

**ANALISIS PORTOFOLIO OPTIMAL SAHAM SYARIAH  
MENGUNAKAN METODE *LEXICOGRAPHIC GOAL PROGRAMMING*  
(LGP) DENGAN PENDEKATAN *VALUE AT RISK (VaR)-GENERALIZED*  
*PARETO DISTRIBUTION (GPD)***

*Studi Kasus : Harga Penutupan Saham Harian Jakarta Islamic Index (JII)  
Periode Desember 2014 – Februari 2017*

Skripsi

Untuk memenuhi sebagian persyaratan  
mencapai derajat Sarjana S-1

Program Studi Matematika



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Judul Skripsi : Analisis Portofolio Optimal Saham Syariah Menggunakan Metode *Lexicographic Goal Programming (LGP)* dengan Pendekatan *Value at Risk (VaR)-Generalized Pareto Distribution (GPD)*

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

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

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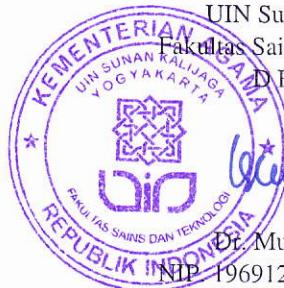
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Dengan ini menyatakan bahwa isi skripsi ini tidak terdapat karya yang pernah diajukan untuk memperoleh gelar sarjana di suatu Perguruan Tinggi dan sesungguhnya skripsi ini merupakan hasil pekerjaan penulis sendiri sepanjang pengetahuan penulis, bukan duplikasi atau saduran dari karya orang lain kecuali bagian tertentu yang penulis ambil sebagai bahan acuan. Apabila terbukti pernyataan ini tidak benar, sepenuhnya menjadi tanggung jawab penulis.

Yogyakarta, 05 Juni 2017

Yang Menyatakan



Ima Novianti

## HALAMAN PERSEMBAHAN

*Karya kecil ini kupersembahkan untuk*

*Orang Tuaku Tercinta*

*Bapak Sukiman & Ibunda Siti Kasmini*

*Serta Kakakku*

*Is Vikawati dan Dhani Syakir*

*Keluarga besar mahasiswa Matematika angkatan 2013 UIN Sunan*

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memberikan inspirasi, motivasi dan semangat dalam kehidupan*

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*Jurusan Matematika*

*Fakultas Sains dan Teknologi*

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## MOTTO

*“Engkau tak dapat meraih ilmu kecuali dengan enam hal yaitu  
cerdas, selalu ingin tahu, tabah, punya bekal dalam menuntut ilmu,  
bimbingan dari guru dan dalam waktu yang lama”*

*(Ali bin Abi Thalib)*

**MAN JADDA WAJADA**

*siapa bersungguh-sungguh pasti berhasil*

**MAN SHABARA ZHAFAR**

*siapa yang bersabar pasti beruntung*

**MAN SARA ALA DARBI WASHALA**

*siapa menapakai jalan-Nya akan sampai tujuan*

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memotivasi, membimbing serta mengarahkan sehingga skripsi ini dapat terselesaikan.

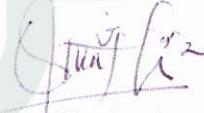
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Penulis



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## DAFTAR LAMBANG

$\sigma_p$ : risiko portofolio	skala ( <i>scale</i> )
$\sigma_i$ : standar deviasi	$\varepsilon$ : error
$\sigma_p^2$ : varians	$\xi$ : parameter bentuk ( <i>shape</i> )
$P/L_t$ : <i>profit/ loss</i> pada periode t	$\sigma$ : parameter skala ( <i>scale</i> )
$P_t$ : nilai aset pada periode t	$\alpha$ : tingkat keyakinan
$P_{t-1}$ : nilai aset pada periode t-1	$1 - \alpha$ : tingkat kuantil
$R_t$ : <i>return</i> total pada periode t	$u$ : nilai ambang/ <i>threshold</i>
$R_t(k)$ : <i>simple net return</i> k periode	$N_u$ : jumlah data diatas <i>threshold</i>
$R_{t(d)}$ : <i>return</i> total pada periode t dengan <i>dividen</i>	$Z$ : fungsi tujuan
$r_t$ : log <i>return</i> pada periode t	$d_i^+$ : jumlah unit deviasi yang kelebihan
$r_{t(k)}$ : log <i>return</i> k-periode	$d_i^-$ : jumlah unit deviasi yang kekurangan
$r_{t(d)}$ : log <i>return</i> pada periode t dengan <i>dividen</i>	$b_i$ : target tujuan
$n$ : jumlah data	$P_i$ : tingkat prioritas
$L$ : fungsi ln <i>likelihood</i>	$\omega_i$ : bobot
$\partial f$ : derivatif tingkat pertama fungsi $f$	$m$ : jumlah kendala tujuan
$\partial^2 f$ : derivatif tingkat kedua fungsi $f$	$j$ : indeks untuk saham
$H$ : matriks hessian	$X_j$ : proporsi dana saham ke- $j$
$q$ : vektor gradien	$\beta_j$ : ukuran risiko saham ke- $j$
$\hat{\theta}$ : parameter <i>newton rapshon</i>	$\bar{X}_i$ : variabel basis
$\hat{\theta}_0$ : nilai estimasi awal	$\bar{C}_i$ : koefisien dari $\bar{X}_i$
$\hat{\xi}_0$ : estimasi awal parameter bentuk ( <i>shape</i> )	
$\hat{\sigma}_0$ : estimasi awal parameter	

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PARETO DISTRIBUTION (GPD)***

*Studi Kasus : Harga Penutupan Saham Harian Jakarta Islamic Index (JII) Periode  
Desember 2014 – Februari 2017*

Oleh : Ima Novianti

**INTISARI**

Setiap investasi di pasar modal termasuk pada saham syariah, terdapat hal mendasar yang menyertainya yaitu jika risiko tinggi maka *return* juga akan tinggi, atau sebaliknya jika *return* rendah maka risikonya juga akan rendah. Salah satu cara untuk mengatasi risiko adalah dengan *diversifikasi* atau penyebaran investasi dengan membentuk portofolio optimal. Portofolio yang diusulkan dalam penelitian mempertimbangkan aspek risiko yang dikalkulasikan menggunakan *Value at Risk (VaR)-Generalized Pareto Distribution (GPD)* untuk menangkap fenomena *heavy tail*, kemudian dilanjutkan dengan metode *Lexicographic Goal Programming* untuk pendekatan optimalisasi portofolio.

*Sampel* yang digunakan adalah saham-saham yang selalu konsisten masuk dalam saham JII. Dipilih 20 (dua puluh) saham yang selalu konsisten masuk dalam saham *Jakarta Islamic Index (JII)* selama periode 1 Desember 2014 – 28 Februari 2017.

Penelitian ini berdasarkan Metode *Lexicographic Goal Programming* terpilih 4 (empat) saham yang berbeda sebagai pembentuk dua portofolio optimal. Portofolio optimal I diantaranya: ADRO dan UNTR dengan besar proporsi dana masing-masing saham yaitu: 66,3697% dan 33,6303% dengan *expected return* portofolio 0,0012039 dan risiko portofolio 0,0231016. Portofolio optimal II diantaranya: SMGR dan TLKM dengan besar proporsi dana masing-masing saham yaitu: 1,391% dan 98,609% dengan *expected return* portofolio 0,000796 dan risiko portofolio 0,024015.

**Kata kunci:** *Generalized Pareto Distribution (GPD), Lexicographic Goal Programming, Value at Risk (VaR), Saham Syariah*

# OPTIMAL PORTFOLIO ANALYSIS ON SYARI'AH SHARES USING LEXICOGRAPHIC GOAL PROGRAMMING METHOD WITH APPROACH OF VALUE AT RISK (VaR) -GENERALIZED PARETO DISTRIBUTION (GPD)

**Case Study: Daily closing share price Jakarta Islamic Index (JII)  
December 2014 - February 2017**

**By: Ima Novianti**

## ABSTRACT

Every investment in the capital market including *Syari'ah* Shares, there is a fundamental thing accompanying it. That is if the risk is high then the return will also be high, otherwise if the return is low then the risk will also be low. One way to overcome the risk is by diversifying or spreading investment by establishing an optimal portfolio. The portfolio proposed in the study considers the risk aspects calculated using Value at Risk (VAR)-Generalized Pareto Distribution (GPD) to capture the heavy tail phenomenon, followed by the Lexicographic Goal Programming method for optimal portfolio approach.

The sample used shares that are always consistent in JII shares. Selected 20 (twenty) shares are consistently included in the shares of Jakarta Islamic Index (JII) during December 1, 2014 - February 28, 2017.

This research is based on Lexicographic Goal Programming method there are 4 (four) shares chosen of two different as two optimal portfolio forming. Portfolio I : they are ADRO and UNTR. They have big proportion of fund of each share are: 66,3697% and 33,6303% and expected return portfolio 0,0012039 and portfolio risk 0,0231016. Portfolio I : they are SMGR and TLKM. They have big proportion of fund of each share are: 1,391% and 98,609% and expected return portfolio 0,000796 and portfolio risk 0,024015.

**Keywords:** Generalized Pareto Distribution (GPD), Lexicographic Goal Programming, Value at Risk (VaR), *Syari'ah* Shares

## BAB I

### PENDAHULUAN

#### 1.1. Latar Belakang

Investasi adalah penempatan sejumlah dana atau penanaman modal pada saat ini yang dilakukan investor, baik investor asing maupun domestik dalam berbagai bidang usaha yang terbuka untuk investasi, yang bertujuan untuk memperoleh keuntungan atau *profit* di masa yang akan datang. Profitabilitas merupakan tujuan utama dari semua usaha bisnis. Tanpa keuntungan bisnis tidak akan bertahan dalam jangka panjang. Memproyeksikan profitabilitas masa depan merupakan hal yang sangat penting, sebagaimana dijelaskan dalam Al-Qur'an Surat Yusuf 12 : 46 – 49. Allah SWT berfirman:

يُوسُفُ أَيُّهَا الصِّدِّيقُ أَفْتِنَا فِي سَبْعِ بَقَرَاتٍ سِمَانٍ يَأْكُلُهُنَّ سَبْعٌ عِجَافٌ وَسَبْعِ سُنبُلَاتٍ  
خُضْرٍ وَأُخَرَ يَبِيسٍ لَّعَلِّي أَرْجِعُ إِلَى النَّاسِ لَعَلَّهُمْ يَعْلَمُونَ (46) قَالَ تَزْرَعُونَ سَبْعَ  
سِنِينَ دَأْبًا ۖ فَمَا حَصَدْتُمْ فَذَرُوهُ فِي سُنْبُلِهِ إِلَّا قَلِيلًا مِّمَّا تَأْكُلُونَ (47) ثُمَّ يَأْتِي مِنْ بَعْدِ  
ذَلِكَ سَبْعُ شِدَادٍ يَأْكُلْنَ مَا قَدَّمْتُمْ لَهُنَّ إِلَّا قَلِيلًا مِّمَّا تَحْصِنُونَ (48) ثُمَّ يَأْتِي مِنْ بَعْدِ ذَلِكَ  
عَامٌ فِيهِ يُمْسِقُونَ ۗ وَالنَّاسُ فِيهِ يَعْصِرُونَ (49)

