0.0038	0	-0.0026	0	0.00208	0.00678
5/12/2014	0.01883	0.03721	0.04277	-0.0026	0	0.05264
5/13/2014	0.02396	-0.0046	0.02193	0.00261	0.00415	0
5/14/2014	0.01626	0.00458	0.01909	0.02067	0.01439	0.02219
5/15/2014	0	0	0	0	0	0
5/16/2014	0.00179	0.00909	0.02337	-0.0129	0.01015	0
5/19/2014	0.00535	0.00901	0.0092	-0.0478	0.05119	-0.0432
5/20/2014	0.01238	-0.0181	-0.0373	-0.0192	0.00192	-0.0282
5/21/2014	0.01569	0.02257	0.04187	0.0327	0	0.00838
5/22/2014	0.01033	0.02208	0.03799	0.02122	-0.0431	-0.0017
5/23/2014	0.01529	0.00436	0.01523	0.00524	0.04306	0.005
5/26/2014	-0.0431	-0.0087	-0.0109	-0.0105	0.01143	-0.0017
5/27/2014	0	0	0	0	0	0
5/28/2014	0.00876	0.00438	-0.0266	-0.0053	0	0.01489
5/29/2014	0	0	0	0	0	0
5/30/2014	0.07883	-0.0538	-0.0412	0.01318	0.12783	-0.0334
6/2/2014	0	-0.0328	0.02992	-0.0292	-0.0033	0.00845
6/3/2014	0.03018	-0.0048	0.02242	-0.0081	0.00167	0.01338
6/4/2014	0.01244	0	-0.0111	0	-0.0134	0.00332
6/5/2014	0.00923	0.01896	0.02217	-0.0164	-0.0034	0.0066

Tanggal	MPPA	PGAS	PTBA	PTPP	SILO	SMGR
6/6/2014	0.00915	0.01399	0	-0.0223	0	0.00819
6/9/2014	-0.0046	0.00462	-0.0312	-0.0287	-0.0068	-0.0214
6/10/2014	-0.0031	0.00917	0.00676	0.01729	-0.0017	0.01653
6/11/2014	-0.0046	0.00456	0.01117	0.03371	-0.0069	0.00654
6/12/2014	0.00307	0	-0.0225	0.00276	-0.0017	0.00325
6/13/2014	0.00763	-0.0137	-0.0091	0	-0.0017	0.00162
6/16/2014	0.02105	-0.0233	-0.0398	0.01368	-0.0052	-0.0032
6/17/2014	-0.0135	0.02791	0.03287	-0.0082	-0.0035	0.00325
6/18/2014	0.00901	0.00913	-0.0281	-0.025	-0.0017	-0.0147
6/19/2014	-0.0045	0	0.02579	0	0	-0.0132
6/20/2014	-0.0383	-0.0091	-0.0187	-0.0028	0	-0.005
6/23/2014	-0.0496	0	0.01172	0	0	0.00501
6/24/2014	-0.0165	-0.0092	-0.0284	0.02229	0.01043	0
6/25/2014	-0.0287	0	-0.0121	-0.0111	0.00345	0
6/26/2014	0.01532	0.01835	0.02398	0.00556	0.00687	0.00664
6/27/2014	-0.017	-0.0091	0.00708	-0.0139	0.01361	-0.0083
6/30/2014	0.07128	0.02268	0.00937	0.03857	-0.0239	0.00666
7/1/2014	0	-0.0135	-0.0165	-0.0136	-0.0316	0
7/2/2014	0	0.00454	0.01878	-0.0055	0	0
7/3/2014	-0.0227	-0.0137	-0.0023	0	0	-0.0033
7/4/2014	-0.0165	-0.0046	-0.007	0.02985	0	0.00663
7/7/2014	0.00332	0.01827	0.05035	0.0722	0	0.05154
7/8/2014	-0.0117	0	-0.0067	0.00743	-0.0018	0.01712
7/9/2014	0	0	0	0	0	0
7/10/2014	-0.0017	0.03118	0.00895	0.06222	0.00179	0.03189
7/11/2014	-0.0101	-0.0088	-0.0432	-0.0354	0	-0.0045
7/14/2014	-0.0034	0.00881	0	0.0024	0	0
7/15/2014	0	0.00438	0	0.05822	0	0.01638
7/16/2014	0.02024	0.03011	0.00464	0.02016	-0.0018	0.00736
7/17/2014	-0.113	-0.0042	-0.0282	0.00442	-0.0018	-0.0298
7/18/2014	0.07904	0.00425	0.00712	0.01533	-0.0108	0.00902
7/21/2014	0.02726	0.02097	0.03485	0.03838	0.01439	0.01633
7/22/2014	-0.0135	0.00826	-0.0278	-0.0105	0.01594	-0.0208
7/23/2014	-0.0051	0.00411	0.00935	0	0.00526	0.01493
7/24/2014	0.00342	-0.0165	0.03429	-0.0388	0	-0.0134
7/25/2014	0.00511	-0.0168	0.04611	-0.0066	0	-0.0045
7/28/2014	0	0	0	0	0	0

Tanggal	MPPA	PGAS	PTBA	PTPP	SILO	SMGR
7/29/2014	0	0	0	0	0	0
7/30/2014	0	0	0	0	0	0
7/31/2014	0	0	0	0	0	0
8/1/2014	0	0	0	0	0	0
8/4/2014	-0.0171	0.03334	0.07042	0.011	0.01733	0.00901
8/5/2014	-0.0245	-0.0165	0.01587	0.01735	-0.0156	-0.0135
8/6/2014	-0.0251	-0.0382	-0.0159	-0.0152	-0.0017	-0.0061
8/7/2014	-0.0313	-0.0087	0.02956	-0.0044	0.04779	-0.0031
8/8/2014	0.01487	0	0.00581	0.00438	0	-0.0061
8/11/2014	0.02909	0.0216	-0.0274	0.02586	0	0.0198
8/12/2014	0.01424	0.01274	-0.016	0.00636	0	0.00451
8/13/2014	0.04153	0.00421	0.02391	0.02917	-0.069	0.00449
8/14/2014	0	-0.0169	0.01563	0.01021	0.07564	-0.0166
8/15/2014	0.00169	0.00426	-0.0097	-0.0041	0.01316	0.00152
8/18/2014	0.03164	-0.0043	0.07537	-0.002	0.00651	0.01057
8/19/2014	0.01787	0	-0.0128	-0.0041	0.00969	0.0015
8/20/2014	-0.0016	0.00851	0.00367	0.01021	-0.0032	-0.0045
8/21/2014	-0.0032	0.00844	-0.0185	0.00406	0	0.00301
8/22/2014	0.00323	0.00419	0.01665	-0.0163	0.00322	0.00897
8/25/2014	-0.0016	0	-0.026	0.01227	-0.0016	-0.0015
8/26/2014	-0.0278	-0.0042	0	-0.0143	-0.0546	-0.0196
8/27/2014	-0.0134	0	0.02235	0	0.01351	-0.0122
8/28/2014	0.03149	0	0.00184	0	0.01168	0.00919
8/29/2014	0.00488	-0.0255	-0.0186	0.01636	0	-0.0107
9/1/2014	0	0.0043	0.0056	0.00405	0	0.00154
9/2/2014	0.0129	0.00428	0.00927	0	0.00166	0.00154
9/3/2014	0.01274	0.01274	0.0255	0.01404	0.00331	0.00917
9/4/2014	-0.0176	0.00421	0.0018	-0.012	0.01311	-0.0107
9/5/2014	0.01756	0.00419	-0.0036	-0.0081	-0.0033	0.00766
9/8/2014	0.01258	-0.0042	0.00718	-0.0041	0.00163	-0.0046
9/9/2014	-0.0016	-0.0042	-0.0346	-0.0123	-0.0049	-0.0233
9/10/2014	0	0.00421	-0.032	-0.0188	-0.0249	-0.0063
9/11/2014	0	0	-0.0135	0.00839	0.02817	-0.0079
9/12/2014	0	0	0.02866	0.00417	-0.0165	0.00477
9/15/2014	0.01707	0.00837	-0.0114	-0.0042	0.03268	0.02504
9/16/2014	0.01527	-0.0084	-0.0251	-0.0084	0.00321	0
9/17/2014	0	0	0.01358	0.01255	0	0.01229

Tanggal	MPPA	PGAS	PTBA	PTPP	SILO	SMGR
9/18/2014	-0.0153	0.01253	0	-0.0042	-0.0243	0.00305
9/19/2014	0	-0.0167	-0.0058	0.00624	0.04338	-0.0061
9/22/2014	-0.0015	0.02088	-0.0058	-0.0146	-0.0047	-0.0031
9/23/2014	-0.0409	0	0.04199	-0.017	0.00473	-0.0093
9/24/2014	0.00958	-0.0083	-0.017	-0.0108	0	-0.0093
9/25/2014	0.04811	0.00416	0.02256	0.00647	-0.0239	-0.0016
9/26/2014	0.00905	-0.0042	-0.0264	-0.0621	0.01121	-0.0531
9/29/2014	-0.0351	0.00416	0.01703	-0.0161	-0.0016	0.00823
9/30/2014	-0.0204	-0.0042	-0.0094	0	-0.0424	0.01141
10/1/2014	0	-0.0168	-0.0153	0.05871	0.02627	-0.018
10/2/2014	-0.0306	-0.0258	-0.0097	-0.0357	-0.0065	-0.0302
10/3/2014	-0.0503	0.01724	0	-0.0091	-0.0082	-0.0051
10/6/2014	0.01027	-0.0043	-0.0058	0.0114	-0.0132	0.02865
10/7/2014	-0.0189	-0.0043	0.03832	0.04218	-0.0185	0.02299
10/8/2014	-0.03	-0.013	0	-0.0242	-0.0154	-0.0431
10/9/2014	0.00357	0.0087	-0.0228	0.01107	-0.0087	0.00507
10/10/2014	-0.0568	-0.0043	-0.0155	-0.02	-0.0158	0.00168
10/13/2014	0.02791	-0.0087	-0.0501	0.00672	-0.025	0.01669
10/14/2014	0.09614	0.01739	-0.0166	0.01989	-0.0036	0
10/15/2014	0.00664	0	-0.0514	0.03863	0.01802	0.03418
10/16/2014	-0.0388	0	0.0514	0.00839	-0.0036	-0.008
10/17/2014	0.01707	-0.0043	0.05484	0.02678	-0.0054	0.03175
10/20/2014	0.04305	-0.0087	-0.0281	-0.0123	-0.0274	0
10/21/2014	-0.0279	-0.0088	-0.0185	0.0143	-0.0168	-0.0189
10/22/2014	0.05984	0.00877	0.03459	0.00405	-0.0019	0.02516
10/23/2014	-0.0142	0.01302	-0.004	0.00604	0.01312	0
10/24/2014	-0.008	0	-0.0142	-0.0182	-0.0075	-0.0125
10/27/2014	0.04243	0.0043	0.00407	0.02225	0.01119	-0.0063
10/28/2014	0.01375	0.00428	-0.0372	0	0.01473	-0.0143
10/29/2014	-0.0199	0.01274	0.05529	0.02762	0.00729	0.02848
10/30/2014	-0.0093	-0.0085	0.00596	0.01927	0	-0.0205
10/31/2014	-0.0173	0.01269	0.02542	0.00381	0	0.01108
11/3/2014	0.00476	0	-0.0117	0.00569	0.00181	-0.0063
11/4/2014	-0.0273	-0.0127	-0.0098	-0.0172	0.03559	-0.0048
11/5/2014	0.00162	0.00847	0	-0.0058	0.02076	-0.0064
11/6/2014	0.03195	-0.0042	-0.0079	0.02672	-0.0069	-0.0145
11/7/2014	0.01095	0	-0.002	0.00563	0	-0.0049

Tanggal	MPPA	PGAS	PTBA	PTPP	SILO	SMGR
11/10/2014	-0.0268	-0.0128	0.00794	0.01671	-0.0174	-0.0066
11/11/2014	-0.0145	0.0296	0.01763	0.02546	0.01394	0.00656
11/12/2014	-0.0279	0	-0.0216	-0.0054	-0.0017	0.01137
11/13/2014	0.03279	0	-0.02	0.00898	-0.0052	0.00805
11/14/2014	-0.0195	0.0083	-0.0308	0.02474	-0.0247	0.02375
11/17/2014	0.02437	0.00412	0.02678	0.02073	-0.009	-0.0079
11/18/2014	-0.0146	0.01227	0.00406	0.01527	-0.009	0.00629
11/19/2014	0.0352	0.00406	-0.0041	0	0.11333	0.00781
11/20/2014	-0.0223	0	0.01212	-0.0051	-0.0347	-0.0047
11/21/2014	0.03786	-0.0041	0.02772	0.00675	-0.0394	0.00623
11/24/2014	0.01384	-0.0041	0.03832	0.0117	-0.0105	0.01235
11/25/2014	0.01665	-0.0123	-0.0267	-0.0067	0.01404	-0.0139
11/26/2014	-0.0136	0.00412	0.01912	0.00998	-0.0229	-0.0047
11/27/2014	-0.0262	-0.0124	0.01317	-0.0066	-0.0419	0.00312
11/28/2014	0.02011	-0.0084	-0.017	0.0198	0.01293	-0.0031
12/1/2014	0.00153	0	-0.0038	0.05561	-0.0018	0.04132
12/2/2014	0.03161	0.01667	-0.0212	0.00463	0	-0.0106
12/3/2014	0.0292	-0.0083	0.00583	-0.0077	0	0.00454
12/4/2014	-0.0072	-0.0042	0.04546	0.0031	0.04493	-0.0045
12/5/2014	0	0.00418	-0.0093	0	-0.0142	0.00303
12/8/2014	0	-0.0042	-0.0208	-0.0298	0	0.00452
12/9/2014	0.03699	-0.0211	0.01139	0.01108	0.0071	-0.0091
12/10/2014	0.0014	0.02114	-0.0076	0.04164	-0.0107	0.00454
12/11/2014	0.00139	0	0.01134	0	0.00179	-0.0106
12/12/2014	0.00278	0.00418	-0.0267	0.00452	0.04196	0.00912
12/15/2014	-0.0282	-0.0126	-0.0136	-0.003	-0.0366	-0.023
12/16/2014	-0.0528	-0.0127	-0.0298	-0.0244	-0.0053	-0.0411
12/17/2014	-0.0244	-0.0086	0.0434	-0.0109	0	-0.0097
12/18/2014	-0.014	0.00858	0.03042	0.03077	0.0177	0.02889
12/19/2014	-0.0142	-0.0043	-0.0266	0.0459	-0.0231	0.01102
12/22/2014	0.00633	0.00428	-0.0194	-0.0058	-0.0036	0.00156
12/23/2014	-0.0175	0.01274	-0.0178	0.00436	0	0.00468
12/24/2014	-0.0129	0.01258	0.00795	0.01582	-0.0054	0.00155
12/25/2014	0	0	0	0	0	0
12/26/2014	0	0	0	0	0	0
12/29/2014	0	-0.0042	-0.008	0.01977	0	0.00465
12/30/2014	-0.0082	0.00418	-0.002	0	-0.0073	0.00154