“(46) "Yusuf, wahai orang yang sangat dipercaya! Terangkanlah kepada kami (takwil mimpi) tentang tujuh ekor sapi betina yang gemuk yang dimakan oleh tujuh (ekor sapi betina) yang kurus, tujuh tangkai (gandum)

*yang hijau dan (tujuh tangkai) lainnya yang kering agar aku kembali kepada orang-orang itu, agar mereka mengetahui." (47) Dia (Yusuf) berkata, "Agar kamu bercocok tanam tujuh tahun (berturut-turut) sebagaimana biasa; kemudian apa yang kamu tuai hendaklah kamu biarkan di tangkainya kecuali sedikit untuk kamu makan. (48) Kemudian setelah itu akan datang tujuh (tahun) yang sangat sulit, yang menghabiskan apa yang kamu simpan untuk menghadapinya (tahun-tahun sulit), kecuali sedikit apa (bibit gandum) yang kamu simpan. (49) Setelah itu akan datang tahun, dimana manusia diberi hujan (dengan cukup) dan pada masa itu mereka memeras (anggur)." (QS Yusuf 12 : 46 -49)*

Ayat diatas menjelaskan tentang ajaran untuk tidak mengonsumsi semua kekayaan yang dimiliki pada saat mendapatkannya, tetapi hendaknya sebagian dari kekayaan yang didapat untuk dikelola dan mengembangkan kekayaan demi mempersiapkan masa depan.

Pada era modern investasi dalam bentuk kepemilikan aset finansial lebih menggiurkan, sehingga masyarakat di Indonesia lebih memilih aset finansial daripada aset real. Tempat ataupun kegiatan yang menjadi pemasaran aset finansial adalah pasar modal. Bentuk investasi sektor finansial yang baru-baru ini *trend* adalah investasi saham di pasar modal. Di Indonesia, PT. Bursa Efek Jakarta (BEJ) telah menerbitkan daftar reksadana, saham, dan obligasi syariah dalam *Jakarta Islamic Index (JII)*. *Jakarta Islamic Index (JII)* merupakan indeks saham yang berisi

30 (tiga puluh) perusahaan yang memenuhi kriteria investasi berdasarkan investasi syariah.

Saham merupakan surat bukti kepemilikan atas aset-aset perusahaan yang menerbitkan saham (Eduardus, 2010). Saham adalah salah satu jenis sekuritas yang diperdagangkan di pasar modal. Jika investor membeli saham, berarti mereka membeli prospek perusahaan dari saham tersebut, kalau prospek perusahaan membaik, harga saham akan meningkat. Dengan gambaran seperti itu, orang akan semakin tertarik untuk melakukan investasi, sehingga investasi di sektor finansial menjadi primadona dikalangan investor. Investasi pada sektor ini menawarkan tingkat keuntungan dibandingkan dengan investasi di sektor aset real. Namun perlu diketahui semakin tinggi tingkat keuntungan yang ditawarkan maka semakin tinggi pula tingkat risiko yang dihadapi. Salah satu cara untuk mengatasi risiko adalah dengan *diversifikasi* atau penyebaran investasi dengan membentuk portofolio optimal.

Portofolio saham merupakan gabungan atau kombinasi dari beberapa saham. Permasalahan dalam pembentukan portofolio saham adalah dengan begitu banyaknya jenis saham yang ada bagaimana memilih dan mengklasifikasikan sejumlah kekayaan yang dimiliki agar mendapatkan hasil yang optimal. Teori dasar tentang pemilihan portofolio pertama kali dicetuskan oleh Markowitz (1952), dimana Markowitz memandang pemilihan portofolio sebagai model optimasi yang dikenal dengan model *mean-variance* dengan melibatkan dua fungsi objektif yaitu memaksimalkan *expected return* dan meminimumkan risiko. Oleh karena itu,

pemilihan emiten sebagai salah satu portofolio saham sangat penting dan tentu sangat berpengaruh bagi pendapatan investor.

Analisis pemilihan kombinasi saham atau portofolio saham dapat dilakukan melalui beberapa pendekatan, pendekatan konvensional yang terdiri dari pendekatan fundamental yaitu pendekatan investasi menggunakan informasi ekonomi, seperti laporan keuangan historis atau informasi tentang perusahaan dan pendekatan teknikal yaitu pendekatan menggunakan pola-pola data historis suatu saham misalnya harga tertinggi, terendah dan volume perdagangan atau kombinasi pendekatan analisis teknikal dan fundamental merupakan pendekatan yang saling melengkapi untuk mendapatkan keuntungan yang optimal.

Penelitian ini dilakukan untuk mengatasi permasalahan tingginya risiko dan pemilihan kombinasi saham dengan menggunakan sistem analisis saham terintegrasi yang mempertimbangkan keseluruhan analisis teknikal untuk mendapatkan optimasi portofolio yang *profitable*. Portofolio yang diusulkan dalam penelitian mempertimbangkan aspek risiko yang dikalkulasikan menggunakan *Value at Risk (VaR)-Generalized Pareto Distribution (GPD)* untuk menangkap fenomena *heavy tail* di pasar negara berkembang, kemudian dilanjutkan dengan metode *Lexicographic Goal Programming* untuk pendekatan optimalisasi portofolio.

Menurut Poncowati (2011) *Lexicographic Goal Programming* atau sering disebut *preemptive goal programming* merupakan salah satu model dari *goal programming* dimana tujuan-tujuan yang ingin dicapai memiliki tingkat prioritas



atau kepentingan yang berbeda. *Lexicographic Goal Programming* memberikan solusi optimal dari beberapa tujuan dengan meminimumkan jumlah penyimpangan atau deviasi dari tujuan-tujuan yang memiliki tingkat prioritas berbeda terhadap masing-masing nilai tujuan (*goal*) yang dikehendaki. Metode *Lexicographic Goal Programming* menggunakan ekspektasi nilai *risk* dan *return* untuk mendapatkan iuran berupa sejumlah dan yang diinvestasikan setiap saham untuk menghasilkan portofolio yang optimal.

Pada penelitian ini akan menerapkan metode *Lexicographic Goal Programming* dalam menyelesaikan optimalisasi portofolio pada saham *Jakarta Islamic Index* (JII) yang diambil dari [www.finance.yahoo.com](http://www.finance.yahoo.com).

## **1.2. Batasan Masalah**

Berdasarkan pada latar belakang masalah dan kajian-kajian pendukung lain maka penulis dapat memberikan rumusan dan batasan masalah sehubungan dengan kompleksnya masalah yang akan muncul dalam pembahasan. Penulis menggunakan *Value at Risk* (VaR) dengan pendekatan *Generalized Pareto Distribution* (GPD) untuk menentukan risiko saham pada periode tertentu. Adapun data yang digunakan adalah data harian harga penutupan saham *Jakarta Islamic Index* (JII) periode 1 Desember 2014 sampai 28 Februari 2017.

### 1.3. Rumusan Masalah

Berdasarkan latar belakang dan batasan diatas, maka dirumuskan permasalahan sebagai berikut:

1. Bagaimana proses pembentukan portofolio optimal menggunakan metode *Lexicographic Goal Programming* dengan pendekatan *Value at Risk (VaR)-Generalized Pareto Distribution (GPD)*?
2. Seberapa besar proporsi dana dari masing-masing saham syariah pembentuk portofolio optimal menggunakan metode *Lexicographic Goal Programming* dengan pendekatan *Value at Risk (VaR)-Generalized Pareto Distribution (GPD)*?
3. Berapa besarnya *mean return* dan risiko portofolio yang diberikan dalam analisis portofolio optimal yang terbentuk menggunakan metode *Lexicographic Goal Programming* dengan pendekatan *Value at Risk (VaR)-Generalized Pareto Distribution (GPD)*?

### 1.4. Tujuan Penelitian

Tujuan penelitian ini adalah :

1. Mengetahui bagaimana proses pembentukan portofolio menggunakan metode *lexicographic goal programming* dengan pendekatan *Value at Risk (VaR)-Generalized Pareto Distribution (GPD)*
2. Mengetahui besarnya proporsi dana dari masing-masing saham syariah pembentuk portofolio optimal menggunakan metode *Lexicographic Goal Programming* dengan pendekatan *Value at Risk (VaR)-Generalized Pareto Distribution (GPD)*

3. Mengetahui besarnya *mean return* dan risiko portofolio yang diberikan dalam analisis portofolio optimal yang terbentuk menggunakan metode *Lexicographic Goal Programming* dengan pendekatan *Value at Risk (VaR)-Generalized Pareto Distribution (GPD)*

### 1.5. Manfaat Penelitian

Penelitian ini diharapkan dapat memberi manfaat, yaitu:

1. Bagi Peneliti

Menambah pengetahuan peneliti baik secara teoritis maupun aplikatif mengenai portofolio saham menggunakan metode *Lexicographic Goal Programming* dengan pendekatan *Value at Risk (VaR)-Generalized Pareto Distribution (GPD)*.

2. Bagi Investor

Hasil dari penelitian ini diharapkan dapat dijadikan masukan dalam pembentukan portofolio optimal untuk mengambil suatu keputusan dalam melakukan investasi pada saham-saham yang termasuk dalam *Jakarta Islamic Index (JII)*.

### 1.6. Tinjauan Pustaka

Penelitian ini menggunakan metode studi literatur yaitu studi yang dilakukan dengan mempelajari beberapa buku, jurnal, karya ilmiah, dan hasil penelitian sebelumnya yang berkaitan dengan pembentukan portofolio optimal menggunakan metode *lexicographic goal programming* dengan pendekatan *value at risk-generalized pareto distribution*, diantaranya adalah:

1. Penelitian yang ditulis oleh Januarsih Poncowati mahasiswi Institut Teknologi Sepuluh Nopember (2011) yang berjudul "*Pemilihan Saham untuk Portofolio Optimal dengan Lexicographic Goal Programming*". Masalah yang dibahas dalam penelitian tersebut adalah pemilihan saham untuk portofolio optimal menggunakan pendekatan *lexicographic goal programming* penerapannya dalam harga penutupan saham Bursa Efek Indonesia (BEI) periode Januari 2009 sampai September 2010.
2. Penelitian yang ditulis oleh Maida Fauziah mahasiswi UIN Sunan Kalijaga (2014) yang berjudul "*Analisis Risiko pada Portofolio Saham Syari'ah Menggunakan Value at Risk (VaR) dengan Pendekatan Generalized Pareto Distribution (GPD)*". Masalah yang dibahas didalam penelitian tersebut adalah analisis risiko portofolio menggunakan *value at risk* dengan pendekatan *generalized pareto distribution* penerapannya dalam saham-saham yang konsisten masuk dalam *Jakarta Islamic Index (JII)* periode 3 Januari 2012 – 31 Desember 2013.
3. Penelitian yang berjudul "*Analisis Portofolio Optimum terhadap 50 Emiten dengan Frekuensi Perdagangan Tertinggi di Bursa Efek Indonesia Menggunakan Metode Value at Risk, Lexicographic Goal Programming dan Artificial Neural Network*" (Aliffia Permata S. dan Brodjol Sutijo S.U., 2015). Penelitian ini menjelaskan tentang menganalisis portofolio optimal dengan menggunakan metode *Value at Risk*, *Lexicographic Goal Programming* dan *Artificial Neural Network* pada 50 Emiten dengan Frekuensi Perdagangan Tertinggi di Bursa Efek Indonesia.

Pada penelitian yang sekarang memiliki persamaan dan perbedaan baik itu dari metode yang digunakan maupun objek yang diteliti. Penelitian dari Januarsih Poncowati, objek yang diteliti sebelumnya menggunakan saham di Bursa Efek Indonesia dan metode yang digunakan menggunakan metode *Lexicographic Goal Programming*. Pada penelitian sebelumnya mengestimasi risiko menggunakan koefisien risiko beta sedangkan pada penelitian sekarang menggunakan *Value at Risk (VaR)-Generalized Pareto Distribution (GPD)*. Penelitian dari Maida Fauziah, objek yang digunakan sama menggunakan saham JII dan metode yang digunakan menggunakan metode *Value at Risk (VaR)-Generalized Pareto Distribution (GPD)*. Pada penelitian sebelumnya hanya menganalisis risiko menggunakan VaR-GPD tanpa dilanjutkan dalam pembentukan portofolio optimal.

Penelitian dari Aliffia Permata S. dan Brodjol Sutijo S.U., metode yang digunakan adalah *Value at Risk*, *Lexicographic Goal Programming*, dan *Artificial Neural Network* dengan objek yang digunakan berbeda. Pada penelitian sebelumnya adanya peramalan masing-masing saham terpilih menggunakan *Artificial Neural Network* menggunakan objek saham di Bursa Efek Indonesia, sedangkan penelitian sekarang tanpa adanya peramalan serta objek yang diteliti adalah saham JII. Penelitian yang sekarang menggabungkan dua metode penelitian yang digunakan oleh Januarsih Poncowati dan Maida Fauziah yaitu metode *Lexicographic Goal Programming* untuk menentukan portofolio optimal dan metode *Value at Risk (VaR)-Generalized Pareto Distribution (GPD)* sebagai pendekatan untuk mengestimasi nilai risiko setiap saham.

**Tabel 1.1 Tinjauan Pustaka**

No	Nama Peneliti	Metode	Pendekatan	Objek
1	Januarsih Poncowati (2011)	<i>Lexicographic Goal Programming</i>	-	Saham di Bursa Efek Indonesia
2	Maida Fauziah (2014)	-	<i>Value at Risk (VaR)- Generalized Pareto Distribution (GPD)</i>	Saham JII
3	Aliffia Permata S. dan Brodjol Sutijo S.U. (2015)	<i>Value at Risk (VaR), Lexicographic Goal Programming, dan Artificial Neural Network</i>	<i>Value at Risk (VaR)- Generalized Pareto Distribution (GPD)</i>	Saham di Bursa Efek Indonesia
4	Ima Novianti (2017)	<i>Lexicographic Goal Programming</i>	<i>Value at Risk (VaR)- Generalized Pareto Distribution (GPD)</i>	Saham JII

### 1.7. Sistematika Penulisan

Sistematika penelitian ini disusun untuk memberikan gambaran secara menyeluruh dan mempermudah dalam memahami penelitian skripsi ini. Secara garis besar sistematika skripsi ini terdiri dari enam bab sebagai berikut:

## BAB I PENDAHULUAN

Pada Bab I ini membahas tentang pendahuluan dari tema yang diangkat dalam tugas akhir yang meliputi latar belakang, batasan masalah, rumusan masalah, tujuan penelitian, manfaat penelitian, tinjauan pustaka, dan sistematika penelitian.

## BAB II LANDASAN TEORI

Dalam Bab II ini membahas tentang suatu tinjauan yang merupakan uraian teori dari semua hal yang dibutuhkan untuk diterapkan dalam pengolahan analisis data.

## BAB III METODE PENELITIAN

Dalam Bab III ini akan dipaparkan mengenai proses pelaksanaan penelitian, mulai jenis penelitian, objek, variabel, jenis dan sumber data, teknik pengumpulan data, metode analisis data, dan sampai pada alat pengolahan data.

## BAB IV PEMBAHASAN

Pada Bab IV membahas mengenai metode *Lexicographic Goal Programming* dengan pendekatan *Value at Risk (VaR)- Generalized Pareto Distribution (GPD)*.

## BAB V STUDI KASUS

Pada Bab V ini akan dibahas mengenai aplikasi metode *Value at Risk* (VaR)-*Generalized Pareto Distribution* (GPD) dalam mengestimasi risiko dalam pembentukan portofolio optimal model *Lexicographic Goal Programming* studi kasus saham di *Jakarta Islamic Index* (JII) dengan menggunakan *software Microsoft Excel, Eviews 5.0, MATLAB* dan *LINGO 14.0*.

## BAB VI PENUTUP

Pada Bab VI ini berisi tentang kesimpulan dari pembahasan pada bab sebelumnya, dan saran-saran yang perlu disampaikan untuk investor serta penelitian selanjutnya.



## BAB VI

### KESIMPULAN DAN SARAN

#### 6.1. Kesimpulan

Berdasarkan perumusan masalah dan hasil penelitian, maka dapat diambil beberapa kesimpulan sebagai berikut:

1. Proses pembentukan portofolio optimal saham syariah menggunakan metode *Lexicographic Goal Programming* dengan pendekatan *Value at Risk (VaR)-Generalized Pareto Distribution (GPD)* adalah sebagai berikut:
  - a. Menghitung *return* masing-masing saham
  - b. Uji normalitas *return* masing-masing saham
  - c. Pengujian efek *Generalized Pareto Distribution (GPD)* melalui QQ-plot
  - d. Menentukan nilai ambang/ *threshold*
  - e. Mengestimasi parameter *Generalized Pareto Distribution (GPD)* dengan *software* MATLAB untuk mendapatkan parameter bentuk (*shape*) dan parameter skala (*scale*)
  - f. Menghitung nilai *Value at Risk (VaR)-Generalized Pareto Distribution (GPD)*
  - g. Merumuskan fungsi tujuan dan kendala tujuan model *Lexicographic Goal Programming*
  - h. Menentukan saham pembentuk portofolio optimal dengan *software* LINGO 14.0.

2. Berdasarkan pembentukan dua portofolio optimal saham syariah menggunakan metode *Lexicographic Goal Programming* dari 20 (dua puluh) saham konsisten pada JII didapatkan 2 (dua) saham yang membentuk setiap portofolio optimal dengan proporsi dana dari masing-masing saham adalah sebagai berikut:

Portofolio	Saham	Komposisi
Portofolio I (3 fungsi batasan)	ADRO dan UNTR	66, 37% dan 33, 63%
Portofolio II (2 fungsi batasan)	SMGR dan TLKM	1,39% dan 98,61%

3. Dengan menentukan nilai  $R = 0.0012$  dan  $\theta = 0.066$ , diperoleh nilai *return* portofolio I sebesar 0,0012039 (0,12039%) dan risiko portofolio sebesar 0,0231016 (2,31016%). *Return* portofolio saham lebih besar tingkat *expected return* yang diharapkan investor yaitu 0,0012 (0,12%), hal ini menunjukkan bahwa tujuan memaksimalkan *return* tercapai dan saham-saham yang terpilih memberikan profit maksimum yang diinginkan oleh investor. Nilai risiko portofolio sebesar 0,0231016 (2,31016%) yang lebih kecil dari tingkat risiko yang diharapkan sebesar 0,066 (6,6%) menunjukkan bahwa saham-saham yang terpilih memberikan kerugian minimum yang diinginkan oleh investor. Dengan menentukan nilai  $\theta = 0.0248$ , diperoleh nilai *return* portofolio II sebesar 0,000796 (0,0796%) dan risiko portofolio sebesar 0,024015 (2,4015%). Nilai risiko portofolio sebesar 0,024015 (2,4015%) yang lebih kecil dari tingkat risiko yang diharapkan sebesar 0,0248 (2,48%) menunjukkan bahwa saham-saham yang terpilih memberikan kerugian minimum yang diinginkan oleh investor. Tujuan mengoptimalkan jumlah dana telah tercapai karena total proporsi dana yang diinvestasikan satu. Dikarenakan semua fungsi

tujuan telah terpenuhi, jadi dapat disimpulkan bahwa metode *Lexicographic Goal Programming* dapat membantu dalam pembentukan portofolio optimal saham pada *Jakarta Islamic Index (JII)*.

## 6.2. Saran

Setelah dilakukan penelitian yang cukup panjang, maka saran yang diberikan dalam penelitian, yaitu:

1. Bagi peneliti selanjutnya
  - a. Metode *Lexicographic Goal Programming* tidak hanya untuk saham saja. Oleh karena itu, peneliti selanjutnya dapat menggunakan *Lexicographic Goal Programming* untuk mengetahui optimalisasi produksi perusahaan.
  - b. Peneliti selanjutnya dapat menambahkan beberapa fungsi batasan pada model *Lexicographic Goal Programming*.
  - c. Lakukanlah simulasi dengan beberapa *return* dan risiko sebagai target tujuan yang ingin dicapai pada model *Lexicographic Goal Programming*.
  - d. Peneliti selanjutnya dapat melanjutkan penelitian ini dengan melakukan peramalan harga saham untuk memprediksi keuntungan agregat yang didapatkan.
2. Bagi investor

Bagi calon investor yang akan melakukan investasi pada saham *Jakarta Islamic Index (JII)* juga disarankan untuk lebih teliti dalam memilih saham dengan tingkat keuntungan dan risiko terbaik seperti yang diharapkan.