Tanggal	MPPA	PGAS	PTBA	PTPP	SILO	SMGR
12/31/2014	0	0	0	0	0	0
1/1/2015	0	0	0	0	0	0
1/2/2015	0.01626	-0.0042	-0.0101	0.00419	0.00546	0
1/5/2015	-0.0146	-0.0126	-0.002	-0.014	-0.0018	0.00154
1/6/2015	-0.0066	-0.0171	-0.0225	0	-0.011	-0.0187
1/7/2015	-0.0233	0	0.00207	0.04014	0	0.00313
1/8/2015	-0.0326	0	-0.0251	0.01882	-0.0018	-0.0063
1/9/2015	0.01384	0	0	-0.0013	0.00184	-0.0079
1/12/2015	0.03046	0	-0.0236	-0.0216	-0.0018	0.01262
1/13/2015	0.02632	-0.0306	-0.0286	0.02023	-0.0055	0.01246
1/14/2015	-0.023	-0.0316	0	-0.0162	-0.0206	-0.014
1/15/2015	-0.0184	0.00913	0	0.00271	-0.0095	0.01712
1/16/2015	-0.0171	-0.0046	-0.0433	-0.0068	0	-0.077
1/19/2015	0.00857	-0.0515	-0.0308	-0.0055	0.00191	-0.0619
1/20/2015	0.0068	0.01432	0.03077	-0.0014	-0.0057	0.00531
1/21/2015	0.03334	0.01412	0.03886	-0.0041	0	-0.0053
1/22/2015	0.07575	0.00466	0.05241	0.04708	0.01709	0.02105
1/23/2015	0.03582	0	-0.0107	-0.0013	0.01495	0.00519
1/26/2015	0.00585	-0.0235	-0.035	-0.0132	-0.0112	0
1/27/2015	0.0414	0.00475	0.01547	0.00797	-0.0019	0.00345
1/28/2015	-0.0042	-0.0095	0.01091	0.00528	0	-0.0034
1/29/2015	0.01117	-0.0291	-0.0175	0	0	-0.0052
1/30/2015	0.05407	-0.0049	0.00441	0.02981	0.00749	0.01208
2/2/2015	-0.0568	0	0	0.01395	0.00743	-0.0052
2/3/2015	0.04892	0.02927	0.00439	0.03709	-0.0019	0.012
2/4/2015	0	0.0331	0.00654	-0.0421	-0.0112	0.00679
2/5/2015	0.02876	-0.0235	-0.0109	0.01008	0.00187	-0.0102
2/6/2015	-0.0208	0	0.01959	0.00125	-0.0618	0.0102
2/9/2015	0.02341	0.00475	-0.0174	-0.0101	-0.0324	0.00842
2/10/2015	0.01023	-0.0048	-0.0199	-0.0089	0.00615	-0.0118
2/11/2015	0	0.00948	-0.0135	0.01015	0.00612	0
2/12/2015	-0.0219	0	0.01798	-0.0076	-0.0041	-0.0223
2/13/2015	0.05071	0	0.02203	0	0.01217	0.00347
2/16/2015	0.0376	0	-0.0287	-0.0167	-0.0142	0.00345
2/17/2015	0.02353	0.01405	-0.0067	0.00258	0	0.012
2/18/2015	0.02752	0	-0.0182	0.0179	0.00204	0.00679
2/19/2015	0	0	0	0	0	0

Tanggal	MPPA	PGAS	PTBA	PTPP	SILO	SMGR
2/20/2015	0.01125	0	-0.0256	0.00506	0	-0.0017
2/23/2015	0	0.00926	-0.0119	0.02244	0	0.00338
2/24/2015	-0.0158	0.00917	-0.0072	0	-0.0123	0.00841
2/25/2015	-0.0218	-0.0184	0.0024	-0.0062	0.01232	0.01496
2/26/2015	-0.0295	-0.0141	0	0.00248	0	-0.0033
2/27/2015	0	-0.019	0.0237	0.00494	-0.002	-0.015
3/2/2015	0.02947	0.01905	0.02999	0	0	0.00168
3/3/2015	0.03088	0.00939	0.00227	-0.0199	0	-0.005
3/4/2015	-0.0496	-0.0189	-0.0206	-0.0076	-0.002	0.00337
3/5/2015	-0.0386	0.00475	0.00231	0.00757	0.02429	0.00168
3/6/2015	0.01101	0.01412	0.0092	-0.005	0.04688	0.00335
3/9/2015	-0.0234	0	-0.0138	-0.0191	0.04478	-0.0135
3/10/2015	0.01606	-0.0236	-0.0164	0.00513	0.00364	-0.0034
3/11/2015	0.01701	-0.0048	-0.036	-0.0273	-0.0183	-0.0172
3/12/2015	0.01198	0	0.04072	-0.0066	-0.0019	-0.0052
3/13/2015	0.03048	0	-0.0214	-0.0013	-0.0019	-0.0105

Tanggal	SMRA	SSMS	TLKM	UNTR	UNVR	WIKA
1/2/2014	0.05001	0.07062	0.01156	0.01825	0.03031	0.04939
1/3/2014	0	0	-0.0233	0.01028	-0.0113	0
1/6/2014	-0.0436	-0.0057	-0.019	-0.0038	0.00939	-0.0213
1/7/2014	-0.0258	0.0057	-0.0072	0.01402	-0.0208	-0.0281
1/8/2014	0.05097	0.02247	0.01439	-0.0153	0	0.04032
1/9/2014	0.05439	-0.0112	-0.0072	-0.034	-0.0048	0.00606
1/10/2014	0.05716	0.03315	0.02837	0.01058	-0.0067	0.07281
1/13/2014	0.05932	-0.0791	0.03437	0	0.04252	0.08607
1/14/2014	0	0	0	0	0	0
1/15/2014	-0.0052	0.0117	-0.0068	-0.0093	0.03633	0
1/16/2014	-0.0485	0.01729	0.01127	0.00925	-0.0081	-0.0052
1/17/2014	-0.0055	0.0226	-0.0022	0.01567	-0.0054	0.01287
1/20/2014	0.0274	-0.0283	0.01117	0.01031	0.01436	-0.0103
1/21/2014	0.03192	-0.0351	0.00222	0.01527	0.00356	-0.0156
1/22/2014	-0.0105	-0.018	-0.0111	0.05646	0.01236	-0.032
1/23/2014	0.00528	-0.0122	-0.0022	0	0.00263	0.03724
1/24/2014	-0.0106	-0.0062	-0.0068	-0.0615	-0.0177	0.00261
1/27/2014	-0.0379	0	-0.0275	-0.0548	-0.0344	-0.0453
1/28/2014	-0.0055	0.0423	0	0.00268	0.02098	0.01353
1/29/2014	0.02198	-0.0059	0.03653	0.03675	0.02847	0.03694
1/30/2014	0.03734	0	0.01998	-0.0052	0.00175	0.01031
1/31/2014	0	0	0	0	0	0
2/3/2014	0	0.00593	-0.0245	-0.017	-0.0053	0.01274
2/4/2014	-0.0373	-0.024	-0.0113	-0.0362	-0.0196	-0.0102
2/5/2014	-0.0109	0	0.01806	-0.0179	0.00983	0.03271
2/6/2014	0.01635	0.04155	0.03084	-0.0042	0.00266	0.0074
2/7/2014	0.02139	0.01729	-0.0043	0.01662	0.00089	-0.0025
2/10/2014	0.03637	0.03371	0	-0.0124	-0.0044	-0.0199
2/11/2014	0.0202	-0.0055	-0.0088	0.02608	-0.018	-0.0025
2/12/2014	-0.005	0.00554	0.00657	0.00271	0.01439	0
2/13/2014	-0.0254	-0.0055	-0.011	0.00673	0.00445	0
2/14/2014	0.00514	0.03279	-0.0066	-0.0176	0.00885	0.01995
2/17/2014	0.05001	0	0.01105	0.00952	0	0.03159
2/18/2014	0.01932	0.0107	0.0131	0.0027	-0.0106	-0.0096
2/19/2014	-0.044	0.00531	0.01079	0.0027	0.01151	-0.0369
2/20/2014	-0.0151	0.01053	0.01279	0.00403	-0.0035	-0.028
2/21/2014	0.05913	-0.0052	0.01681	-0.0027	0.00353	0.02796

Tanggal	SMRA	SSMS	TLKM	UNTR	UNVR	WIKA
2/24/2014	0.01425	0	-0.0105	-0.004	-0.0009	0.005
2/25/2014	-0.0143	0.00525	-0.0364	-0.0027	0.00088	0.03432
2/26/2014	-0.0242	0	-0.0022	-0.0082	-0.0133	0.00241
2/27/2014	-0.0198	0.01558	0	0.0122	0	0.03077
2/28/2014	0.00499	0.02545	0.01735	0.02265	0.01944	0
3/3/2014	-0.015	0	-0.0108	-0.0066	-0.0106	0.00465
3/4/2014	0.05884	-0.0101	0	0.01055	-0.0089	0.03645
3/5/2014	0	0.0101	0.00866	0.01821	0.00356	0.01993
3/6/2014	0.02353	0	-0.0043	0.03046	0.0062	0
3/7/2014	-0.0093	0.02482	-0.0065	-0.0305	-0.0062	-0.0199
3/10/2014	0.00468	-0.0148	-0.0491	-0.0026	0.00443	0.00891
3/11/2014	0.02765	0.03423	-0.0023	0.02425	0.00793	0.01103
3/12/2014	-0.0091	-0.0048	-0.0069	-0.0165	0.01827	-0.0199
3/13/2014	-0.0092	-0.0048	0.01148	0.01527	0.04385	0.01993
3/14/2014	0.03637	0.03342	0.04027	0.02124	0.0188	0.08811
3/17/2014	0.02643	0.01861	-0.0132	0	-0.038	-0.0101
3/18/2014	-0.049	-0.0186	-0.0179	0	-0.0256	-0.0226
3/19/2014	0.02703	0.00468	0.02237	0.01837	-0.0026	0
3/20/2014	-0.0738	-0.0141	-0.0315	-0.0421	-0.0272	-0.0316
3/21/2014	0.00477	-0.0095	-0.0138	0.00757	0	0.01065
3/24/2014	0.03739	0.00952	0.03189	0.02482	0.0062	0.01054
3/25/2014	-0.0185	-0.0095	-0.0181	0.01701	-0.0018	-0.0105
3/26/2014	0	-0.0096	0.00909	-0.0318	0.01667	0.01889
3/27/2014	-0.0094	0	-0.016	0	-0.0009	-0.0042
3/28/2014	0.00471	0	0.01822	0.03183	0.01898	-0.0021
3/31/2014	0	0	0	0	0	0
4/1/2014	0.05481	0.01914	0.0179	0.01198	0.02532	0.01865
4/2/2014	-0.027	0	-0.0022	-0.0024	-0.0025	0.02434
4/3/2014	0.03146	0.02342	0.00443	-0.0012	0.0025	0.002
4/4/2014	0.00442	0.00922	0.00662	-0.0477	-0.0202	-0.002
4/7/2014	-0.0044	0.00458	0.01959	0.0369	0.01853	0.00798
4/8/2014	-0.0134	0.00456	0.0043	0.00962	-0.0092	-0.0303
4/9/2014	0	0	0	0	0	0
4/10/2014	-0.0891	-0.0091	-0.0305	-0.0193	-0.0042	-0.1359
4/11/2014	0.00976	0.00458	0.02404	0.02052	0.03246	-0.0047
4/14/2014	0.0381	0.00456	0.01074	0.01306	0.00734	0.06616
4/15/2014	0.04567	0.00454	-0.0172	0.01405	-0.0024	0

Tanggal	SMRA	SSMS	TLKM	UNTR	UNVR	WIKA
4/16/2014	-0.0135	0.02237	0.00866	-0.0117	-0.0189	-0.0111
4/17/2014	-0.0045	0.01319	0.00215	0.01634	0.02299	-0.0045
4/18/2014	0	0	0	0	0	0
4/21/2014	-0.0137	0	-0.0043	0	-0.0033	-0.0181
4/22/2014	0.0046	0	0.0086	0.01379	0.00406	-0.0023
4/23/2014	0	0	0.00214	0.00456	-0.028	-0.0115
4/24/2014	0.03604	0	0.00639	-0.0023	-0.0228	0.0274
4/25/2014	-0.0134	0.00436	0.00424	-0.0092	-0.0094	0.04836
4/28/2014	-0.0273	0.02151	-0.0149	-0.0351	-0.0156	-0.0173
4/29/2014	0.0046	0.02105	-0.0261	0.04196	0.01476	0.00218
4/30/2014	0.01818	0	-0.0022	-0.0092	0.00858	-0.0132
5/1/2014	0	0	0	0	0	0
5/2/2014	-0.0045	0.03279	0.01533	0.02278	-0.0017	0
5/5/2014	-0.0091	0.03565	0.01081	-0.0045	0.01782	-0.0044
5/6/2014	0	-0.0039	0.00215	0.00226	-0.0118	-0.0089
5/7/2014	0.0181	0.01165	0.00855	0.00563	0.02853	0.02212
5/8/2014	0.05666	0.01912	-0.0021	-0.0022	0.00577	0.02378
5/9/2014	0.05763	-0.0153	0.00213	0.00337	0.01145	0.00426
5/12/2014	0.0198	-0.0039	0	0.00336	-0.0057	-0.0043
5/13/2014	-0.0198	-0.0156	0.00425	0.00112	-0.0123	0.00213
5/14/2014	0.01587	0.00391	0.01681	0.00223	0.01967	0.02318
5/15/2014	0	0	0	0	0	0
5/16/2014	-0.0039	0.0039	0.05472	-0.0202	0	0.00416
5/19/2014	-0.004	-0.0236	0.0176	-0.008	-0.0098	-0.0295
5/20/2014	-0.016	-0.0161	-0.0599	-0.0302	-0.03	0
5/21/2014	0.016	0.00806	0.02037	0.0129	0.01342	0.00851
5/22/2014	0.01183	0.00401	0.02194	0.00928	0.00083	0.01263
5/23/2014	-0.0198	-0.0161	0	-0.0012	0	-0.0063
5/26/2014	-0.0121	0	0.01176	0	0.00333	-0.0063
5/27/2014	0	0	0	0	0	0
5/28/2014	0.03579	0.01613	-0.0059	0.01719	0.00249	-0.0042
5/29/2014	0	0	0	0	0	0
5/30/2014	-0.0197	-0.004	0.00976	-0.0149	-0.0362	-0.0021
6/2/2014	-0.0161	0.03551	-0.0216	0.02281	0.02123	-0.0172
6/3/2014	-0.0205	0	0.01183	0.00786	0.01003	0.00217
6/4/2014	-0.0041	-0.0117	-0.0118	0.00446	0.00746	0.00862
6/5/2014	-0.0083	0.00391	0	0.00444	0.00576	-0.0065