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*Lampiran 1***Data Return Saham Harian Periode 1 Desember 2014 – 28 Februari 2017**

AALI	ADRO	AKRA	ASII	BSDE
0.016997	0.01878	-0.00109	-0.01754	0.008242
0.019499	0.00922	-0.03587	-0.01429	-0.00817
-0.01639	0.03653	0.019166	0.01087	0.005495
-0.01111	-0.01322	0.001106	0.017921	0.008197
-0.0309	-0.02232	0.00221	0	-0.00271
0	-0.00457	-0.01323	0	0
0.026087	-0.02294	0.021229	0.007042	-0.00815
0	-0.00469	0.00547	-0.00699	-0.00822
0.002825	-0.03302	0.016322	0.010563	-0.01381
0.014085	0	0	-0.02091	-0.05042
-0.03333	0.01463	-0.0257	0.010676	-0.02065
-0.00862	0.00962	-0.02637	-0.01056	0.063253
0.028986	0.01429	-0.02257	0.024911	0.042493
0.014085	-0.00469	-0.01039	0	-0.00543
0.013889	0	-0.02567	-0.01042	-0.01913
-0.00274	-0.00472	0.007186	0.021053	0
0.005495	0.00474	-0.02973	0.006873	-0.00279
0	-0.01887	0	0.003413	0
0	0.01923	0.009804	0.010204	0.00838
-0.01093	-0.01887	0.092233	-0.00337	0.033241
0	0	0.011111	-0.02365	0.032172
0	-0.01442	0	-0.02422	-0.01299
0.008287	-0.01463	-0.0022	0.014184	0.015789
-0.01096	0	0.007709	-0.01049	0.023316
-0.00831	-0.02475	0.006557	-0.00707	-0.00759
-0.00279	0.0203	-0.00543	-0.00356	-0.01276
0.014006	-0.00995	0.001092	0.025	0.018088
-0.01381	-0.03015	-0.012	-0.01742	-0.00508
-0.0028	-0.02073	0.011038	0.031915	0.005102
0.002809	-0.01058	0.002183	0.003436	0.005076
0.002801	0	-0.01743	0.017123	0.012626
0.005587	0.0107	0	0.003367	0.007481
0.005556	0.03704	0.014412	0.030201	0.019802
0.016575	0.02551	-0.00984	0.009772	0.041262
0.021739	0.00995	-0.01545	0.041935	-0.03963
-0.01596	-0.01478	-0.00112	-0.00619	0.002427

0.002703	-0.02	0.034792	-0.02492	0.016949
0.002695	0.02041	0.002169	0	-0.05238
-0.00806	-0.005	0.017316	-0.00958	0.002513
0.01084	-0.01005	-0.00106	0.012903	0.012531
-0.01609	0.01523	-0.00958	-0.01274	-0.00743
-0.00545	-0.005	-0.01398	-0.01613	0.042394
0.005479	-0.00503	0.001091	0.013115	-0.02153
-0.00545	0.0101	-0.00545	-0.02265	-0.00733
0.005479	-0.005	0.008762	0.006623	0.019704
0	0	0.015201	-0.00329	0.012077
0.002725	-0.01508	0.005348	0.006601	0.002387
0.008152	0.01531	0.012766	0.032787	-0.00714
-0.0027	-0.01508	0.019958	0.006349	0.004796
0.010811	0.0051	0.008239	0.003155	0.00716
-0.03743	0.01523	-0.02145	-0.01887	-0.02607
0.005556	-0.01	0.005219	0	-0.01703
-0.00276	0.0101	0.009346	0.019231	0.05198
-0.00831	-0.005	0.002058	-0.01258	-0.00235
0.002793	0	-0.01232	0.006369	-0.01179
0.011142	-0.01508	0.006237	0.012658	-0.00716
0.002755	-0.01531	0.001033	0.01875	0.019231
-0.00275	-0.00518	0	-0.01227	0.037736
-0.00551	-0.01563	0.00516	-0.02484	0.009091
0.01385	0.01587	0.021561	0.003185	-0.00901
-0.00273	0.0625	0.003015	0.015873	-0.00455
0.005479	-0.0049	0.012024	-0.01563	-0.01826
-0.01635	-0.02956	0.00495	-0.00317	-0.00465
0.022161	0.0203	-0.0197	0.028662	-0.02336
-0.01626	-0.0199	0.005025	-0.01548	-0.01914
-0.00826	0.00508	0.035	0.003145	0.004878
-0.00833	-0.00505	-0.00483	-0.01567	-0.02913
0.002801	-0.03046	-0.01456	0.006369	0.015
0.005587	0.01571	0.009852	-0.00316	-0.00246
-0.00556	0	-0.01951	0.012698	-0.00494
0.002793	-0.02577	-0.00498	0.003135	0.027295
-0.00557	0.01058	0.005	-0.00313	-0.00966
0.022409	0	-0.01393	0.009404	-0.00732
-0.00822	0.01571	-0.03128	0.006211	-0.00737
0.008287	-0.02062	0.046875	0.009259	0
0.008219	0.02105	0.00995	-0.00306	0.017327
-0.01902	0.00515	-0.01478	0.006135	-0.0073

0.01662	-0.01026	-0.001	-0.0061	-0.01716
0.002725	-0.02073	0	0.006135	0
0.002717	0.00529	0.001001	0.021341	0.047382
0.01084	0.01053	0.025	0.023881	0.016667
0	-0.01042	0.043902	-0.04665	0.007026
0	0.01053	0.03271	-0.01223	0.009302
-0.00268	0.02083	0	0.01548	0
0	0	0.013575	-0.0061	0.011521
-0.00806	0	-0.00446	-0.02147	-0.01822
-0.01355	-0.01531	-0.02242	0.021944	0
0.016484	0.01554	-0.04128	0	-0.00232
-0.0027	-0.0051	-0.01914	0.003067	-0.03721
0.00271	-0.02051	-0.02439	0.003058	-0.00483
0	0	0.005	-0.00305	0.043689
0.010811	0.00524	0.00995	-0.01529	-0.00465
-0.00535	0.00521	0.049261	-0.00932	-0.00234
0.008065	-0.00518	0.00939	-0.03448	-0.01639
0.008	-0.01042	0.023256	0.029221	0.007143
0.005291	0.02632	0	-0.00315	0.01182
-0.00526	-0.00513	-0.01818	0	-0.00701
0.007937	0.01031	-0.0463	-0.00316	-0.00706
-0.02887	-0.0102	-0.00971	-0.05397	-0.03555
0.013514	-0.05155	0.019608	-0.01007	-0.03686
-0.048	0.01087	0	-0.03729	-0.05102
0.005602	-0.03763	0	-0.03521	0.002688
0.016713	-0.02235	-0.03846	0.036496	0.013405
0	-0.03429	0.005	0.024648	0.02381
-0.00274	0.02959	0.049751	0.010309	-0.0155
0	0.00575	-0.01422	-0.02041	-0.02625
0.013736	-0.02286	0.019231	0.097222	-0.02695
0.00271	0.00585	0.004717	-0.06329	0.01662
-0.02973	0.05233	-0.04225	-0.01014	0.002725
-0.00836	0.01105	0.02451	0.006826	0.057065
0.008427	0.01639	-0.00478	0.020339	-0.01285
0.005571	-0.02688	0.033654	-0.00332	0.015625
-0.02493	-0.02762	0.009302	0.006667	0.012821
0.022727	0.01705	0.032258	0.019868	0.002532
0.016667	-0.00559	0.022321	0.019481	-0.02525
0	-0.01124	-0.02183	-0.00318	0.023316
-0.04918	0.00568	-0.00893	-0.03195	-0.01266
0.008621	-0.0113	-0.02703	0	-0.02564



0.048433	0.02857	0.013889	-0.0099	0.002632
-0.02717	-0.00556	0.004566	-0.01	-0.0105
-0.01676	0.00559	-0.00455	-0.00673	0
0.002841	-0.04444	0.013699	-0.01017	-0.00265
-0.01416	0.02326	-0.01802	0.003425	0.021277
-0.02299	0.05114	0.018349	-0.03754	-0.05729
-0.03235	-0.03784	0.027027	-0.00355	-0.03867
0.021277	0.00562	-0.04386	-0.00356	0.017241
0.002976	-0.03352	-0.05505	-0.01071	-0.00565
0.002967	-0.03468	0.058252	-0.01083	-0.02557
-0.05325	-0.00599	0.036697	0	-0.05831
0.0125	0.01205	-0.00442	0.014599	0.03096
0.030864	-0.0119	-0.02222	0.017986	0.06006
0.01497	-0.07831	0.018182	-0.0318	0.01983
-0.0236	0.01961	-0.00893	0.018248	0.011111
-0.00604	0.03205	0.013514	0.003584	-0.02198
-0.00304	-0.03727	0	0.003571	-0.01124
0.033537	0.04516	-0.00444	0.003559	0.025568
-0.02655	-0.02469	-0.00446	-0.00709	-0.00277
0.021212	-0.00633	0.058296	-0.025	-0.025
0.014837	0.00637	0.033898	0.018315	-0.04558
-0.02047	-0.01266	-0.0082	-0.01439	-0.00299
-0.01493	0.00641	-0.0124	-0.00365	-0.00599
0	-0.03185	-0.00837	0.007326	0.033133
0.021212	0	-0.01688	0.029091	0.034985
-0.02077	-0.00658	-0.02146	-0.00707	-0.03662
0	0.00662	-0.00877	0.007117	-0.00585
0.00303	0	-0.02655	-0.00353	0.011765
-0.01208	-0.02632	0.009091	-0.00709	0
0.003058	-0.05405	-0.02252	-0.01429	0.037791
0.015244	-0.06429	-0.01382	-0.03623	0.044818
0.018018	-0.03817	-0.00935	0	-0.03485
0	0.00794	-0.01415	0.003759	0.038889
0.00295	-0.02362	0.038278	0.018727	-0.00267
0.002941	-0.05645	0.023041	0.007353	0.002681
-0.02053	0.01709	0.036036	-0.00365	-0.02406
-0.00599	-0.03361	0.013043	0.018315	-0.03562
-0.00301	0.03478	0.008584	-0.01079	-0.0483
0.02719	-0.05882	0.004255	-0.03273	0.023881
0.008824	-0.00893	0.021186	-0.03383	0.011662
0.017493	0.08108	-0.02075	-0.01167	0.0317