Tanggal	SMRA	SSMS	TLKM	UNTR	UNVR	WIKA
6/6/2014	-0.0084	-0.0039	0.00396	0.01322	0.00082	-0.0174
6/9/2014	-0.0085	0	-0.024	-0.0088	-0.0165	-0.0313
6/10/2014	0	0	0.02202	0.00988	0.00748	0.00678
6/11/2014	0.04167	0	-0.018	0.00545	0.00906	0.0354
6/12/2014	0.00813	0	-0.0307	0	-0.0157	0
6/13/2014	-0.0163	0.00391	0.01445	-0.0044	-0.0067	-0.0131
6/16/2014	0.00411	-0.0039	-0.0124	-0.0412	-0.005	0.0022
6/17/2014	-0.0207	0.00391	0.00414	0.02472	-0.0051	-0.0066
6/18/2014	-0.0169	0	0	0	-0.0034	-0.0156
6/19/2014	-0.0215	-0.0237	-0.0041	0	0.00509	-0.0204
6/20/2014	0.00434	0.00399	0	0.00111	0.01094	0
6/23/2014	-0.0352	0.00398	0.0185	0.00773	-0.0025	-0.0092
6/24/2014	0.03091	0	0.00407	0.01203	-0.0034	0.0274
6/25/2014	-0.0445	0	-0.0061	-0.0044	0	-0.0274
6/26/2014	-0.0046	-0.008	0.0061	0.00761	0.00336	0.00922
6/27/2014	0.01361	0.00399	-0.0164	-0.0142	-0.011	-0.0023
6/30/2014	0.02227	-0.008	0.01636	0.01527	-0.0068	0.01822
7/1/2014	-0.0178	-0.004	0.00607	-0.0098	0.0161	0
7/2/2014	-0.0135	0.00402	0.00803	0.01195	0.01914	0.00225
7/3/2014	0.00905	0	-0.0101	0	-0.0041	0.02227
7/4/2014	0.05264	0	0.02	0	0.00331	0.02179
7/7/2014	0.04185	0.008	0.02927	0.02137	0.01961	0.04632
7/8/2014	0.00816	0.00794	0.00575	0.01469	0.01046	0.00206
7/9/2014	0	0	0	0	0	0
7/10/2014	0.09309	0.00394	-0.0096	0.02469	0.00559	0.02634
7/11/2014	-0.077	-0.0119	-0.0058	-0.0457	-0.0324	-0.0141
7/14/2014	0.00399	-0.012	0.0135	0.00953	0	0.01809
7/15/2014	0.04289	-0.0624	0.01709	0.00316	0.03157	0.03907
7/16/2014	0.00381	0.00428	-0.0019	-0.0212	-0.004	0.00191
7/17/2014	-0.0231	-0.0172	-0.0019	-0.0173	-0.0113	-0.0077
7/18/2014	0.03065	-0.0044	0.01315	-0.0077	0.00081	0.02097
7/21/2014	0.02974	0.0087	0.00558	0.01203	0.00564	0.05506
7/22/2014	0.01093	0.00862	-0.0168	-0.0076	0.00321	-0.0126
7/23/2014	-0.0073	0.01702	-0.0152	-0.0055	0.0008	-0.0201
7/24/2014	-0.0259	0.06137	0.01143	0.00877	-0.0024	-0.0149
7/25/2014	0.01117	0.00396	0.00378	0	-0.0129	-0.0075
7/28/2014	0	0	0	0	0	0

Tanggal	SMRA	SSMS	TLKM	UNTR	UNVR	WIKA
7/29/2014	0	0	0	0	0	0
7/30/2014	0	0	0	0	0	0
7/31/2014	0	0	0	0	0	0
8/1/2014	0	0	0	0	0	0
8/4/2014	-0.0149	0.00787	0.01498	0.04274	0.0233	-0.0133
8/5/2014	-0.0113	0.00391	0.00741	0.00522	-0.0184	0.02828
8/6/2014	-0.0153	0.03077	-0.0205	-0.0094	-0.0049	-0.0169
8/7/2014	0.00385	0	0.0131	0.00733	0.00081	0.00189
8/8/2014	0.00766	0.00378	0.00371	0	-0.009	-0.0152
8/11/2014	0.0189	0.00752	0.01835	0.00831	0.02429	0.02085
8/12/2014	-0.0038	0.00746	0.01085	-0.0209	0.00319	0.03684
8/13/2014	0.01493	0.00371	0.0018	0.03016	0.02052	0.009
8/14/2014	-0.0149	-0.0339	-0.0108	-0.0124	-0.0008	-0.0072
8/15/2014	0.00375	-0.0116	-0.0165	0.00104	-0.0023	0.00719
8/18/2014	0.01117	-0.0117	0.00552	-0.001	-0.0126	0.01776
8/19/2014	0.00738	-0.0039	-0.0092	0.00517	-0.0016	0.01572
8/20/2014	0.02541	-0.0119	0.00922	0.0072	0.01421	0.00346
8/21/2014	-0.0036	0	-0.0037	-0.0093	0	0.01542
8/22/2014	0	0.02751	-0.0111	-0.0273	-0.0094	-0.0051
8/25/2014	-0.0109	-0.0117	0	-0.0161	-0.0032	-0.0034
8/26/2014	-0.0561	0.0117	0.00742	-0.0207	0.00554	-0.0403
8/27/2014	0.00384	0.02677	0.01103	-0.0246	0.00864	0.01066
8/28/2014	0.01898	-0.019	-0.0055	0	0.00468	0.00353
8/29/2014	0.00749	0.00384	-0.0204	0.00113	-0.0341	0.01051
9/1/2014	-0.0188	0.02647	0.01674	0.00113	0.03094	-0.007
9/2/2014	-0.0076	0.04737	-0.0037	0.00225	0	0
9/3/2014	0.00763	0.00709	0.00922	0.01007	0	0.02939
9/4/2014	-0.0309	0.01054	0.00183	-0.0409	-0.0102	-0.0172
9/5/2014	-0.0359	-0.0141	0	0	0.00472	0.00691
9/8/2014	0.00406	0.00707	0.03774	0.01153	0.00079	-0.0086
9/9/2014	-0.0081	-0.0142	-0.0053	-0.0374	-0.0174	-0.014
9/10/2014	-0.0082	-0.0108	-0.0036	-0.029	-0.0048	0.00176
9/11/2014	0.02037	-0.0145	-0.0054	0.00489	0.0008	0.00875
9/12/2014	0.01996	0.01455	-0.0018	0.01693	0.004	0
9/15/2014	0.01569	0.02143	-0.0054	-0.0194	0.0008	0.00174
9/16/2014	-0.0157	-0.0035	0.00718	-0.0037	0.00874	-0.014
9/17/2014	0.01957	0.01058	0.01949	0.01098	0.00945	0.00352

Tanggal	SMRA	SSMS	TLKM	UNTR	UNVR	WIKA
9/18/2014	-0.0156	-0.0213	0.00873	0.00846	0.00235	-0.0018
9/19/2014	0.02335	0.00714	0.02406	0.01789	-0.0071	0.01745
9/22/2014	-0.0116	0.00355	-0.0258	-0.0095	0.00706	-0.0069
9/23/2014	0.01927	-0.0143	0.00694	-0.0229	-0.015	-0.0087
9/24/2014	-0.0077	0	-0.0069	0.00609	-0.0056	-0.0018
9/25/2014	0.00384	0	0.00521	0.00363	-0.0008	0
9/26/2014	-0.0592	-0.0218	-0.0017	-0.0257	0.01585	-0.0636
9/29/2014	-0.0123	-0.0375	0.01036	-0.0025	0.00627	-0.0228
9/30/2014	0.00411	-0.035	0.00172	-0.01	-0.0063	0
10/1/2014	-0.0041	-0.004	-0.0173	-0.0025	0	0.04136
10/2/2014	-0.0506	-0.008	-0.0373	-0.0294	-0.0047	-0.0394
10/3/2014	-0.0579	-0.0121	0.01081	-0.0104	-0.028	-0.0471
10/6/2014	0.00458	0.02004	0.01952	0.04735	-0.0008	0
10/7/2014	0.05335	0.00791	0.00526	0.02225	-0.0033	0.02577
10/8/2014	-0.0131	-0.032	-0.0212	-0.0514	-0.0024	-0.0218
10/9/2014	0.02169	0.0081	0	-0.0052	0.00408	0.03537
10/10/2014	0	-0.0245	-0.009	-0.0091	0.00325	-0.0117
10/13/2014	-0.0043	-0.0552	0	-0.0509	-0.0098	0.01165
10/14/2014	0.01709	-0.0914	0	-0.011	0.01384	0.03229
10/15/2014	0.00844	-0.0096	0.02842	-0.0455	0.00564	0.03128
10/16/2014	0.01253	0.01439	-0.0177	-0.0015	-0.0056	0.01439
10/17/2014	0.03666	0.05106	0	0.00436	0.03261	0.02469
10/20/2014	-0.0161	-0.0045	0.01416	0.01153	-0.0246	0.00348
10/21/2014	0.0241	0.00454	0.00176	-0.0115	0.01433	0.00864
10/22/2014	0.02353	0.03118	0.0035	0.01296	0.01257	0.00344
10/23/2014	0.01538	0.02598	0.00697	0.02543	-0.0261	0
10/24/2014	-0.035	0.02532	-0.0035	-0.0155	-0.0194	-0.0069
10/27/2014	-0.0362	-0.0126	-0.0229	-0.0405	-0.0181	0
10/28/2014	0	0.0084	-0.0437	0.00588	-0.0058	-0.0139
10/29/2014	0.01222	0.01247	0.01295	0.036	0.04019	0.01564
10/30/2014	-0.0081	0.02045	0.0146	0	-0.0211	-0.0035
10/31/2014	0.02817	0.00806	-0.0036	0.03884	-0.0016	-0.0104
11/3/2014	0.0274	0	0.00363	-0.0014	0.00164	0.00523
11/4/2014	-0.0117	0.01594	-0.0073	-0.0262	-0.0025	-0.0052
11/5/2014	0	-0.0403	0	0.03976	-0.0016	-0.0212
11/6/2014	0.01165	-0.0124	-0.011	0.02522	-0.0074	-0.0108
11/7/2014	-0.0314	-0.0735	-0.0357	-0.0119	-0.01	-0.0036

Tanggal	SMRA	SSMS	TLKM	UNTR	UNVR	WIKA
11/10/2014	-0.012	-0.0045	0.00572	0.00529	0.00419	0.00181
11/11/2014	0.016	0.0354	0.03181	0.00919	0.01985	0.04075
11/12/2014	0	0.00866	0.00551	-0.0332	0.00082	-0.0052
11/13/2014	0.01183	0	0.00183	0.02667	0.00327	0
11/14/2014	-0.0118	0.05859	0.00183	0.01047	-0.0065	0.01214
11/17/2014	0.03125	0.04374	0.00364	-0.0291	0.01951	0.01879
11/18/2014	0.00384	0.04935	0.00182	0.01596	0.01756	0.04143
11/19/2014	0.04495	-0.077	0.00723	0.017	-0.0159	-0.0016
11/20/2014	-0.0074	-0.0161	-0.02	-0.0223	0.0096	-0.023
11/21/2014	0.02909	0.02806	0.01641	-0.031	0.00159	0
11/24/2014	0.0107	0.00394	0.01792	0.02299	0.00159	0.00993
11/25/2014	0.02105	0.11164	-0.0107	-0.055	0.00633	-0.0033
11/26/2014	0.00347	0	0.01071	0.02648	-0.0032	-0.0017
11/27/2014	0.00345	0.02778	-0.0018	0.01502	0.01258	-0.0066
11/28/2014	0.00687	0	0.00532	-0.0068	-0.0063	0.00167
12/1/2014	0.04356	0.01361	0.01928	-0.0221	-0.0135	0.03756
12/2/2014	0.02269	-0.0136	-0.0017	0.00139	-0.0032	0.02999
12/3/2014	0.01274	-0.0069	-0.0087	-0.0311	0	-0.0062
12/4/2014	-0.0192	0.03056	-0.0018	0.02833	0.00955	-0.0016
12/5/2014	-0.0097	0.00334	-0.0018	-0.0126	0.00316	0
12/8/2014	-0.0264	0.00333	-0.0124	-0.0071	-0.0167	-0.0222
12/9/2014	0.04256	0.00332	-0.0036	0.00284	-0.004	-0.0016
12/10/2014	0	0.0066	0.01421	-0.0114	0.00241	0.05466
12/11/2014	0.0032	0.00328	0	-0.0101	-0.0065	0.00303
12/12/2014	0.01899	0.00654	-0.0035	-0.0073	0.00242	0.01354
12/15/2014	-0.0126	-0.0033	-0.0143	-0.0147	0.00804	-0.0151
12/16/2014	-0.0588	0.00326	-0.0145	-0.0149	-0.0008	-0.023
12/17/2014	-0.0102	0.00325	-0.0073	0.03841	-0.0162	-0.0062
12/18/2014	0.03015	0.00324	0.02715	0.00289	0.03205	0.02164
12/19/2014	0.04201	0.0956	0.00534	-0.0102	0.00942	0.02268
12/22/2014	-0.0289	-0.0732	0.00355	0.00727	-0.0157	-0.0015
12/23/2014	0.00972	0.00945	0	0	0	0.02513
12/24/2014	-0.013	-0.0031	0.00705	-0.0058	0.00079	0.03161
12/25/2014	0	0	0	0	0	0
12/26/2014	0	0	0	0	0	0
12/29/2014	-0.0066	0.02177	0.00176	0.00291	0.01339	0.05101
12/30/2014	0	0.02432	0.00525	0.00868	0.0109	-0.0108