-0.02006	-0.01667	-0.01695	0.011811	0.030726
-0.01754	-0.00847	-0.00862	0.023346	-0.01355
-0.00298	0.00855	-0.01304	0.011407	0.010989
-0.00896	-0.0339	0.004405	0.007519	-0.02174
0	0.03509	0.039474	-0.01119	-0.00556
-0.00602	0.01695	-0.00422	0.026415	-0.02514
-0.06061	-0.00833	0	-0.00735	-0.03725
-0.06129	-0.02521	-0.02542	-0.02222	-0.05357
0.061856	-0.02586	0.047826	-0.01515	0.050314
0.009709	-0.06195	-0.04979	-0.05	0.011976
0.032051	-0.08491	-0.0131	-0.01619	-0.02367
-0.01863	0.0268	0.022124	0.053498	0.018182
-0.02848	0.00402	-0.02597	0.003906	-0.02976
-0.01629	-0.026	-0.01333	-0.03891	-0.05521
0	-0.00205	0.004505	0	-0.09416
0.036424	-0.00412	-0.00448	0.004049	0.032258
-0.01597	0.0124	-0.00901	-0.02419	-0.02083
0.074675	-0.03265	0.018182	-0.06198	0.117021
0.021148	0.14979	-0.03125	-0.01322	0.006349
-0.00888	-0.00917	-0.00461	0.004464	0.012618
0.002985	0.09259	0.060185	0.035556	-0.01869
-0.0119	0.05085	0.048035	-0.00858	0
0.012048	-0.04032	0.0125	0.025974	0.006349
-0.00298	-0.03361	-0.04527	-0.03797	-0.03155
-0.04776	0.06087	-0.00862	0.048246	-0.06189
-0.03448	0.01639	-0.0087	0.029289	0.038194
-0.00649	-0.06452	-0.0307	0.00813	-0.02007
0.01634	-0.0431	-0.00452	-0.05645	0.010239
-0.00322	0.02703	0.031818	0.004274	0.013514
-0.00323	0.01754	0.022026	0.038298	0
-0.00647	-0.06897	-0.00431	-0.0082	-0.04
-0.01629	0.0463	-0.02597	0.012397	-0.01389
0.043046	0.00885	0.022222	0	0.021127
-0.02857	0.01754	-0.03043	-0.01633	0.055172
0	-0.01724	0	-0.02075	-0.01307
-0.00654	0.02632	0.035874	0.004237	-0.01987
-0.05263	0.02564	-0.00433	-0.0211	-0.04054
-0.04861	0	-0.00435	0	-0.03521
-0.04015	-0.00833	0.030568	0	-0.04015
0.060837	-0.02521	-0.01695	-0.05172	0.076046
-0.01434	0.00862	0.034483	0.009091	-0.00707

0.003636	-0.05983	-0.02083	-0.06757	0
-0.02536	-0.02727	0.012766	0.183575	0.017794
0.070632	0	-0.01681	-0.13469	0.034965
0.09375	-0.00935	-0.01282	-0.01415	0.033784
0.015873	-0.01887	0	0.009569	0.029412
-0.0625	0.02885	0.012987	-0.02844	0.034921
0.03	0.04673	0.021368	0.039024	0.064417
-0.01618	0.09821	-0.04603	0.112676	0.014409
-0.03947	0.00813	0.004386	0.033755	-0.0767
0.006849	0.09677	0.021834	0.032653	0.015385
-0.01701	0.02941	0.012821	0.059289	-0.01818
0.00346	-0.09286	-0.00844	0	0.040123
0.003448	0.00787	0	-0.08582	-0.01484
-0.01375	0	0.029787	0.044898	0.003012
-0.01394	0.00781	-0.00413	-0.01563	0.021021
0.031802	0.03876	0	0.031746	0.026471
0.003425	-0.02985	0.008299	-0.02308	0.011461
-0.00683	-0.02308	-0.01235	-0.00394	-0.03399
0.006873	0.05512	-0.02083	-0.01976	-0.0176
-0.02048	0.01493	-0.02128	0.016129	-0.03582
-0.00348	-0.02206	-0.01739	0	0.003096
-0.02797	-0.02256	0.013274	-0.00794	0.003086
0.014388	-0.05385	-0.01747	-0.028	0.046154
0.028369	-0.03252	0.048889	-0.04527	0.017647
-0.01724	0.02521	-0.00847	0.017241	-0.01156
-0.01404	0.04918	0	0.059322	-0.00292
0.024911	0.02344	0.025641	0.028	-0.03519
-0.04861	-0.03817	-0.0125	0.019455	-0.00304
-0.0219	-0.01587	0.016878	-0.00763	0
0.007463	-0.00806	-0.01245	0.015385	0.018293
0.003704	-0.00813	0.008403	-0.02652	-0.01198
-0.00369	0.04918	-0.00417	0.011673	-0.00606
0	-0.04688	-0.02092	0.042308	0.003049
0	-0.04918	0.042735	-0.02583	-0.00608
-0.0037	-0.03448	-0.0123	0	0.009174
0.011152	-0.00893	0.020747	-0.02652	0.015152
-0.02941	0.03604	-0.04065	-0.01556	-0.00299
0	0.04348	0.025424	0.003953	-0.00898
0.022727	-0.025	0	-0.01575	0.033233
0.025926	-0.02564	-0.0124	0.008	0.01462
-0.01805	-0.00877	-0.00837	-0.00794	-0.01153

-0.01838	0.0354	0.008439	0	-0.01749
0.041199	0	-0.00418	-0.012	0.032641
-0.02158	-0.03419	0.012605	0.008097	0.014368
-0.00735	-0.02655	0.012448	0	0.002833
-0.02963	-0.00909	0.020492	-0.04819	-0.01977
-0.0229	-0.00917	0.016064	0.075949	0.005764
-0.02734	-0.00926	-0.01976	-0.01176	-0.05158
0	-0.01869	0.024194	0	0
-0.04819	-0.02857	0.062992	0.015873	-0.00302
0.033755	-0.03922	0.059259	0.019531	0
0.016327	0	0	-0.04981	-0.02727
-0.00803	-0.03061	-0.06294	0	0.006231
0.004049	0.02105	0.018657	0.004032	0.040248
0.048387	-0.01649	0.014652	-0.05221	0.029762
-0.00769	-0.02935	-0.02888	0.038136	-0.04624
-0.01163	0.06263	0.040892	0.02449	0.027273
0	0.03659	0.017857	0	0.026549
-0.02353	-0.03922	-0.00702	0.01992	0
0.008032	0.0102	0.017668	-0.01953	0.034483
0.031873	0.0101	-0.01736	-0.00398	0
0.019305	0	-0.01767	-0.028	0
-0.0303	0.02	-0.01439	-0.01235	-0.00556
-0.00391	0.01961	0.007299	0	0.01676
0.078431	-0.06731	0.039855	0.004167	0.010989
-0.03636	0.06186	0.003484	-0.00415	-0.01359
0.064151	-0.04078	-0.01042	-0.01667	0.011019
-0.01773	0.01012	0.007018	0.038136	-0.03815
0.032491	0.002	0.059233	-0.00816	0.014164
0.034965	-0.03	0.003289	-0.01646	0.01676
-0.01014	0.01649	-0.05246	0.012552	-0.00549
-0.01706	-0.0142	0	-0.01653	0
-0.05556	-0.01029	-0.00346	-0.0042	-0.01934
0.003676	-0.01663	-0.02778	-0.00422	0.002817
-0.01832	-0.01903	-0.02857	-0.00424	-0.03933
-0.00746	-0.03233	0.033088	0.021277	-0.03509
0.018797	0.00223	0.021352	-0.01667	0.00303
0	0.02444	0.003484	0.004237	-0.00302
0.01107	-0.05206	-0.02083	-0.02532	0.021212
0	0.02975	-0.00355	0.012987	0.008902
-0.0073	0.14444	0.017794	0.008547	0.014706
-0.01838	-0.03301	-0.00699	0.038136	0.002899

0.007491	-0.04418	-0.08803	0	-0.04046
-0.02602	0.0021	0.015444	0.004082	-0.00301
-0.01527	0.09015	-0.03422	0.01626	0.012085
0.031008	0.00962	0.055118	0.032	0.01194
0.018797	-0.01905	-0.00746	-0.0155	0.044248
-0.01845	0.07767	0	-0.03543	-0.01977
-0.00376	0.03604	0.022556	0.012245	0
-0.00377	0.07826	0.003676	0.020161	0.017291
-0.00758	0.03226	0.007326	0.051383	-0.00567
0	-0.07813	0.010909	0.018797	0.002849
-0.00763	-0.02542	-0.03957	0.00369	0.011364
-0.01923	0.05217	0.011236	0.047794	0.011236
0.011765	-0.00826	0	-0.04211	-0.01667
-0.01938	-0.025	0.014815	-0.00733	-0.0226
0.003953	0.05128	0.007299	0.01845	0
0.031496	0.00813	0	0.014493	-0.04046
0	-0.02419	0	0.007143	0.021084
-0.03053	-0.03306	-0.01449	-0.02128	-0.00885
0.003937	0.01709	-0.05147	-0.02174	0.002976
0.019608	0	0.031008	-0.03333	0
0.003846	0	-0.00376	-0.01916	0.023739
0.011494	-0.04202	-0.02264	0.003906	0.002899
0	0.05263	0.011583	0.058366	0.00578
0	0.00833	0.019084	0	0.002874
0.003788	0.10744	-0.00749	0.029412	-0.01146
0.011321	-0.01493	-0.00755	0.014286	-0.0058
-0.01866	-0.01515	0.030418	-0.03169	-0.00583
-0.0076	0.04615	-0.02214	0.003636	0.041056
-0.02299	0.09559	0.011321	-0.00725	0.022535
0.027451	0.0604	-0.03731	-0.01825	0.033058
-0.01527	-0.02532	0.01938	0.02974	0.013333
0.007752	-0.09091	-0.01901	0.025271	0.005263
0	0.04286	0.007752	0.014085	-0.02356
0	0.02055	0.023077	0.017361	0
-0.00385	-0.08725	-0.00752	0.017065	-0.01072
-0.01158	0.03676	-0.01515	0	-0.01084
0.007813	-0.01418	-0.01154	0	0
0.093023	-0.00719	-0.00778	-0.00671	0.008219
0.024823	-0.04348	0.003922	-0.00338	-0.00272
0.00346	0.01515	-0.01172	-0.01695	-0.0109
-0.01379	-0.02985	0.007905	-0.02414	0

-0.01748	0.02308	0.031373	0.003534	0.00551
0.007117	-0.03008	0	0.021127	0.005479
0.021201	0.03101	0.038023	0.010345	0
-0.00346	0.02256	0.010989	0.010239	0.008174
-0.01042	-0.01471	-0.03623	-0.01689	-0.0027
0	0.03731	-0.0188	-0.00687	0
-0.01754	-0.00719	0.042146	0.010381	0.067751
0.007143	0.02174	0.025735	-0.0137	-0.03046
-0.01418	-0.01418	-0.01792	0.006944	0.013089
0	0	0.007299	0	0.002584
-0.03597	0.03597	-0.02174	0.044828	0
0.003731	0.04167	0.051852	-0.0066	0
0.003717	-0.00667	-0.03169	-0.02326	-0.01546
0.018519	0.00671	-0.01091	0	-0.03141
-0.02545	-0.04	-0.04412	-0.02041	-0.04865
0.003731	-0.03472	0.038462	-0.05208	0.002841
-0.00372	0.04317	-0.0037	-0.01465	0.016997
-0.02612	0.01379	0.040892	0	-0.03621
0.007663	-0.0068	-0.00714	-0.00372	-0.00578
-0.0038	-0.02055	-0.0036	-0.01493	0.023256
0.003817	0	-0.05776	0.007576	-0.02557
0.003802	0.00699	0	-0.03759	0.002915
-0.01515	-0.03472	0	0.148438	-0.00291
0	-0.04317	0.049808	-0.11224	0.002915
0.030769	0.03008	0.007299	0.019157	0.031977
0.044776	0.0146	0.01087	-0.0188	0.011268
0	-0.03597	-0.00717	-0.03065	0.002786
0	0.02239	-0.03249	-0.01976	0.002778
0.003571	0.0146	-0.01119	0.020161	-0.01939
-0.00712	-0.00719	-0.02642	-0.01186	0.025424
0.003584	-0.02174	0.031008	0	0
0	-0.00741	-0.03008	0.016	0
0.010714	0	0.007752	0.003937	0.002755
0.010601	-0.01493	0.026923	0	0.005495
0.017483	0.0303	-0.03745	0.031373	0.010929
0	0.02941	0.003891	-0.0038	-0.00541
-0.01375	-0.00714	0.007752	0.022901	0.008152
0.017422	0	-0.00385	0.007463	0.008086
0.003425	0.02158	0.003861	-0.02222	0.002674
-0.01024	0.01408	-0.02308	0.011364	0.002667
-0.01379	0.04861	0.007874	-0.02622	-0.01596

-0.00699	0.07947	0.011719	0.015385	0.002703
-0.01408	0.03067	-0.02703	0.037879	-0.01348
0	0.08333	0	0	0.002732
0.017857	-0.04396	-0.03175	0.007299	0.016349
-0.01053	0.06322	-0.02049	-0.00362	-0.00536
0.010638	-0.03784	-0.03347	-0.03636	0.059299
0	-0.03371	-0.01299	-0.00755	0.002545
-0.02456	-0.01744	-0.03509	0.019011	0.060914
0.010791	0.02367	0.013636	0.003731	-0.00478
-0.00356	-0.02312	0.026906	-0.0223	-0.02885
-0.01071	-0.05325	0.017467	0.003802	0.009901
0	0.05625	0.025751	0.022727	0.029412
0.01444	0	0.004184	0	-0.00952
0.05694	0	0	0.033333	0.009615
0.030303	0.00592	-0.02917	-0.00358	0.004762
-0.0098	-0.01176	0.017167	-0.03597	-0.00948
0.059406	-0.00595	-0.01266	-0.01119	0.023923
-0.01246	0.02395	0.008547	0.05283	-0.01402
0.003155	0	0.008475	0.032258	-0.00474
-0.01258	-0.00585	0.05042	0.027778	-0.02381
0	0.04118	0	0	-0.02439
0.015924	0.0452	-0.008	-0.02027	0.025
-0.00313	0.04865	-0.0121	0	-0.02439
0.012579	0.0567	-0.01224	0.003448	0.03
-0.02795	0.01463	-0.00826	-0.02405	-0.00971
0.019169	-0.04327	0.008333	0	-0.0049
0.043887	0.03518	0.057851	0.021127	0.024631
0.006006	-0.00485	0.015625	0.010345	0.004808
0.020896	0.00976	0.038462	0.017065	-0.00478
0	0.01932	0.011111	-0.01007	-0.00962
-0.02047	-0.00474	0.003663	-0.00339	0.014563
0.014925	0.01905	-0.00365	0.020408	-0.00478
-0.00882	-0.00935	-0.01832	-0.00667	-0.00962
0.002967	-0.01415	-0.00746	-0.01007	-0.01942
0.002959	0.01435	0.003759	0.00678	0.019802
0.011799	-0.01887	-0.00375	0.040404	0.019417
0.002915	0	0.037594	0.035599	0.057143
-0.00581	0.0625	0.003623	-0.00313	0.040541
-0.0117	0.03167	-0.00361	-0.00313	-0.01732
0.008876	-0.02632	-0.02899	-0.02516	0.026432
0.002933	0.03153	-0.00746	0.022581	-0.00858

-0.01462	0.00437	-0.01128	0.050473	-0.04329
0.008902	0.04348	-0.01521	-0.02402	0.0181
0.008824	-0.0375	0.027027	0	-0.00889
-0.00875	-0.06061	-0.01504	0	-0.00448
0.011765	0.04608	0	-0.01846	-0.0045
0.055233	-0.01322	-0.00382	-0.01567	-0.00905
-0.03306	0.02232	-0.01533	0.003185	0.022831
0.025641	0.02183	-0.04669	0.053968	-0.00893
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-0.0028	0.00905	0.03252	0.024691	-0.04484
0	-0.03139	0.03937	-0.0241	-0.01408
0.008427	-0.01852	0.026515	0.012346	0.02381
0	0.03774	-0.05166	0.02439	-0.04186
-0.0195	-0.01818	-0.01167	-0.00595	0.029126
-0.02273	-0.01389		-0.03293	0.014151
0.034884	0.06573		0	0.013953
0.005618	0.01322		0.009288	0.004587
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-0.02564	-0.01266		0.009346	-0.02347
-0.00877	0.04274		0.021605	-0.00481
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0.020833	0.01633		0	0.067669
-0.01166	0.02008		0	-0.02817
0.00295	0		-0.00904	0.024155
0.014706	-0.08268		-0.03343	0
-0.01449	-0.03863		-0.0283	0.014151
0.011765	0.04018		0.055016	0.013953
0.011628	0		-0.02147	0.013761
-0.01437	0.01717		0.031348	-0.02262
0.008746	-0.00422		0.009119	0.023148
0.037572	-0.00847		0.03012	0.004525
-0.02786	0.01282		0.026316	-0.0045
-0.01719	0.0211		-0.01994	-0.00452
0.005831	-0.00826		-0.02035	0.022727
0.008696	0.00833		0.032641	-0.01778
-0.01724	-0.00826		-0.11207	-0.01357
0	0.06667		0.12945	0.009174
0	-0.05859		-0.00573	-0.01364
0.002924	0.07884		-0.04899	-0.01382
0.002915	0.00385		0.027273	0.018692
-0.00581	-0.01149		0.014749	0



0.008772	0.05426		-0.02035	-0.01835
0	0.01103		-0.0089	0.018692
0.005797	0.00727		-0.01796	-0.00459
0	0.01083		0.009146	0.02765
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0	0		-0.003	0
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0.005814	0.02456		0.015244	0.004566
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0.017442	0.0625		0.030395	-0.00909
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-0.00287	0		-0.00896	-0.01843
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0.002907	-0.00322		0.003058	-0.01905
0	0.01935		0.006098	0
-0.02029	0.00316		-0.00909	0.004854
0.011834	0.0347		0.006116	0.024155
0	0.04878		0.012158	-0.02358
-0.02339	-0.04651		0	0.014493
-0.08084	0.01829		-0.02402	-0.09048
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0	-0.03681		0.018237	0.03966
0.00339	0.05096		-0.01493	-0.00817
-0.01014	0.00606		0.006061	0.002747
-0.00341	-0.03313		-0.07229	-0.01918
0	-0.08723		-0.00974	0.019553
0.027397	0.04778		0	-0.00548
-0.03667	-0.01303		0.02623	-0.0303
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-0.00709	0.02		0	-0.02609
0.042857	0.05882		0.006369	0.026786
0.027397	0.00617		-0.01899	-0.01449
0.06	0.0092		0.003226	0.044118
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-0.00974	0.02439		0.013289	0.022099
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0	-0.06135		-0.01597	-0.01609
0.009554	0.05229		-0.01948	0

-0.00631	0.03416		0.019868	-0.0109
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0	-0.03509		-0.00955	0.005714
-0.04575	0.01818		0.003215	-0.01989
0.003425	0.0119		0.003205	0.011594
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0.006993	-0.00599		-0.00322	-0.03614
0.017361	0.02108		-0.02258	0.015625
0.047782	0.00295		0.006601	0.049231
0.013029	-0.01765		-0.00984	0.01173
-0.02572	0.00599		0.019868	0.017391
0	-0.01488		-0.02273	0
-0.0033	0.01208		-0.02658	-0.01425
0.019868	0.00896		0.040956	0.046243
0.016234	0		0.02623	0
0	0		0.038339	0.019337
-0.01597	0.00296		0.018462	-0.0271
0.006494	0		0	-0.03064
-0.00323	0.02655		-0.00906	-0.01149
-0.00971	-0.02299		-0.02439	0.008721
-0.0098	-0.02059		0.015625	-0.00288
-0.0066	0.01802		0.006154	0
-0.00997	0.01475		-0.00306	0.020231
0.02349	-0.02035		0.006135	0.01983
-0.01639	0.03561		-0.02134	0.038889
0	-0.01719		-0.01246	-0.01337
-0.02	-0.00875		0.009464	-0.02168
0.017007	0		-0.00313	0.022161
0	0		0.009404	0.00813
0.010033	0.01176		0.009317	0.008065
-0.01987	0.00581		0.003077	-0.008
-0.01014	0		-0.0184	-0.01075
-0.01024	-0.00289		0.003125	-0.00543
0.024138	0		0.003115	0.002732
-0.00673	0.0087		0.006211	0.013624
-0.00339	-0.00575		-0.00309	0.018817
0.006803	-0.00289		0.003096	-0.00264
-0.00676	-0.0058		-0.02469	-0.00529

0.003401	-0.01166		0.006329	0.013298
0.00339	0.03245		0.012579	-0.00262
0.003378	-0.00571		0.006211	0.002632
0.006734	-0.01149		0	0
-0.01338	0.01163		0.003086	-0.0105
0	-0.00575		0	0
0.00678	-0.00578		-0.00923	0.007958
-0.0101	0.00291		0.003106	-0.00526
-0.0068	-0.0087		-0.0031	0
0	-0.01754		0.006211	0.005291
0.023973	-0.02083		-0.00309	0.002632
0	0		0	0.002625
0	0.03343		0.003096	-0.00524
0.026756	-0.02353		-0.02469	-0.02368
-0.00326	0.02108		0.006329	-0.01348
	0.01475		-0.00314	
	-0.00872		0.006309	
	0.00587		0.009404	
	-0.00875		0.009317	
	0		-0.01231	
	-0.00294		0.021807	
<b>ICBP</b>	<b>INCO</b>	<b>INDF</b>	<b>INTP</b>	<b>KLBF</b>
0	0.02228	0.007547	0.009833	0.016997
0	0.00641	-0.01124	-0.0185	0.019499
0.017544	0.034395	0.003788	-0.00298	-0.01639
0.012931	0.018473	0.007547	0.002985	-0.01111
-0.01277	-0.03748	-0.00749	-0.00397	-0.0309
0.021552	0.003769	0.003774	-0.00398	0
-0.00422	-0.02879	-0.00752	0.008	0.026087
-0.02542	0	-0.01136	0	0
0.017391	-0.00644	0.003831	-0.00496	0.002825
0.008547	0.022049	0.003817	-0.02692	0.014085
-0.02542	-0.02792	-0.0076	-0.04611	-0.03333
0.023913	0.007833	-0.01916	-0.00215	-0.00862
0.019108	-0.02332	0.007813	0.019376	0.028986
0.027083	-0.02122	0.015504	0.032735	0.014085
-0.00406	-0.00813	0	0.01227	0.013889
0	0.004098	0.01145	0	-0.00274
0.010183	-0.02177	-0.00377	0.00202	0.005495
0.008065	-0.01113	0.003788	-0.00403	0
0.048	0.019691	0.018868	0.012146	0