Tanggal	SMRA	SSMS	TLKM	UNTR	UNVR	WIKA
12/31/2014	0	0	0	0	0	0
1/1/2015	0	0	0	0	0	0
1/2/2015	0.01954	0.0149	-0.0017	-0.0029	0.00694	-0.0014
1/5/2015	0.01282	0.01176	-0.0088	-0.0249	-0.0015	-0.0276
1/6/2015	-0.0032	0	-0.0071	0.00443	0	-0.0056
1/7/2015	0.02524	0	-0.0018	0.00442	0.01982	0.02637
1/8/2015	0.01852	0	0.00886	-0.0074	0.00752	0.00819
1/9/2015	-0.0279	-0.0029	0.00878	0.01176	-0.0045	-0.0014
1/12/2015	-0.0158	-0.0029	-0.0088	-0.0015	-0.0344	-0.0206
1/13/2015	-0.0325	0	0.00176	0.02316	0.02765	0.00554
1/14/2015	-0.0133	-0.0029	-0.0053	-0.0014	-0.0107	-0.0195
1/15/2015	0.0329	0.00881	0.00177	-0.0014	0.00229	0.02229
1/16/2015	0.03498	-0.0118	0.00529	-0.0101	0.02341	-0.0181
1/19/2015	0.00312	0.00295	0.00351	-0.0117	0.01482	0.00559
1/20/2015	-0.0094	-0.003	0.01564	0.00439	0.00587	0.00418
1/21/2015	0.0125	0.01176	0.00516	0.00146	0.0499	-0.0014
1/22/2015	0.05145	-0.0237	-0.0121	0.02732	-0.0042	0.01244
1/23/2015	-0.0391	0.00894	0.00347	0.01408	0.01111	0.00411
1/26/2015	-0.0217	-0.003	-0.0245	0.00974	-0.0195	-0.0291
1/27/2015	-0.0063	-0.003	0.00354	0.00828	0.0007	0.02229
1/28/2015	0.028	-0.003	0.00529	0	-0.0007	0.01232
1/29/2015	0.00306	-0.0212	0.00526	0	-0.0035	0
1/30/2015	0.00913	0.00913	-0.0105	-0.0166	0.01264	0.01887
2/2/2015	-0.0183	0.00905	-0.0089	-0.0169	0.00972	0.00533
2/3/2015	0.0304	0	0.0071	0.0169	0.00551	0.01319
2/4/2015	-0.006	0.00599	0.00705	0.00696	0.00069	-0.0428
2/5/2015	-0.0152	0.01482	-0.0106	-0.0014	-0.0321	-0.0041
2/6/2015	0.05068	0.0117	0.00531	0.0274	0.03895	-0.0014
2/9/2015	0.02299	-0.0058	0.01054	-0.0205	-0.0144	-0.0041
2/10/2015	-0.0143	-0.0059	-0.0053	0.01777	-0.0175	-0.0167
2/11/2015	0.01431	0.00587	0.00526	0.00675	0.00492	-0.0014
2/12/2015	-0.0086	0.00292	0.01216	0.00134	0	-0.0071
2/13/2015	0.00856	0.01447	0.02894	0.01864	0.01806	-0.0014
2/16/2015	-0.0201	0.00573	-0.0307	-0.0106	-0.0343	-0.0143
2/17/2015	-0.0175	0.017	0.00173	0.01325	0.02254	0.00574
2/18/2015	0.0684	0.01117	0	0.01437	-0.0112	0.01983
2/19/2015	0	0	0	0	0	0

Tanggal	SMRA	SSMS	TLKM	UNTR	UNVR	WIKA
2/20/2015	0.00823	-0.0084	-0.0017	-0.0065	-0.0049	0.01945
2/23/2015	-0.011	0.00559	0.0069	0.00391	0.02032	0.0123
2/24/2015	-0.0028	0.06471	-0.0017	0.02441	-0.0007	-0.0082
2/25/2015	0.00277	0.0078	0.02213	0.0201	0.00898	0.00546
2/26/2015	0.00276	0.00517	0.00168	-0.005	0.00412	0.00136
2/27/2015	0	0.02293	-0.0135	0.03681	-0.0138	-0.0041
3/2/2015	-0.0111	0	0.0051	0.0413	0.01105	-0.0082
3/3/2015	-0.0056	0	-0.0017	0.02737	-0.009	-0.0097
3/4/2015	0.00559	0.00503	-0.012	-0.0262	0.00069	-0.014
3/5/2015	-0.0398	-0.0025	0	0.00576	0.00415	-0.0085
3/6/2015	-0.0354	-0.0025	0.02545	-0.0011	0.04187	-0.0028
3/9/2015	-0.0336	0.00252	-0.0135	-0.0531	-0.008	-0.0231
3/10/2015	0.03058	0.01	0	0.03455	0.00797	0.01737
3/11/2015	-0.0213	-0.005	-0.0017	-0.0201	0.02482	-0.0115
3/12/2015	-0.0031	-0.005	-0.0051	-0.0084	0.02736	0.0029
3/13/2015	0.02439	0.00501	0.0102	0.0012	0.00125	-0.0146

LAMPIRAN 3 : Korelasi *log-return* harian saham JII

	AALI	ADRO	AKRA	ANTM	ASRI	ASII
AALI	1	0.20097	0.07574	0.16827	0.18562	0.15507
ADRO	0.20097	1	0.09716	0.18218	0.15045	0.12405
AKRA	0.07574	0.09716	1	0.07529	0.1138	0.11929
ANTM	0.16827	0.18218	0.07529	1	0.22638	0.09532
ASRI	0.18562	0.15045	0.1138	0.22638	1	0.19765
ASII	0.15507	0.12405	0.11929	0.09532	0.19765	1
BMTR	0.1332	0.06819	0.06707	0.12832	0.18688	0.14983
BSDE	0.16429	0.16647	0.15073	0.20406	0.45737	0.18637
CPIN	0.16539	0.16417	0.15928	0.12598	0.23734	0.22908
ICBP	0.11001	0.12667	0.07582	0.10026	0.1729	0.17281
INCO	0.1627	0.20447	0.08938	0.29052	0.1402	0.10155
INDF	0.22669	0.13957	0.15852	0.09701	0.18657	0.26627
INTP	0.08692	0.08842	0.15208	0.13796	0.28555	0.28515
ITMG	0.16571	0.31889	0.08959	0.10469	0.12296	0.11201
KLBF	0.06189	0.18138	0.0502	0.06944	0.18395	0.22739
LPKR	0.16051	0.18734	0.15261	0.17909	0.41816	0.24497
LSIP	0.48382	0.21973	0.13245	0.22796	0.24122	0.14364
MNCN	0.05332	0.04525	0.07031	0.095	0.10489	0.10039
MPPA	0.0217	0.06937	0.0197	0.07912	0.15258	0.07835
PGAS	0.13235	0.14239	0.11628	0.05902	0.13857	0.24725
PTBA	0.21997	0.40365	0.07679	0.15618	0.1755	0.18577
PTPP	0.1067	0.05732	0.12408	0.14105	0.38953	0.1715
SILO	0.05625	0.0549	-0.0234	-0.0464	0.04303	0.07616
SMGR	0.10009	0.09398	0.23381	0.16031	0.26826	0.33034
SMRA	0.09452	0.09009	0.15834	0.18969	0.365	0.17358
SSMS	0.15881	0.07126	0.12209	0.03035	0.13368	0.17286
TLKM	0.16538	0.17245	0.04525	0.1715	0.17524	0.28916
UNTR	0.17828	0.18584	0.12845	0.14453	0.23276	0.26884
UNVR	0.17971	0.09341	0.05581	0.03793	0.14286	0.31434
WIKA	0.08254	0.05728	0.11786	0.15398	0.41542	0.19445

	BMTR	BSDE	CPIN	ICBP	INCO	INDF
AAI	0.1332	0.16429	0.16539	0.11001	0.1627	0.22669
ADRO	0.06819	0.16647	0.16417	0.12667	0.20447	0.13957
AKRA	0.06707	0.15073	0.15928	0.07582	0.08938	0.15852
ANTM	0.12832	0.20406	0.12598	0.10026	0.29052	0.09701
ASRI	0.18688	0.45737	0.23734	0.1729	0.1402	0.18657
ASII	0.14983	0.18637	0.22908	0.17281	0.10155	0.26627
BMTR	1	0.19782	0.17706	0.14044	0.06489	0.14805
BSDE	0.19782	1	0.24539	0.24845	0.14222	0.19424
CPIN	0.17706	0.24539	1	0.24305	0.14988	0.24404
ICBP	0.14044	0.24845	0.24305	1	0.10579	0.26029
INCO	0.06489	0.14222	0.14988	0.10579	1	0.10914
INDF	0.14805	0.19424	0.24404	0.26029	0.10914	1
INTP	0.16479	0.29142	0.28401	0.15394	0.08592	0.20162
ITMG	0.07507	0.14792	0.17103	0.16851	0.14199	0.17538
KLBF	0.14408	0.17871	0.23433	0.18443	0.11031	0.18437
LPKR	0.20602	0.37227	0.29334	0.21214	0.09846	0.2374
LSIP	0.12369	0.17981	0.1322	0.10683	0.17652	0.164
MNCN	0.22533	0.17451	0.15631	0.12832	0.05846	0.13831
MPPA	0.09813	0.15557	0.08384	0.0631	0.06101	0.04852
PGAS	0.12549	0.16138	0.20137	0.18934	0.07232	0.20232
PTBA	0.1084	0.20853	0.20572	0.20246	0.19334	0.17192
PTPP	0.1511	0.36159	0.20737	0.16274	0.02232	0.20603
SILO	0.02498	0.01715	0.02706	-0.0045	-0.0098	0.07176
SMGR	0.14096	0.29607	0.28282	0.18569	0.10185	0.259
SMRA	0.10862	0.37612	0.16414	0.13689	0.10744	0.18278
SSMS	0.03162	0.15914	0.15059	0.07249	0.06573	0.15785
TLKM	0.14817	0.20044	0.21612	0.17986	0.11956	0.22924
UNTR	0.17169	0.23877	0.20156	0.16958	0.19514	0.20538
UNVR	0.14927	0.20826	0.27698	0.2643	0.0559	0.36246
WIKA	0.19691	0.32375	0.21627	0.14767	0.00371	0.17396

	INTP	ITMG	KLBF	LPKR	LSIP	MNCN
AAI	0.08692	0.16571	0.06189	0.16051	0.48382	0.05332
ADRO	0.08842	0.31889	0.18138	0.18734	0.21973	0.04525
AKRA	0.15208	0.08959	0.0502	0.15261	0.13245	0.07031
ANTM	0.13796	0.10469	0.06944	0.17909	0.22796	0.095
ASRI	0.28555	0.12296	0.18395	0.41816	0.24122	0.10489
ASII	0.28515	0.11201	0.22739	0.24497	0.14364	0.10039
BMTR	0.16479	0.07507	0.14408	0.20602	0.12369	0.22533
BSDE	0.29142	0.14792	0.17871	0.37227	0.17981	0.17451
CPIN	0.28401	0.17103	0.23433	0.29334	0.1322	0.15631
ICBP	0.15394	0.16851	0.18443	0.21214	0.10683	0.12832
INCO	0.08592	0.14199	0.11031	0.09846	0.17652	0.05846
INDF	0.20162	0.17538	0.18437	0.2374	0.164	0.13831
INTP	1	0.09045	0.22659	0.30208	0.13507	0.12188
ITMG	0.09045	1	0.12385	0.0793	0.1486	0.08958
KLBF	0.22659	0.12385	1	0.16032	0.00491	0.10779
LPKR	0.30208	0.0793	0.16032	1	0.21144	0.12803
LSIP	0.13507	0.1486	0.00491	0.21144	1	0.05953
MNCN	0.12188	0.08958	0.10779	0.12803	0.05953	1
MPPA	0.1525	0.09826	0.08724	0.1105	0.04248	0.11894
PGAS	0.24136	0.15068	0.23887	0.22924	0.05601	0.13125
PTBA	0.14375	0.34595	0.18351	0.20673	0.25262	0.13638
PTPP	0.25117	0.07141	0.14539	0.33739	0.1482	0.10292
SILO	-0.0037	0.08062	0.07699	0.05441	0.01793	0.03427
SMGR	0.51796	0.10605	0.25385	0.31595	0.14753	0.16737
SMRA	0.23617	0.04313	0.20412	0.31399	0.1522	0.11083
SSMS	0.16288	0.05882	0.08869	0.16938	0.2243	0.0969
TLKM	0.21925	0.18045	0.23881	0.23927	0.10749	0.15638
UNTR	0.1976	0.18799	0.12795	0.20365	0.15506	0.13125
UNVR	0.17282	0.14535	0.23164	0.23819	0.09676	0.12354
WIKA	0.30892	0.03715	0.17807	0.3576	0.10236	0.13771

	MPPA	PGAS	PTBA	PTPP	SILO	SMGR
AAI	0.0217	0.13235	0.21997	0.1067	0.05625	0.10009
ADRO	0.06937	0.14239	0.40365	0.05732	0.0549	0.09398
AKRA	0.0197	0.11628	0.07679	0.12408	-0.0234	0.23381
ANTM	0.07912	0.05902	0.15618	0.14105	-0.0464	0.16031
ASRI	0.15258	0.13857	0.1755	0.38953	0.04303	0.26826
ASII	0.07835	0.24725	0.18577	0.1715	0.07616	0.33034
BMTR	0.09813	0.12549	0.1084	0.1511	0.02498	0.14096
BSDE	0.15557	0.16138	0.20853	0.36159	0.01715	0.29607
CPIN	0.08384	0.20137	0.20572	0.20737	0.02706	0.28282
ICBP	0.0631	0.18934	0.20246	0.16274	-0.0045	0.18569
INCO	0.06101	0.07232	0.19334	0.02232	-0.0098	0.10185
INDF	0.04852	0.20232	0.17192	0.20603	0.07176	0.259
INTP	0.1525	0.24136	0.14375	0.25117	-0.0037	0.51796
ITMG	0.09826	0.15068	0.34595	0.07141	0.08062	0.10605
KLBF	0.08724	0.23887	0.18351	0.14539	0.07699	0.25385
LPKR	0.1105	0.22924	0.20673	0.33739	0.05441	0.31595
LSIP	0.04248	0.05601	0.25262	0.1482	0.01793	0.14753
MNCN	0.11894	0.13125	0.13638	0.10292	0.03427	0.16737
MPPA	1	0.10902	0.02297	0.11987	0.0693	0.17269
PGAS	0.10902	1	0.21515	0.19183	0.04329	0.25116
PTBA	0.02297	0.21515	1	0.10575	0.04325	0.16367
PTPP	0.11987	0.19183	0.10575	1	0.05318	0.25954
SILO	0.0693	0.04329	0.04325	0.05318	1	0.00277
SMGR	0.17269	0.25116	0.16367	0.25954	0.00277	1
SMRA	0.1284	0.13529	0.10987	0.35059	0.06195	0.24394
SSMS	-0.0537	0.03268	0.11484	0.10906	0.04002	0.16598
TLKM	0.06973	0.20872	0.21621	0.20907	0.01949	0.22806
UNTR	0.07923	0.16612	0.24531	0.17302	0.0274	0.23055
UNVR	0.0433	0.19695	0.15378	0.19336	0.02761	0.2322
WIKA	0.14445	0.17892	0.08263	0.56574	0.04472	0.28994

	SMRA	SSMS	TLKM	UNTR	UNVR	WIKA
AAI	0.09452	0.15881	0.16538	0.17828	0.17971	0.08254
ADRO	0.09009	0.07126	0.17245	0.18584	0.09341	0.05728
AKRA	0.15834	0.12209	0.04525	0.12845	0.05581	0.11786
ANTM	0.18969	0.03035	0.1715	0.14453	0.03793	0.15398
ASRI	0.365	0.13368	0.17524	0.23276	0.14286	0.41542
ASII	0.17358	0.17286	0.28916	0.26884	0.31434	0.19445
BMTR	0.10862	0.03162	0.14817	0.17169	0.14927	0.19691
BSDE	0.37612	0.15914	0.20044	0.23877	0.20826	0.32375
CPIN	0.16414	0.15059	0.21612	0.20156	0.27698	0.21627
ICBP	0.13689	0.07249	0.17986	0.16958	0.2643	0.14767
INCO	0.10744	0.06573	0.11956	0.19514	0.0559	0.00371
INDF	0.18278	0.15785	0.22924	0.20538	0.36246	0.17396
INTP	0.23617	0.16288	0.21925	0.1976	0.17282	0.30892
ITMG	0.04313	0.05882	0.18045	0.18799	0.14535	0.03715
KLBF	0.20412	0.08869	0.23881	0.12795	0.23164	0.17807
LPKR	0.31399	0.16938	0.23927	0.20365	0.23819	0.3576
LSIP	0.1522	0.2243	0.10749	0.15506	0.09676	0.10236
MNCN	0.11083	0.0969	0.15638	0.13125	0.12354	0.13771
MPPA	0.1284	-0.0537	0.06973	0.07923	0.0433	0.14445
PGAS	0.13529	0.03268	0.20872	0.16612	0.19695	0.17892
PTBA	0.10987	0.11484	0.21621	0.24531	0.15378	0.08263
PTPP	0.35059	0.10906	0.20907	0.17302	0.19336	0.56574
SILO	0.06195	0.04002	0.01949	0.0274	0.02761	0.04472
SMGR	0.24394	0.16598	0.22806	0.23055	0.2322	0.28994
SMRA	1	0.12676	0.18117	0.15731	0.16181	0.36915
SSMS	0.12676	1	0.11348	0.12816	0.13149	0.08384
TLKM	0.18117	0.11348	1	0.2077	0.22709	0.21901
UNTR	0.15731	0.12816	0.2077	1	0.16287	0.10301
UNVR	0.16181	0.13149	0.22709	0.16287	1	0.20707
WIKA	0.36915	0.08384	0.21901	0.10301	0.20707	1

LAMPIRAN 4 : Log-return mingguan saham WIKA.JK dan PTPP.JK

Tanggal	WIKA	PTPP
1/6/2014	0.06979576	0.0459371
1/13/2014	0.09377683	0.08972877
1/20/2014	-0.018065	-0.0341589
1/27/2014	0.01550419	0.0415939
2/3/2014	0.04020642	0.02919915
2/10/2014	-0.0024661	0.00716849
2/17/2014	-0.0149257	0.00356507
2/24/2014	0.0724955	0
3/3/2014	0.04110168	0.11421797
3/10/2014	0.10804148	0.14732471
3/17/2014	-0.0536211	-0.0193644
3/24/2014	0.01263175	0.02210035
3/31/2014	0.04299536	0.04016604
4/7/2014	-0.1628726	-0.1286688
4/14/2014	0.0505855	0.0719735
4/21/2014	0.04386668	0.03009803
4/28/2014	-0.0282935	0
5/5/2014	0.03684057	0.03183293
5/12/2014	0.02521142	0.00780238
5/19/2014	-0.0146293	-0.0078024
5/26/2014	-0.012712	-0.0026144
6/2/2014	-0.0303053	-0.0761237
6/9/2014	-0.0022002	0.02510592
6/16/2014	-0.040455	-0.022285
6/23/2014	-0.0022962	0.00281294
6/30/2014	0.06453852	0.04932507
7/7/2014	0.06062462	0.10642946
7/14/2014	0.07236783	0.10054123
7/21/2014	0	-0.0175443
7/28/2014	0	0
8/4/2014	-0.0152094	0.013187
Tanggal	WIKA	PTPP
8/11/2014	0.06669137	0.06753621
8/18/2014	0.04725288	-0.0081968
8/25/2014	-0.0189825	0.01430055
9/1/2014	0.01212136	-0.0020305
9/8/2014	-0.0121214	-0.0226114
9/15/2014	0.00694447	0.00207684
9/22/2014	-0.0810524	-0.0980109
9/29/2014	-0.0679213	-0.002291
10/6/2014	0.02772455	0.02043204
10/13/2014	0.11430477	0.10040443
10/20/2014	0.00867308	-0.0061162
10/27/2014	-0.0121635	0.07293872
11/3/2014	-0.0355909	0.01509463
11/10/2014	0.04948006	0.07048988
11/17/2014	0.03556683	0.03767569
11/24/2014	0	0.02817088
12/1/2014	0.05974335	0.05561401
12/8/2014	0.04744578	0.02744075
12/15/2014	0	0.03835278
12/22/2014	0.05524661	0.01436806
12/29/2014	0.03883983	0.02396168
1/5/2015	0	0.04360364
1/12/2015	-0.0303891	-0.0215642
1/19/2015	0.02493204	0.0348094
1/26/2015	0.02432552	0.02981426
2/2/2015	-0.0298125	0.02022825
2/9/2015	-0.0307287	-0.0164042
2/16/2015	0.03072867	0.00886643
2/23/2015	0.00685404	0.02367712
3/2/2015	-0.0432726	-0.0249389
3/9/2015	-0.0289456	-0.049169

LAMPIRAN 5 : Log-return bulanan saham WIKA.JK dan PTPP.JK

Tanggal	WIKA		PTPP	
	Close	Return	Close	Return
1/1/2014	1950		1350	
2/3/2014	2145	0.0953102	1405	0.0399327
3/3/2014	2390	0.1081538	1830	0.2642787
4/1/2014	2265	-0.053719	1845	0.0081633
5/1/2014	2345	0.0347106	1910	0.034624
6/2/2014	2215	-0.057033	1850	-0.031918
7/1/2014	2650	0.1793072	2260	0.2001792
8/1/2014	2870	0.0797524	2465	0.086827
9/1/2014	2605	-0.096879	2150	-0.136724
10/1/2014	2860	0.0933889	2630	0.201516
11/3/2014	3005	0.0494559	3060	0.1514311
12/1/2014	3680	0.2026352	3575	0.1555503
1/1/2015	3745	0.0175089	3915	0.0908502
2/2/2015	3660	-0.022958	4060	0.0363676
3/2/2015	3405	-0.072218	3770	-0.074108

LAMPIRAN 6 : Pemodelan ARMA(p,q) saham WIKA.JK

1. ARMA(2,3)

Dengan konstanta

Dependent Variable: WIKAMONTH
Method: Least Squares
Date: 06/14/15 Time: 16:59
Sample (adjusted): 2014M04 2015M03
Included observations: 12 after adjustments
Convergence achieved after 12 iterations
Backcast: 2014M01 2014M03

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.052254	0.009227	5.663304	0.0013
AR(2)	-0.355246	0.320038	-1.110009	0.3095
AR(1)	-0.537286	0.288414	-1.862896	0.1118
MA(3)	-0.932359	0.066840	-13.94918	0.0000
MA(2)	-0.176048	0.094542	-1.862121	0.1119
MA(1)	0.191942	0.145840	1.316116	0.2362

R-squared	0.737997	Mean dependent var	0.029496
Adjusted R-squared	0.519662	S.D. dependent var	0.096802
S.E. of regression	0.067090	Akaike info criterion	-2.258701
Sum squared resid	0.027007	Schwarz criterion	-2.016248
Log likelihood	19.55221	F-statistic	3.380106
Durbin-Watson stat	1.723954	Prob(F-statistic)	0.085135

Inverted AR Roots	-.27+.53i	-.27-.53i	
Inverted MA Roots	.97	-.58+.79i	-.58-.79i

Tanpa konstanta

Dependent Variable: WIKAMONTH
Method: Least Squares
Date: 06/14/15 Time: 16:58
Sample (adjusted): 2014M04 2015M03
Included observations: 12 after adjustments
Convergence achieved after 87 iterations
Backcast: 2014M01 2014M03

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AR(2)	-0.778010	0.162880	-4.776578	0.0020
AR(1)	-1.523108	0.164864	-9.238596	0.0000
MA(3)	0.906247	0.179713	5.042744	0.0015
MA(2)	2.177802	0.312210	6.975436	0.0002
MA(1)	2.210016	0.158196	13.97007	0.0000

R-squared	0.553843	Mean dependent var	0.029496
Adjusted R-squared	0.298897	S.D. dependent var	0.096802
S.E. of regression	0.081055	Akaike info criterion	-1.893053
Sum squared resid	0.045989	Schwarz criterion	-1.691008
Log likelihood	16.35832	Durbin-Watson stat	1.233212

Inverted AR Roots	-.76-.45i	-.76+.45i	
Inverted MA Roots	-.65+.76i	-.65-.76i	-.91

2. ARMA(2,2)

Dengan konstanta

Dependent Variable: WIKAMONTH
Method: Least Squares
Date: 06/14/15 Time: 17:00
Sample (adjusted): 2014M04 2015M03
Included observations: 12 after adjustments
Convergence achieved after 26 iterations
Backcast: 2014M02 2014M03

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.047875	0.006050	7.913385	0.0001
AR(2)	-0.501360	0.368642	-1.360018	0.2160
AR(1)	0.350172	0.798326	0.438632	0.6741
MA(2)	0.171681	0.952581	0.180227	0.8621
MA(1)	-1.056495	0.652088	-1.620173	0.1492

R-squared	0.511402	Mean dependent var	0.029496
Adjusted R-squared	0.232203	S.D. dependent var	0.096802
S.E. of regression	0.084822	Akaike info criterion	-1.802183
Sum squared resid	0.050364	Schwarz criterion	-1.600139
Log likelihood	15.81310	F-statistic	1.831677
Durbin-Watson stat	2.410385	Prob(F-statistic)	0.227468

Inverted AR Roots	.18+ .69i	.18- .69i
Inverted MA Roots	.86	.20

Tanpa konstanta

Dependent Variable: WIKAMONTH
Method: Least Squares
Date: 06/14/15 Time: 17:01
Sample (adjusted): 2014M04 2015M03
Included observations: 12 after adjustments
Convergence achieved after 30 iterations
Backcast: 2014M02 2014M03

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AR(2)	-0.654603	0.511116	-1.280733	0.2362
AR(1)	-1.324478	0.443554	-2.986058	0.0174
MA(2)	0.910380	0.587178	1.550432	0.1596
MA(1)	1.434923	0.269095	5.332406	0.0007

R-squared	0.249254	Mean dependent var	0.029496
Adjusted R-squared	-0.032276	S.D. dependent var	0.096802
S.E. of regression	0.098352	Akaike info criterion	-1.539322
Sum squared resid	0.077385	Schwarz criterion	-1.377687
Log likelihood	13.23593	Durbin-Watson stat	1.525898

Inverted AR Roots	-.66+ .46i	-.66- .46i
Inverted MA Roots	-.72+ .63i	-.72- .63i

3. ARMA(1,1)

Dengan konstanta

Dependent Variable: WIKAMONTH
Method: Least Squares
Date: 06/14/15 Time: 17:02
Sample (adjusted): 2014M03 2015M03
Included observations: 13 after adjustments
Convergence achieved after 23 iterations
Backcast: 2014M02

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.044063	0.008162	5.398544	0.0003
AR(1)	0.177084	0.348126	0.508679	0.6220
MA(1)	-0.904371	0.084133	-10.74935	0.0000

R-squared	0.311559	Mean dependent var	0.035547
Adjusted R-squared	0.173871	S.D. dependent var	0.095214
S.E. of regression	0.086542	Akaike info criterion	-1.857206
Sum squared resid	0.074895	Schwarz criterion	-1.726833
Log likelihood	15.07184	F-statistic	2.262789
Durbin-Watson stat	1.694161	Prob(F-statistic)	0.154644

Inverted AR Roots	.18
Inverted MA Roots	.90

Tanpa konstanta

Dependent Variable: WIKAMONTH
Method: Least Squares
Date: 06/14/15 Time: 17:03
Sample (adjusted): 2014M03 2015M03
Included observations: 13 after adjustments
Convergence achieved after 14 iterations
Backcast: 2014M02

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AR(1)	0.831383	0.161697	5.141600	0.0003
MA(1)	-0.922688	0.137152	-6.727507	0.0000

R-squared	0.017072	Mean dependent var	0.035547
Adjusted R-squared	-0.072285	S.D. dependent var	0.095214
S.E. of regression	0.098595	Akaike info criterion	-1.654945
Sum squared resid	0.106932	Schwarz criterion	-1.568030
Log likelihood	12.75714	Durbin-Watson stat	2.033256

Inverted AR Roots	.83
Inverted MA Roots	.92

4. ARMA(0,1)

Dengan konstanta

Dependent Variable: WIKAMONTH
Method: Least Squares
Date: 06/14/15 Time: 17:05
Sample: 2014M02 2015M03
Included observations: 14
Convergence achieved after 144 iterations
Backcast: OFF (Roots of MA process too large)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.075052	0.012258	6.122919	0.0001
MA(1)	-2.177671	0.723095	-3.011596	0.0108

R-squared	0.726153	Mean dependent var	0.039815
Adjusted R-squared	0.703333	S.D. dependent var	0.092863
S.E. of regression	0.050580	Akaike info criterion	-2.998967
Sum squared resid	0.030700	Schwarz criterion	-2.907673
Log likelihood	22.99277	F-statistic	31.82012
Durbin-Watson stat	1.351047	Prob(F-statistic)	0.000109

Inverted MA Roots 2.18
Estimated MA process is noninvertible

Tanpa konstanta

Dependent Variable: WIKAMONTH
Method: Least Squares
Date: 06/14/15 Time: 17:05
Sample: 2014M02 2015M03
Included observations: 14
Convergence achieved after 4 iterations
Backcast: 2014M01

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MA(1)	0.060199	0.281858	0.213580	0.8342

R-squared	-0.193919	Mean dependent var	0.039815
Adjusted R-squared	-0.193919	S.D. dependent var	0.092863
S.E. of regression	0.101468	Akaike info criterion	-1.669397
Sum squared resid	0.133845	Schwarz criterion	-1.623750
Log likelihood	12.68578	Durbin-Watson stat	1.904255