0.003817	-0.00966	0.103704	-0.008	-0.01093
0	-0.01393	0.003356	-0.00101	0
-0.02281	-0.00565	-0.01338	-0.0222	0
0.011673	0.005682	-0.01356	0.016512	0.008287
0	-0.00141	-0.00344	-0.00102	-0.01096
-0.00385	0.018388	0.02069	-0.01728	-0.00831
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0.018	-0.01534	0	0.018595	0.014006
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0.007874	-0.01481	0.003367	0.019487	-0.0028
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0.027505	0.024206	0.003425	-0.0213	0.002801
0.024857	0.031019	0.006826	0.024055	0.005587
0.08209	-0.01862	0.00678	-0.01007	0.005556
0.012069	0.023358	0.026936	0.030508	0.016575
0.008518	0.014265	0	0.008772	0.021739
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0.047872	0.019886	0	0.002179	0.002703
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0	-0.01826	-0.00338	-0.00543	-0.00806
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0	-0.01029	-0.01974	0.010917	-0.00545
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0.023091	0.041176	0.027397	0.009688	0.005479
0.008681	0.011299	-0.00333	0.022388	0
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0.010657	0.004172	0	-0.01681	-0.0027
0	0.00277	0.006803	0	0.010811
0.010545	-0.02901	-0.01014	0.001068	-0.03743
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0.007042	0.001439	0.003378	-0.0042	-0.00276
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0.001783	0.002985	0.010204	0.007307	0.002755
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0.010435	0.010249	0.003356	0.016736	0.022161
-0.02065	-0.00725	-0.01338	-0.01235	-0.01626
0.019332	-0.01314	0.013559	-0.00833	-0.00826
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0.020979	-0.01349	-0.0034	-0.02174	0.002801
0.001712	0.00152	0	-0.01333	0.005587
0.025641	0.021244	0.003413	-0.00113	-0.00556
-0.00667	-0.00594	-0.0034	0.013529	0.002793
0	-0.00897	0.010239	-0.0089	-0.00557
-0.00336	0.015083	0	0.002245	0.022409
0.016835	0.008915	0.003378	-0.03024	-0.00822
-0.01987	-0.00147	-0.00337	-0.00924	0.008287
-0.00676	-0.01475	0.010135	0.009324	0.008219
-0.02381	-0.01946	-0.00669	-0.03002	-0.01902
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0.007092	0	0.006734	0.002336	0.002717
0.033451	-0.01672	-0.00334	0.022145	0.01084
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0	0.014218	0	0.020316	-0.00268
0.001745	0.007788	0.00339	0.015487	0
0.010453	-0.00309	-0.00676	0	-0.00806
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0.015873	0.010135	0.006757	0	0.010811
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0.007042	0	-0.00336	0.033076	0.008
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-0.0049	-0.01393	0.007273	0.020725	0.007813
-0.00821	-0.01412	0.046931	0.013959	0.093023
-0.00497	0.014327	-0.00345	-0.01252	0.024823
0.006656	-0.0113	0	0.001267	0.00346
0.004959	-0.00857	0	0.018987	-0.01379
0.008224	0.04611	-0.00692	0.002484	-0.01748
0.008157	-0.01377	-0.00348	-0.00372	0.007117
-0.01294	0.036313	0.01049	-0.00995	0.021201
-0.00328	-0.0027	0	0.015075	-0.00346
-0.00493	-0.00811	-0.01384	-0.00495	-0.01042
0	-0.01907	0	0	0
-0.00826	0	0.010526	0.002488	-0.01754
0	0.055556	0.006944	-0.00744	0.007143
0	0.047368	0.003448	-0.0025	-0.01418
0.001667	-0.02261	-0.00687	0	0
0.001664	-0.02314	-0.02768	-0.00877	-0.03597
0.004983	-0.00526	-0.02491	0.006321	0.003731
-0.01157	0.007937	0.014599	0	0.003717
-0.00167	-0.0105	0.02518	-0.00879	0.018519
0.0067	-0.01326	-0.01404	-0.03422	-0.02545
0.016639	-0.02957	0.024911	-0.0105	0.003731
0.001637	0.00277	0	0.029178	-0.00372
0	-0.04144	-0.03472	-0.02964	-0.02612
0.003268	-0.05187	0.028777	-0.01195	0.007663
0.003257	-0.04255	0.003497	-0.00134	-0.0038
0	0.025397	-0.01742	-0.05249	0.003817
0.006494	0.021672	0.010638	-0.05824	0.003802
0.003226	-0.02727	-0.01404	0.001508	-0.01515
0.003215	-0.01558	0	-0.00301	0

-0.00801	-0.05063	0	-0.02266	0.030769
0.027464	0.02	-0.00712	-0.04019	0.044776
0.031447	-0.01961	-0.01434	0.048309	0
-0.02896	0.003333	0	-0.01536	0
0.00314	0.006645	-0.00364	-0.00468	0.003571
0	-0.0099	0.025547	0.03605	-0.00712
-0.00626	0.066667	-0.00712	-0.00303	0.003584
0.001575	0.065625	0.014337	0.004552	0
0	-0.0088	-0.0106	0.006042	0.010714
0.025157	-0.00888	-0.01071	0	0.010601
-0.02301	-0.01194	0.00722	0.006006	0.017483
0.017268	0	0.021505	-0.01493	0
-0.00463	0.012085	0.007018	-0.00455	-0.01375
-0.0155	-0.00896	0.020906	0.004566	0.017422
0.012598	0.033133	0.003413	0.006061	0.003425
0.013997	0.040816	-0.0034	0	-0.01024
0.027607	-0.01401	-0.01706	-0.01205	-0.01379
-0.00299	0.048295	0.013889	-0.00152	-0.00699
-0.01796	-0.01626	-0.02055	-0.02137	-0.01408
-0.00457	-0.03306	0	0.0078	0
-0.01072	-0.0114	0.003497	-0.0031	0.017857
0.034056	0.008646	-0.01742	-0.02484	-0.01053
-0.00749	0.002857	0	0.025478	0.010638
0.007541	0.002849	0	0.001553	0
0.017964	0.042614	-0.00709	0.00155	-0.02456
0.010294	-0.0109	0.014286	-0.00619	0.010791
-0.00728	-0.02204	-0.01408	0.003115	-0.00356
0.024927	-0.00563	0.007143	-0.01553	-0.01071
-0.0186	-0.01983	-0.00709	0.025237	0
-0.00583	0.011561	0.025	-0.01385	0.01444
0.01173	-0.02286	0.006969	0.029641	0.05694
0.002899	0.055556	0.00346	0.022727	0.030303
-0.01734	0.00831	-0.03103	-0.02667	-0.0098
0.013235	-0.00275	0.024911	0.041096	0.059406
-0.01597	0.07438	0	-0.03509	-0.01246
0.028024	0.133333	0	0.039394	0.003155
-0.00143	0.090498	-0.01389	-0.01458	-0.01258
-0.00287	-0.04149	0.003521	-0.00888	0
-0.02017	0.004329	0.017544	-0.00896	0.015924
0	0.012931	0.041379	0	-0.00313
-0.00441	0.051064	-0.00993	0.012048	0.012579

0.011817	0.008097	-0.00669	-0.0253	-0.02795
0.018978	0.004016	-0.0101	0.007634	0.019169
-0.01433	0.032	0.006803	0.006061	0.043887
0.010174	-0.0155	0.033784	-0.00602	0.006006
0.010072	-0.05906	0.045752	0.028788	0.020896
0.019943	0.016736	0.05625	0.013255	0
0.005587	0.045267	-0.01479	-0.00727	-0.02047
-0.01667	0.007874	0.009009	0.048316	0.014925
-0.02825	0.019531	-0.00893	0.00419	-0.00882
0.037791	0.007663	0.006006	0.011127	0.002967
-0.01401	-0.03802	-0.01493	0.006878	0.002959
0	-0.01186	0.018182	-0.00273	0.011799
0.005682	0.048	0.011905	0.00137	0.002915
0.008475	0.019084	-0.02647	0.04104	-0.00581
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0	-0.00389	0.006211	-0.02267	0.002933
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0.008671	0.092664	-0.02424	-0.02429	-0.00875
0.054441	0.021201	-0.01553	0.012448	0.011765
-0.01902	-0.01038	-0.00315	0.001366	0.055233
0.024931	-0.04196	0	-0.02046	-0.03306
0.010811	0.025547	0.006329	0.012535	0.025641
-0.00535	-0.03915	-0.00314	0.028886	-0.00833
0.034946	0	0	-0.01872	-0.0028
0.015584	0.003704	-0.00315	-0.00954	0
-0.02813	-0.01107	0.003165	-0.02613	0.008427
0.021053	-0.01493	0.009464	-0.03672	0
0.028351	0.011364	0	0.01173	-0.0195
0.002506	-0.00375	0.015625	0.014493	-0.02273
-0.03	0.056391	0.030769	0.011429	0.034884
-0.02577	0.024911	0.01791	-0.01977	0.005618
0.002646	0.013889	-0.01173	0.002882	-0.01955
0.023747	-0.00685	-0.02671	-0.02011	-0.02564
0.010309	-0.02759	-0.00305	-0.00147	-0.00877
-0.03827	-0.02128	-0.02141	0.013216	-0.00885
0	-0.05072	0.059375	0.021739	0.020833
-0.04244	0.015267	0	-0.02128	-0.01166
0.047091	-0.01504	-0.00885	0.002899	0.00295