Inverted MA Roots -.06

5. ARMA(1,0)

Dengan konstanta

Dependent Variable: WIKAMONTH
Method: Least Squares
Date: 06/14/15 Time: 17:08
Sample (adjusted): 2014M03 2015M03
Included observations: 13 after adjustments
Convergence achieved after 3 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.037247	0.023886	1.559362	0.1472
AR(1)	-0.151978	0.313393	-0.484943	0.6372

R-squared	0.020932	Mean dependent var	0.035547
Adjusted R-squared	-0.068075	S.D. dependent var	0.095214
S.E. of regression	0.098402	Akaike info criterion	-1.658879
Sum squared resid	0.106512	Schwarz criterion	-1.571964
Log likelihood	12.78272	F-statistic	0.235170
Durbin-Watson stat	1.956869	Prob(F-statistic)	0.637230

Inverted AR Roots	-.15
-------------------	------

Tanpa konstanta

Dependent Variable: WIKAMONTH
Method: Least Squares
Date: 06/14/15 Time: 17:08
Sample (adjusted): 2014M03 2015M03
Included observations: 13 after adjustments
Convergence achieved after 2 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AR(1)	0.057312	0.283835	0.201921	0.8434

R-squared	-0.147095	Mean dependent var	0.035547
Adjusted R-squared	-0.147095	S.D. dependent var	0.095214
S.E. of regression	0.101977	Akaike info criterion	-1.654340
Sum squared resid	0.124791	Schwarz criterion	-1.610882
Log likelihood	11.75321	Durbin-Watson stat	2.034096

Inverted AR Roots	.06
-------------------	-----

LAMPIRAN 7 : Pemodelan ARMA(p,q) saham PTPP.JK

1. ARMA(1,2)

Dengan konstanta

Dependent Variable: PTPPMONTH				
Method: Least Squares				
Date: 06/14/15 Time: 17:10				
Sample (adjusted): 2014M03 2015M03				
Included observations: 13 after adjustments				
Convergence achieved after 21 iterations				
Backcast: 2014M01 2014M02				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.072957	0.007190	10.14680	0.0000
AR(1)	-0.480636	0.392873	-1.223387	0.2522
MA(2)	-0.890014	0.308086	-2.888852	0.0179
MA(1)	-0.105219	0.254076	-0.414125	0.6885
R-squared	0.491469	Mean dependent var	0.075926	
Adjusted R-squared	0.321959	S.D. dependent var	0.117719	
S.E. of regression	0.096934	Akaike info criterion	-1.581915	
Sum squared resid	0.084566	Schwarz criterion	-1.408084	
Log likelihood	14.28245	F-statistic	2.899345	
Durbin-Watson stat	1.665880	Prob(F-statistic)	0.094080	
Inverted AR Roots	-.48			
Inverted MA Roots	1.00	-.89		

Tanpa konstanta

Dependent Variable: PTPPMONTH				
Method: Least Squares				
Date: 06/14/15 Time: 17:11				
Sample (adjusted): 2014M03 2015M03				
Included observations: 13 after adjustments				
Convergence achieved after 34 iterations				
Backcast: 2014M01 2014M02				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
AR(1)	0.895352	0.102817	8.708175	0.0000
MA(2)	0.236330	0.386980	0.610703	0.5550
MA(1)	-1.150673	0.387335	-2.970745	0.0140
R-squared	0.047616	Mean dependent var	0.075926	
Adjusted R-squared	-0.142860	S.D. dependent var	0.117719	
S.E. of regression	0.125847	Akaike info criterion	-1.108319	
Sum squared resid	0.158376	Schwarz criterion	-0.977946	
Log likelihood	10.20408	Durbin-Watson stat	1.586418	
Inverted AR Roots	.90			
Inverted MA Roots	.88	.27		

2. ARMA(0,2)

Dengan konstanta

Dependent Variable: PTPPMONTH
Method: Least Squares
Date: 06/14/15 Time: 17:13
Sample: 2014M02 2015M03
Included observations: 14
Convergence achieved after 309 iterations
Backcast: OFF (Roots of MA process too large)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.090939	0.003692	24.63202	0.0000
MA(2)	-0.829765	0.796074	-1.042322	0.3196
MA(1)	-2.061669	0.726034	-2.839632	0.0161

R-squared	0.835886	Mean dependent var	0.073355
Adjusted R-squared	0.806047	S.D. dependent var	0.113509
S.E. of regression	0.049990	Akaike info criterion	-2.966593
Sum squared resid	0.027489	Schwarz criterion	-2.829652
Log likelihood	23.76615	F-statistic	28.01328
Durbin-Watson stat	2.264072	Prob(F-statistic)	0.000048

Inverted MA Roots 2.41 - .34
Estimated MA process is noninvertible

Tanpa konstanta

Dependent Variable: PTPPMONTH
Method: Least Squares
Date: 06/14/15 Time: 17:13
Sample: 2014M02 2015M03
Included observations: 14
Convergence achieved after 6 iterations
Backcast: 2013M12 2014M01

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MA(2)	0.078795	0.290266	0.271458	0.7907
MA(1)	0.198524	0.291651	0.680691	0.5090

R-squared	-0.381983	Mean dependent var	0.073355
Adjusted R-squared	-0.497148	S.D. dependent var	0.113509
S.E. of regression	0.138888	Akaike info criterion	-0.978737
Sum squared resid	0.231478	Schwarz criterion	-0.887443
Log likelihood	8.851159	Durbin-Watson stat	1.957579

Inverted MA Roots - .10+ .26i - .10- .26i

3. ARMA(1,1)

Dengan konstanta

Dependent Variable: PTPPMONTH
Method: Least Squares
Date: 06/14/15 Time: 17:15
Sample (adjusted): 2014M03 2015M03
Included observations: 13 after adjustments
Failure to improve SSR after 11 iterations
Backcast: OFF (Roots of MA process too large)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.080759	0.097655	0.826986	0.4275
AR(1)	0.602021	0.831560	0.723966	0.4857
MA(1)	-0.997557	0.892528	-1.117676	0.2898

R-squared	0.154503	Mean dependent var	0.075926
Adjusted R-squared	-0.014597	S.D. dependent var	0.117719
S.E. of regression	0.118575	Akaike info criterion	-1.227362
Sum squared resid	0.140601	Schwarz criterion	-1.096989
Log likelihood	10.97785	F-statistic	0.913679
Durbin-Watson stat	1.523559	Prob(F-statistic)	0.432077

Inverted AR Roots	.60
Inverted MA Roots	1.00

Tanpa konstanta

Dependent Variable: PTPPMONTH
Method: Least Squares
Date: 06/14/15 Time: 17:15
Sample (adjusted): 2014M03 2015M03
Included observations: 13 after adjustments
Convergence achieved after 67 iterations
Backcast: OFF (Roots of MA process too large)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AR(1)	1.677225	1.320309	1.270328	0.2302
MA(1)	-2.198561	2.411687	-0.911628	0.3815

R-squared	0.207634	Mean dependent var	0.075926
Adjusted R-squared	0.135600	S.D. dependent var	0.117719
S.E. of regression	0.109447	Akaike info criterion	-1.446109
Sum squared resid	0.131766	Schwarz criterion	-1.359194
Log likelihood	11.39971	Durbin-Watson stat	1.604817

Inverted AR Roots	1.68	Estimated AR process is nonstationary
Inverted MA Roots	2.20	Estimated MA process is noninvertible

4. ARMA(0,1)

Dengan konstanta

Dependent Variable: PTPPMONTH
Method: Least Squares
Date: 06/14/15 Time: 17:16
Sample: 2014M02 2015M03
Included observations: 14
Convergence achieved after 15 iterations
Backcast: 2014M01

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.078171	0.006783	11.52421	0.0000
MA(1)	-0.905952	0.099696	-9.087178	0.0000

R-squared	0.318000	Mean dependent var	0.073355
Adjusted R-squared	0.261166	S.D. dependent var	0.113509
S.E. of regression	0.097567	Akaike info criterion	-1.684981
Sum squared resid	0.114233	Schwarz criterion	-1.593687
Log likelihood	13.79487	F-statistic	5.595296
Durbin-Watson stat	1.591608	Prob(F-statistic)	0.035697

Inverted MA Roots	.91
-------------------	-----

Tanpa konstanta

Dependent Variable: PTPPMONTH
Method: Least Squares
Date: 06/14/15 Time: 17:16
Sample: 2014M02 2015M03
Included observations: 14
Convergence achieved after 5 iterations
Backcast: 2014M01

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MA(1)	0.201959	0.275488	0.733093	0.4765

R-squared	-0.388391	Mean dependent var	0.073355
Adjusted R-squared	-0.388391	S.D. dependent var	0.113509
S.E. of regression	0.133748	Akaike info criterion	-1.116968
Sum squared resid	0.232551	Schwarz criterion	-1.071321
Log likelihood	8.818773	Durbin-Watson stat	1.942965

Inverted MA Roots	-.20
-------------------	------

5. ARMA(1,0)

Dengan konstanta

Dependent Variable: PTPPMONTH
Method: Least Squares
Date: 06/14/15 Time: 17:18
Sample (adjusted): 2014M03 2015M03
Included observations: 13 after adjustments
Convergence achieved after 3 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.077493	0.027494	2.818504	0.0167
AR(1)	-0.217466	0.317217	-0.685543	0.5072

R-squared	0.040974	Mean dependent var	0.075926
Adjusted R-squared	-0.046210	S.D. dependent var	0.117719
S.E. of regression	0.120408	Akaike info criterion	-1.255215
Sum squared resid	0.159480	Schwarz criterion	-1.168300
Log likelihood	10.15890	F-statistic	0.469969
Durbin-Watson stat	1.684638	Prob(F-statistic)	0.507192

Inverted AR Roots	-.22
-------------------	------

Tanpa konstanta

Dependent Variable: PTPPMONTH
Method: Least Squares
Date: 06/14/15 Time: 17:18
Sample (adjusted): 2014M03 2015M03
Included observations: 13 after adjustments
Convergence achieved after 2 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AR(1)	0.220226	0.284007	0.775425	0.4531

R-squared	-0.381439	Mean dependent var	0.075926
Adjusted R-squared	-0.381439	S.D. dependent var	0.117719
S.E. of regression	0.138361	Akaike info criterion	-1.044099
Sum squared resid	0.229725	Schwarz criterion	-1.000641
Log likelihood	7.786642	Durbin-Watson stat	1.803562

Inverted AR Roots	.22
-------------------	-----

LAMPIRAN 8 : Data residual saham WIKA.JK dan PTPP.JK

Tanggal	WIKA.JK		PTPP.JK	
	resid	transform	resid	transform
2/3/2014	0.0482496	0.0482496	-0.0407999	0
3/3/2014	0.1093428	0.1093428	0.1427462	0.1427462
4/1/2014	0.0085636	0.0085636	0.0701769	0.0701769
5/1/2014	-0.0037863	0	0.0240683	0.0240683
6/2/2014	-0.1078799	0	-0.0885819	0
7/1/2014	0.0243668	0.0243668	0.0308647	0.0308647
8/1/2014	0.0570586	0.0570586	0.0369592	0.0369592
9/1/2014	-0.0868813	0	-0.1804974	0
10/1/2014	-0.0405529	0	-0.0597139	0
11/3/2014	-0.0381576	0	0.0109846	0.0109846
12/1/2014	0.1174171	0.1174171	0.0858023	0.0858023
1/1/2015	0.0878653	0.0878653	0.0959198	0.0959198
2/2/2015	0.0178463	0.0178463	0.0515549	0.0515549
3/2/2015	-0.1014325	0	-0.1032857	0

LAMPIRAN 9 : Perhitungan *Kendall's Tau* data residual

WIKA.JK	PTPP.JK	Diskordan (D)	Konkordan (C)	n	14
-0.10787988	-0.08858187	2	11	C(n,2)	91
-0.10143252	-0.10328569	1	11	Di	15
-0.08688133	-0.18049739	0	11	Ko	76
-0.04055293	-0.05971393	0	10	<i>Kendall's Tau</i>	0.67033
-0.03815756	0.01098458	1	8		
-0.0037863	0.024068313	1	7		
0.008563629	0.070176938	4	3		
0.017846263	0.051554872	3	3		
0.024366806	0.030864746	1	4		
0.048249605	-0.04079987	0	4		
0.057058616	0.036959158	0	3		
0.087865325	0.095919823	1	1		
0.109342833	0.142746231	1	0		
0.117417059	0.085802263	0	0		
Jumlah		15	76		

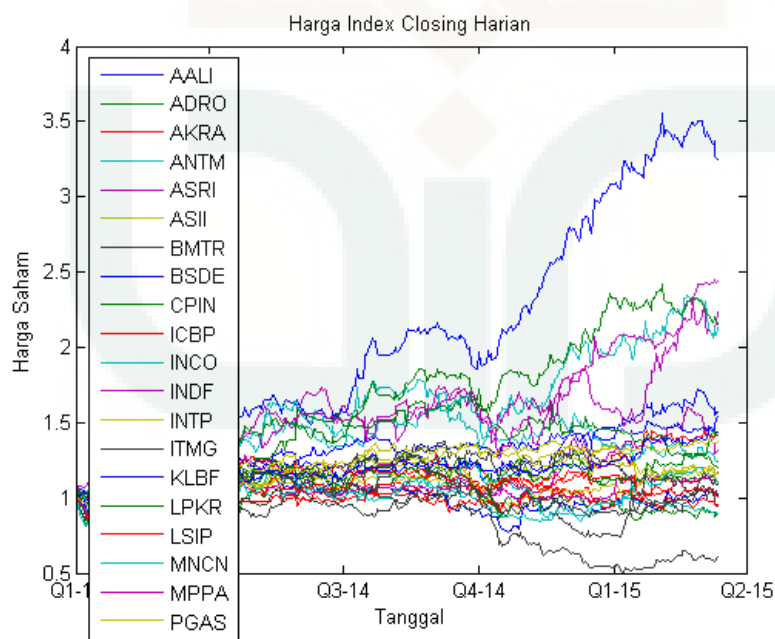
LAMPIRAN 10 : Program untuk estimasi VaR dengan simulasi *Monte Carlo* –
copula *Gumbel* dengan matlab

**ESTIMASI VALUE at RISK DENGAN SIMULASI MONTE CARLO -
COPULA GUMBEL**

Oleh : Annisa Damasari NIM : 11610010 PRODI MATEMATIKA FAKULTAS SAINS DAN
TEKNOLOGI UNIVERSITAS ISLAM NEGERI SUNAN KALIJAGA YOGYAKARTA 10 Juni 2015

Plot *return* harian 30 saham syariah yang tergabung dalam JII periode 01/012014 sampai
13/03/2015

```
%Plot closing 30 saham yang tergabung dalam JII
figure
plot(tgl, ret2price(price2ret(sahams)));
datetick('x')
xlabel('Tanggal')
ylabel('Harga Saham')
title ('Harga Index Closing Harian')
legend(nami, 'Location', 'NorthWest')
```

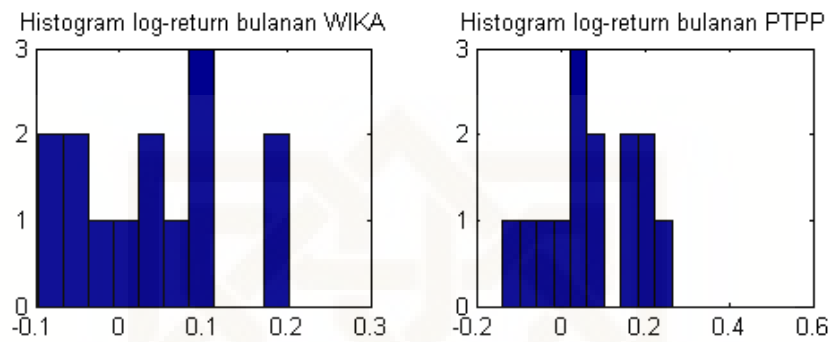


```
%Uji Normalitas pada return bulanan saham wika dan ptp
%Histogram return bulanan wika dan ptp
figure, subplot(2,2,1)
```

```

hist(price2ret(datas(:,1)))
title('Histogram log-return bulanan WIKA')
subplot(2,2,2)
hist(price2ret(datas(:,2)))
title('Histogram log-return bulanan PTPP')

```

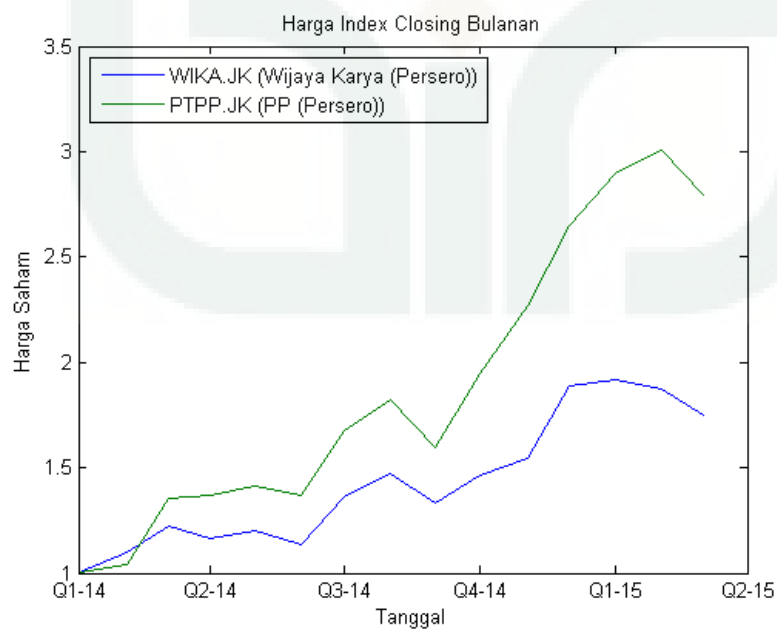


Plot *Closing* Bulanan Saham WIKA.JK dan PTPP.JK

```

figure
plot(Date, ret2price(price2ret(datas)));
datetick('x')
xlabel('Tanggal')
ylabel('Harga Saham')
title('Harga Index Closing Bulanan')
legend(series, 'Location', 'Northwest')

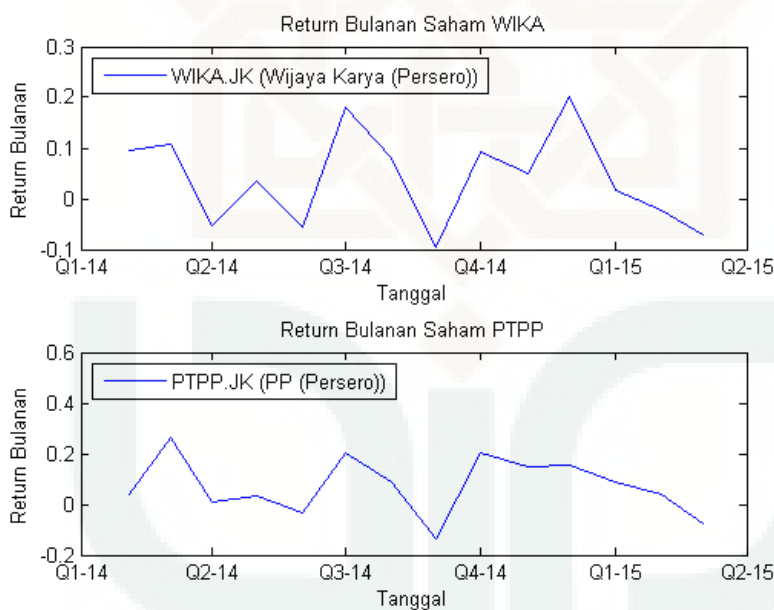
```



Plot Return Bulanan Saham WIKA.JK dan PTPP.JK

%untuk melihat bentuk data dan stasioneritas data

```
figure, subplot (2,1,1)
returns=price2ret(datas);
plot(Date(2:end), returns(:,1));
datetick('x')
xlabel('Tanggal')
ylabel('Return Bulanan')
title ('Return Bulanan Saham WIKA')
legend(series(:,1), 'Location', 'Northwest')
subplot (2,1,2)
plot(Date(2:end), returns(:,2));
datetick('x')
xlabel('Tanggal')
ylabel('Return Bulanan')
title ('Return Bulanan Saham PTPP')
legend(series(:,2), 'Location', 'Northwest')
```



Correlogram Return ACF dan PACF Saham WIKA.JK dan PTPP.JK

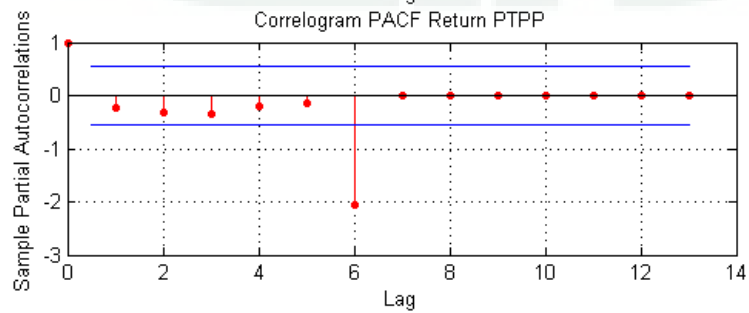
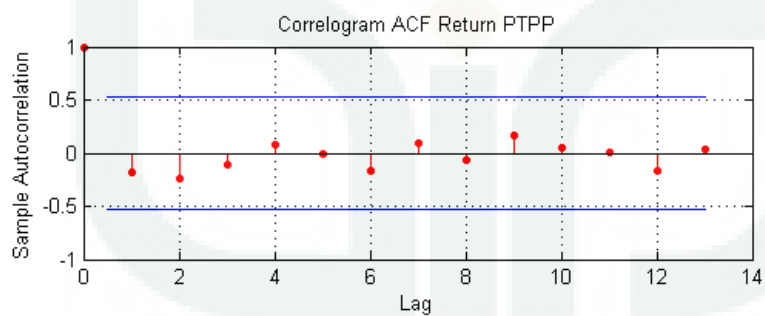
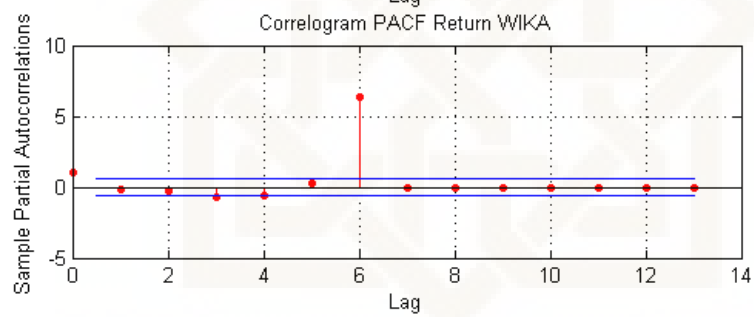
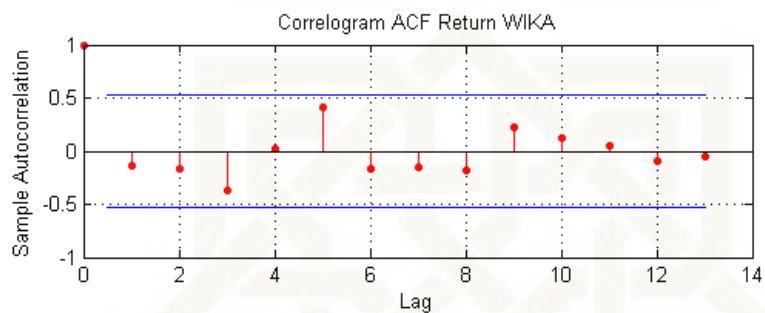
untuk mempertegas kestasioneran data dan mengetahui dugaan model ARMA Saham WIKA.JK dan PTPP.JK

```
figure, subplot(2,1,1)
autocorr(returns(:,1))
title('Correlogram ACF Return WIKA')
subplot(2,1,2)
```

```

parcorr(returns(:,1))
title('Correlogram PACF Return WIKA')
figure, subplot(2,1,1)
autocorr(returns(:,2))
title('Correlogram ACF Return PTPP')
subplot(2,1,2)
parcorr(returns(:,2))
title('Correlogram PACF Return PTPP')

```



Model yang menggambarkan distribusi data (Distribusi Marginal)

Pemodelan ARMA tebaik yang telah diperoleh dari tahapan estimasi model menggunakan eviews, kemudian di inputkan ke dalam matlab

```
T=size(returns,1); index=1;
modelwika = arima(0,0,1);
modelptpp = arima(0,0,1);
nIndices = size(returns,2);
residuals = NaN(T, nIndices);
variances = NaN(T, nIndices);
fit = cell(nIndices,1);
options = optimset('fmincon');
options = optimset(options, 'Display' , 'off', 'Diagnostics', 'off', ...
                        'Algorithm', 'sqp', 'TolCon' , 1e-7);

%Memasukkan masing-masing data return ke dalam model yang telah diperoleh
%Fitting Distribusi Marginal WIKA
fit{1} = estimate(modelwika, returns(:,1), 'print', false, 'options',
options);
[residuals(:,1), variances(:,1)] = infer(fit{1}, returns(:,1));

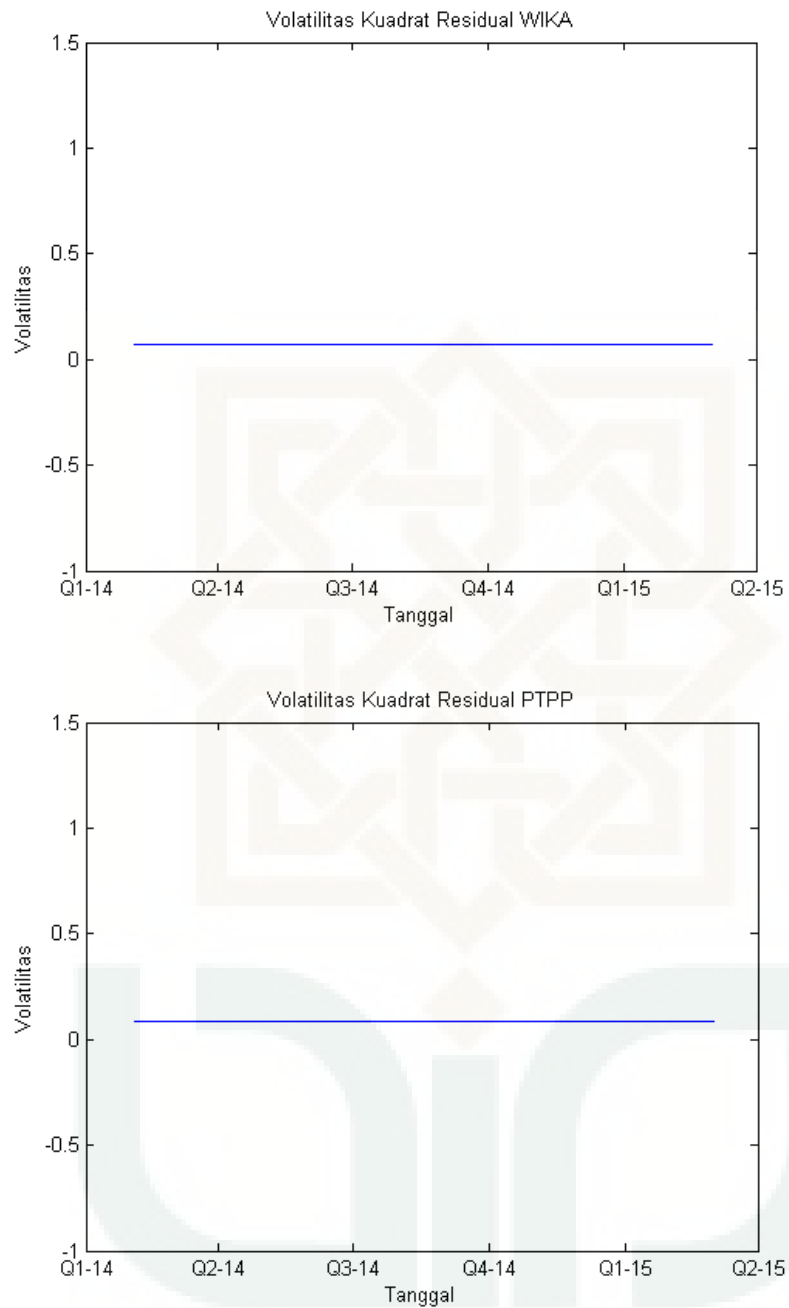
%Fitting Distribusi Marginal PTPP
fit{2} = estimate(modelptpp, returns(:,2), 'print', false, 'options',
options);
[residuals(:,2), variances(:,2)] = infer(fit{2}, returns(:,2));
```

Uji Heterokedastisitas

Menguji ada tidaknya volatilitas yang mengakibatkan data bersifat heterokedastisitas

```
%Plot Efek ARCH-LM Kuadrat Residual WIKA
figure
plot(Date(2:end), sqrt(variances(:,1)));
datetick('x')
xlabel('Tanggal'), ylabel('Volatilitas')
title ('Volatilitas Kuadrat Residual WIKA')

%Plot Efek ARCH-LM Kuadrat Residual PTPP
figure
plot(Date(2:end), sqrt(variances(:,2)));
datetick('x')
xlabel('Tanggal'), ylabel('Volatilitas')
title ('Volatilitas Kuadrat Residual PTPP')
```



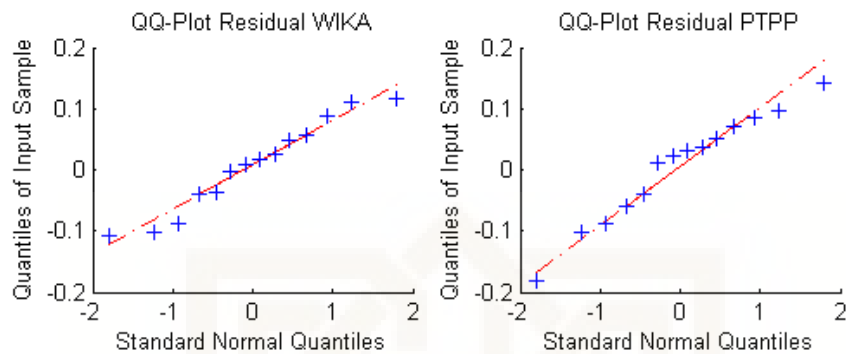
QQ-Plot Uji Normalitas Data Residual Saham WIKA.JK dan PTPP.JK

QQ-Plot Residual wika dan ptp

```
figure,subplot(2,2,1)
qqplot(residuals(:,1))
title('QQ-Plot Residual WIKA')
subplot(2,2,2)
```



```
qqplot(residuals(:,2))
title('QQ-Plot Residual PTPP')
```



Estimasi Parameter Copula *Gumbel*

Estimasi parameter copula *Gumbel* berdasarkan nilai *Kendall's Tau* yang telah diperoleh

```
disp('Parameter Copula Gumbel');
tau = 0.67033;
theta = copulaparam('gumbel',tau)
```

Parameter Copula Gumbel

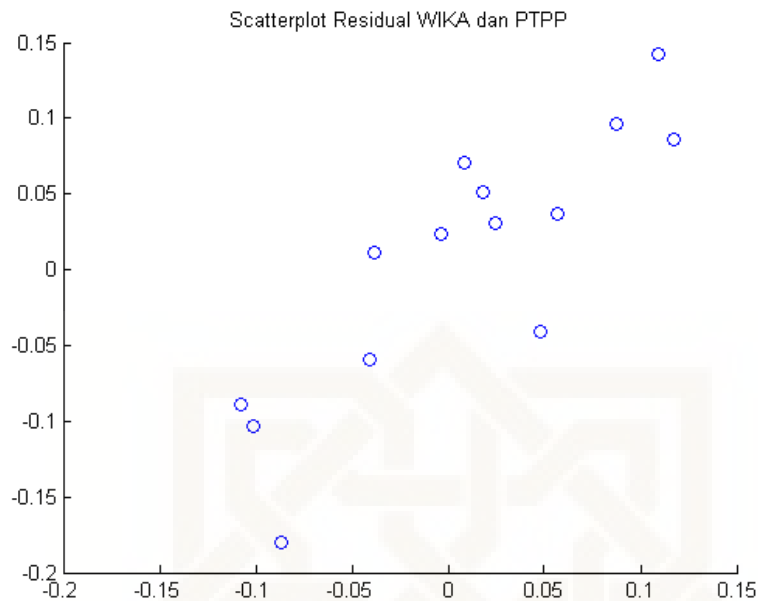
theta =

3.0333

Struktur Dependensi Residual Saham WIKA.JK dan PTPP.JK yang belum ditransformasi

Plot residual untuk mengetahui struktur dependensi awal (sebelum transformasi) antara saham WIKA.JK dan PTPP.JK berdasarkan *scatterplot*

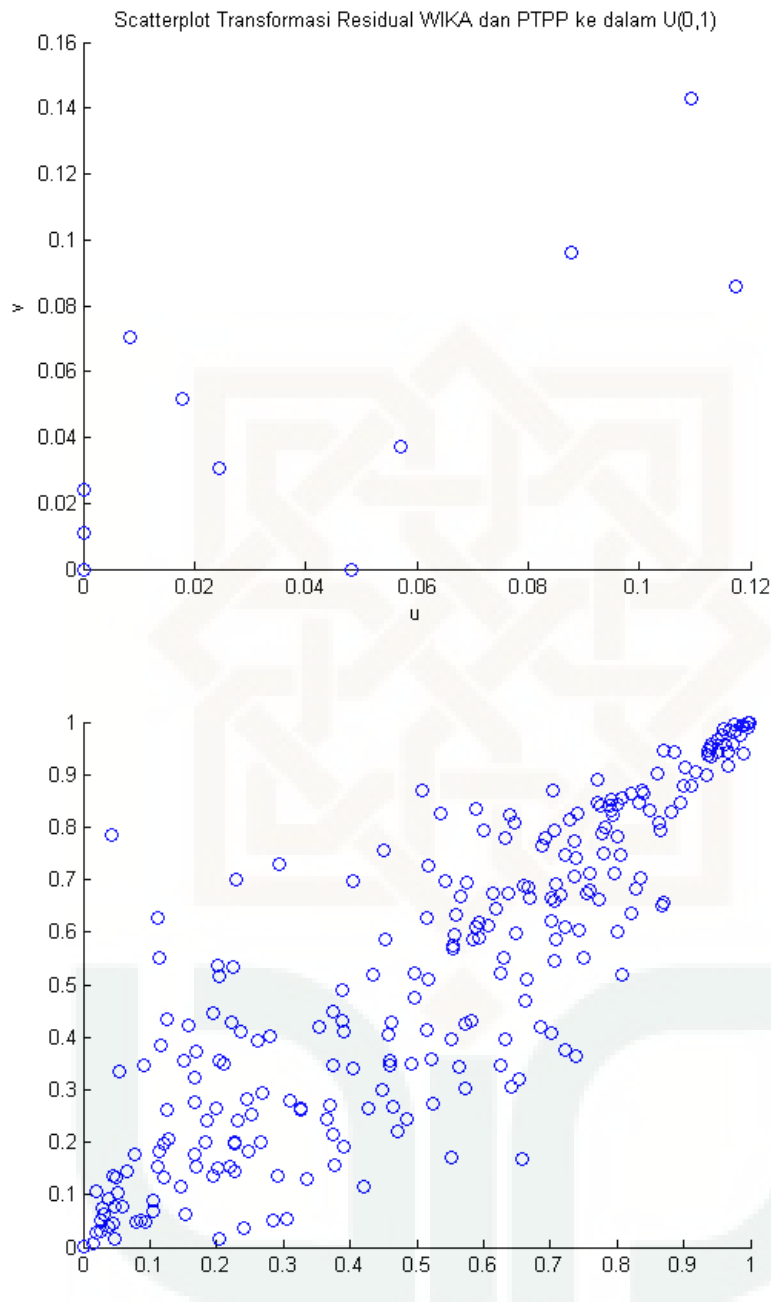
```
figure
X = residuals(:,1);
Y = residuals(:,2);
scatter(X,Y)
title('Scatterplot Residual WIKA dan PTPP')
```



Membentuk struktur dependensi copula *Gumbel* antara saham WIKA.JK dan PTPP.JK melalui residual yang telah ditransformasi

Mentransformasikan Masing-masing Residual ke dalam $U(0,1)$

```
cuv = zeros(size(residuals));
for i = 1:nIndices
    cuv(:,i) = cdf('unif', residuals(:,i)); % transformasi cdf
end
figure % Scatter plot Transformasi residual menjadi bentuk uniform(0,1)
u = cuv(:,1);
v = cuv(:,2);
scatter(cuv(:,1), cuv(:,2))
xlabel('u')
ylabel('v')
title('Scatterplot Transformasi Residual WIKA dan PTPP ke dalam U(0,1)')
% Struktur dependensi Copula Gumbel dengan bangkitan bilangan random
% sebanyak 250 buah untuk memperjelas struktur dependensi data asli
% berdasarkan copula Gumbel
cuv = copularnd('gumbel', theta, 250);
figure
u = cuv(:,1);
v = cuv(:,2);
scatter(cuv(:,1), cuv(:,2))
```



Perhitungan *Value at Risk* (VaR) dengan metode simulasi *Monte Carlo*- copula *Gumbel*

Perhitungan *Value at Risk* (VaR) dengan metode simulasi *Monte Carlo* - copula *Gumbel* melalui enam tahapan, yaitu membangkitkan bilangan random sebanyak M kali berdasarkan copula *Gumbel*, melakukan simulasi *return* bivariat, melakukan simulasi *return* berdasarkan data *return*, variansi, residual dan simulasi *return* bivariat, menghitung *return* portofolio baru kemudian menghitung *Value at Risk* (VaR)

```

disp('VaR dengan 200 perulangan');
%Simulasi Copula Gumbel
s = RandStream.getGlobalStream(); reset(s)
Mperulangan = 200; % banyak perulangan
tforecast = 1; % periode forecast
Rt = zeros(tforecast, Mperulangan, nIndices); % residual array
% simulasi bilangan random copula gumbel
cuv = copularnd('gumbel',theta, tforecast * Mperulangan);
% Melakukan simulasi return bivariat menggunakan
% invers dari fungsi distribusi marginal
for j = 1:nIndices
    Rt(:,:,j) = reshape(icdf('unif', cuv(:,j)), tforecast, Mperulangan);
end

Y0 = returns(end,:); % presample returns
Z0 = residuals(end,:); % presample residuals
V0 = variances(end,:); % presample variances

% Simulasi Return berdasarkan data return, variansi, residual dan simulasi
% return bivariat
simulatedReturns = zeros(tforecast, Mperulangan, nIndices);
for i = 1:nIndices
    simulatedReturns(:,:,i) = filter(fit{i}, Rt(:,:,i), ...
        'Y0', Y0(i), 'Z0', Z0(i), 'V0', V0(i));
end
simulatedReturns = permute(simulatedReturns, [1 3 2]);

%Return Portofolio
ReturnPortofolio = zeros(Mperulangan, 1);
weights = repmat(1/nIndices, nIndices, 1); % proporsi berimbang
for i = 1:Mperulangan
    ReturnPortofolio(i) = sum(simulatedReturns(:,:,i) * weights);
end

%Perhitungan VaR
VaR = 100 * quantile(ReturnPortofolio, [0.10 0.05 0.01]');
disp(' ')
fprintf(' Simulated 90% VaR: %8.4f%%\n' , VaR(1), '%')
fprintf(' Simulated 95% VaR: %8.4f%%\n' , VaR(2), '%')
fprintf(' Simulated 99% VaR: %8.4f%%\n\n' , VaR(3), '%')

```

VaR dengan 200 perulangan

```

Simulated 90% VaR: 7.8853%
Simulated 95% VaR: 7.6363%
Simulated 99% VaR: 7.4218%

```

```

disp('VaR dengan 500 perulangan');
%Simulasi Copula Gumbel

```

```

s = RandStream.getGlobalStream(); reset(s)
Mperulangan = 500; % banyak perulangan
tforecast = 1; % VaR forecast
Rt = zeros(tforecast, Mperulangan, nIndices); % standardized residuals
array
cuv = copularnd('gumbel',theta, tforecast * Mperulangan); % simulasi copula gumbel
for j = 1:nIndices
    Rt(:,:,j) = reshape(icdf('unif', cuv(:,j)), tforecast, Mperulangan);%invers
    dari fungsi distribusi marginal
end

Y0 = returns(end,:); % presample returns
Z0 = residuals(end,:); % presample standardized residuals
V0 = variances(end,:); % presample variances

%Simulasi Return
simulatedReturns = zeros(tforecast, Mperulangan, nIndices);
for i = 1:nIndices
    simulatedReturns(:,:,i) = filter(fit{i}, Rt(:,:,i), ...
        'Y0', Y0(i), 'Z0', Z0(i), 'V0', V0(i));
end
simulatedReturns = permute(simulatedReturns, [1 3 2]);

%Return Portofolio
ReturnPortofolio = zeros(Mperulangan, 1);
weights = repmat(1/nIndices, nIndices, 1); % proporsi berimbang
for i = 1:Mperulangan
    ReturnPortofolio(i) = sum(simulatedReturns(:,:,i) * weights);
end

%Perhitungan VaR
VaR = 100 * quantile(ReturnPortofolio, [0.10 0.05 0.01]');
disp(' ')
fprintf(' Simulated 90% VaR: %8.4f%%\n' , VaR(1), '%')
fprintf(' Simulated 95% VaR: %8.4f%%\n' , VaR(2), '%')
fprintf(' Simulated 99% VaR: %8.4f%%\n\n', VaR(3), '%')

```

VaR dengan 500 perulangan

```

Simulated 90% VaR: 8.1063%
Simulated 95% VaR: 7.7851%
Simulated 99% VaR: 7.3859%

```

```

disp('VaR dengan 700 perulangan');
%Simulasi Copula Gumbel
s = RandStream.getGlobalStream(); reset(s)
Mperulangan = 700; % banyak perulangan
tforecast = 1; % VaR forecast
Rt = zeros(tforecast, Mperulangan, nIndices); % standardized residuals
array

```

```

cuv = copularnd('gumbel',theta, tforecast * Mperulangan); % simulasi copula gumbel
for j = 1:nIndices
    Rt(:,:,j) = reshape(icdf('unif', cuv(:,j)), tforecast, Mperulangan);%invers
    dari fungsi distribusi marginal
end

Y0 = returns(end,:); % presample returns
Z0 = residuals(end,:); % presample standardized residuals
V0 = variances(end,:); % presample variances

%Simulasi Return
simulatedReturns = zeros(tforecast, Mperulangan, nIndices);
for i = 1:nIndices
    simulatedReturns(:,:,i) = filter(fit{i}, Rt(:,:,i), ...
        'Y0', Y0(i), 'Z0', Z0(i), 'V0', V0(i));
end
simulatedReturns = permute(simulatedReturns, [1 3 2]);

%Return Portofolio
ReturnPortofolio = zeros(Mperulangan, 1);
weights = repmat(1/nIndices, nIndices, 1); % proporsi berimbang
for i = 1:Mperulangan
    ReturnPortofolio(i) = sum(simulatedReturns(:,:,i) * weights);
end

%Perhitungan VaR
VaR = 100 * quantile(ReturnPortofolio, [0.10 0.05 0.01]');
disp(' ')
fprintf(' Simulated 90% VaR: %8.4f%%\n' , VaR(1), '%')
fprintf(' Simulated 95% VaR: %8.4f%%\n' , VaR(2), '%')
fprintf(' Simulated 99% VaR: %8.4f%%\n\n', VaR(3), '%')

```

VaR dengan 700 perulangan

```

Simulated 90% VaR: 8.1136%
Simulated 95% VaR: 7.6918%
Simulated 99% VaR: 7.3666%

```

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