0.002646	0.015267	-0.00595	0.011561	0.014706
0.023747	0.011278	0.02994	-0.00857	-0.01449
-0.01031	-0.00372	0.008721	0.012968	0.011765
0	0.059701	0.023055	0.032717	0.011628
-0.01302	0	-0.01408	-0.00275	-0.01437
0.002639	-0.04577	0.042857	-0.00552	0.008746
-0.01579	0.095941	-0.0137	0.016667	0.037572
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0.034946	-0.00673	-0.04918	-0.04408	-0.01719
0.01039	0	0.051724	0.025937	0.005831
-0.02571	0.061017	-0.02459	0	0.008696
0.029024	-0.05431	-0.0028	-0.00281	-0.01724
0	-0.07095	0	-0.00282	0
-0.00256	-0.01818	0	0.014124	0
0	-0.01111	-0.01966	-0.00836	0.002924
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0.018182	0.014706	-0.02521	-0.01433	0.008772
0	0	0.014368	0.002907	0
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0.034301	0.00365	0.002899	-0.00442	0
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-0.00781	-0.01384	0.005848	-0.01637	0
-0.00787	0.007018	0.014535	-0.00605	-0.00578
0.002646	-0.05923	0	0.013699	0.005814
0.010554	-0.01111	-0.02292	0.003003	-0.00578
-0.00783	0.003745	0	0	0.017442
0.010526	-0.01493	0.01173	-0.02096	-0.00286
-0.00781	0.015152	-0.01159	0.007645	-0.0086
0.005249	-0.01866	-0.00293	-0.00152	0.00578
-0.00522	0.034221	0	-0.00152	-0.00287
-0.01312	-0.01471	-0.00588	-0.00457	-0.00865
-0.02128	-0.00373	-0.02959	-0.02141	0.002907
-0.00543	-0.02996	-0.00305	0.00625	0
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0.019231	0.052632	-0.0209	-0.00775	0
0.032345	0.006667	0.012195	-0.00313	-0.02339
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-0.00265	0.060606	-0.00977	-0.02138	-0.02606
-0.06897	-0.05714	0	-0.02521	-0.01338

-0.02564	-0.06364	0.013158	0.034483	0
0.011696	0.05178	0.016234	-0.01333	0.00339
0.020231	-0.01538	-0.00639	0.006757	-0.01014
0.031161	-0.02813	0.003215	0.003356	-0.00341
0	-0.00322	-0.01282	-0.02843	0
-0.03571	0.035484	0	0.003442	0.027397
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0.005731	0.008902	-0.00336	0.022727	-0.02422
-0.02564	-0.00882	-0.01347	0.049573	-0.00709
-0.03216	0.038576	0.027304	0.035831	0.042857
0.009063	0	0.006645	0.004717	0.027397
0.008982	-0.03429	0.016502	-0.02347	0.06
0.026706	0.026627	-0.03247	-0.0016	-0.03145
-0.00289	-0.02594	0.010067	0.024077	-0.00974
0.014493	0.014793	-0.00332	-0.00157	0.029508
0.014286	-0.01749	0.05	-0.00314	0
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0.020173	0.021605	0.009317	0.033846	-0.01905
0	-0.01813	-0.01846	-0.0119	-0.00647
0.011299	-0.00308	0	-0.02711	-0.00326
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-0.02521	-0.00308	-0.00645	-0.04427	-0.04575
-0.00862	-0.05556	-0.00974	-0.00799	0.003425
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-0.01802	-0.02083	-0.01695	-0.02597	-0.01718
-0.03058	-0.04255	0.003448	-0.01333	0.006993
-0.01893	0.007407	0.051546	0	0.017361
-0.02894	-0.01471	-0.00327	0.033784	0.047782
0.05298	0.033582	0.029508	0.011438	0.013029
0.04717	0.025271	0.009554	-0.00485	-0.02572
0.036036	-0.00704	0	0	0
-0.0058	0	-0.02524	-0.00649	-0.0033
0	-0.01418	0.009709	0.037582	0.019868
0.002915	-0.02158	0.025641	0.007874	0.016234
0	0.044118	0.003125	-0.00625	0
-0.00291	0.03169	-0.02492	-0.0283	-0.01597
-0.00583	-0.0273	0.019169	-0.01294	0.006494
0.032258	0.010526	-0.00313	-0.01148	-0.00323
-0.00284	0.048611	-0.00943	-0.00332	-0.00971
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0.017804	-0.02834	0.003115	-0.01843	0
0.002915	-0.04167	0.006211	0.008532	-0.02
-0.01163	-0.01304	-0.01235	0.001692	0.017007
-0.00588	0.004405	0	0.018581	0
0.002959	0.008772	0	0.033167	0.010033
0.014749	0.052174	0	0.020867	-0.01987
-0.00581	-0.03306	-0.025	-0.00157	-0.01014
0	-0.00427	0.016026	-0.05354	-0.01024
-0.00877	0.017167	0	0.018303	0.024138
-0.00885	0.080169	0	0.013072	-0.00673
0.002976	0.109375	-0.00631	-0.00806	-0.00339
0.002967	-0.02465	0.009524	0.003252	0.006803
0	-0.01805	-0.00314	-0.00162	-0.00676
0.014793	0.007353	0.003155	0.029221	0.003401
-0.01166	-0.02555	0	0.007886	0.00339
0.00295	-0.00749	0.006289	-0.05477	0.003378
0	0.033962	0	0.056291	0.006734
0.005882	0.025547	-0.00313	-0.02821	-0.01338
-0.00585	-0.02135	0	0	0
-0.00588	0	0.003135	0.008065	0.00678
0	0	0	0	-0.0101
-0.00592	0.014545	0.015625	-0.008	-0.0068
0.116071	0	0.003077	0.012903	0
-0.10667	-0.01792	-0.00307	-0.00318	0.023973
-0.01493	-0.02555	-0.00615	0.001597	0
0	-0.02996	0.003096	-0.00159	0
0.006061	-0.05019	-0.01543	-0.00319	0.026756
0.003012	0.04065	0.018809	-0.02885	-0.00326
0.003003	-0.00391			
-0.00299				

LPKR	LSIP	PGAS	SILO	SMGR
0.017316	0	0.016807	0	-0.01049
-0.02553	0.010471	-0.00826	0	0.004545
0.026201	0.03886	-0.00417	0.045958	-0.00452
0	0.009975	0.004184	-0.01406	0.00303



-0.01702	-0.02469	-0.00417	0	0.004532
-0.03896	-0.01013	-0.02092	0.007129	-0.00902
0.018018	0	0.021368	-0.01062	0.004552
-0.00885	0.01023	0	0.001789	-0.01057
-0.01786	-0.01519	0.004184	0.042859	0.00916
-0.02727	-0.01799	-0.0125	-0.03596	-0.02269
-0.0514	-0.02618	-0.01266	-0.00533	-0.04025
-0.0197	0.013441	-0.00855	0	-0.00968
0.035176	0.02122	0.008621	0.017855	0.029316
-0.00485	0	-0.00427	-0.0228	0.011076
-0.03415	-0.01299	0.004292	-0.00359	0.001565
0	-0.00263	0.012821	0	0.004688
0	-0.01055	0.012658	-0.0054	0.001555
0.030303	0.018667	-0.00417	0	0.004658
0	-0.01047	0.004184	-0.00725	0.001546
0.009804	0.007937	-0.00417	0.005474	0
-0.00485	0.013123	-0.01255	-0.00181	0.001543
-0.02439	-0.01554	-0.01695	-0.01091	-0.01849
0.015	0.007895	0	0	0.00314
0.009852	0.05483	0	-0.00184	-0.00626
0.019512	0	0	0.001841	-0.00787
-0.00478	-0.00743	0	-0.00184	0.012698
-0.01923	0.004988	-0.03017	-0.00552	0.012539
-0.01471	-0.03722	-0.03111	-0.02037	-0.01393
0.024876	0.015464	0.009174	-0.00945	0.017268
-0.01456	-0.02792	-0.00455	0	-0.07407
0	-0.01044	-0.05023	0.001908	-0.06
0.014778	0.010554	0.014423	-0.00571	0.005319
0.009709	-0.00522	0.014218	0	-0.00529
0.024038	-0.01312	0.004673	0.017239	0.021277
0.056338	-0.00798	0	0.015064	0.005208
-0.02667	-0.02681	-0.02326	-0.01113	0
0	0.013774	0.004762	-0.00188	0.003454
-0.00457	0.002717	-0.00948	0	-0.00344
0.045872	-0.01084	-0.02871	0	-0.00518
-0.00439	0.008219	-0.00493	0.007518	0.012153
-0.03084	-0.01359	0	0.007462	-0.00515
0.013636	-0.01653	0.029703	-0.00185	0.012069
-0.00448	0	0.033654	-0.01113	0.006814
-0.0045	0.044818	-0.02326	0.001876	-0.01015
0.00905	0.045576	0	-0.05992	0.010256

0.004484	-0.02564	0.004762	-0.03188	0.00846
-0.00893	-0.00789	-0.00474	0.00618	-0.01174
0	0.005305	0.009524	0.006134	0
-0.0045	0.002639	0	-0.00406	-0.02207
0.00905	0.005263	0	0.012243	0.003472
0	-0.00524	0	-0.01411	0.00346
0	0	0.014151	0	0.012069
0.049327	-0.00263	0	0.002045	0.006814
-0.00427	-0.01055	0	0	-0.00169
-0.01717	-0.02667	0.009302	0	0.00339
0.008734	-0.01096	0.009217	-0.01225	0.008446
0.008658	0.00554	-0.01826	0.012404	0.015075
0.004292	0.011019	-0.01395	0	-0.0033
0.008547	0.024523	-0.01887	-0.00204	-0.0149
-0.00424	0.018617	0.019231	0	0.001681
-0.00426	0.002611	0.009434	0	-0.00503
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0	0.007916	0.004762	0.024595	0.001681
0.0131	-0.01832	0.014218	0.048002	0.003356
-0.0431	0.008	0	0.045795	-0.01338
0	-0.00794	-0.02336	0.003649	-0.00339
-0.0045	-0.016	-0.00478	-0.01818	-0.01701
0	0	0	-0.00185	-0.00519
-0.00905	-0.00271	0	-0.00186	-0.01043
-0.00913	0.043478	0.004808	-0.00186	0.012302
0.041475	-0.01042	-0.00478	-0.00372	0.006944
0.022124	-0.02895	-0.02885	0	-0.01724
0.047619	-0.00271	0.009901	0.001869	0.010526
0.033058	-0.00272	0.009804	0	-0.04167
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0.024194	-0.00559	-0.03448	0	-0.00739
0	-0.05618	-0.05	0	-0.04097
0.003937	-0.01786	-0.00107	0	0.009709
0.007843	0.042424	0.015054	0	0.034615
0.015564	0.002907	0.018008	-0.00186	0.007435
0.034483	0.002899	-0.00104	-0.00186	0.00738
0.011111	-0.01156	0	0	0
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-0.01103	0.014925	0.007299	-0.00187	0.001838
0.022305	0.005882	0.007246	-0.00188	0.00367
-0.00364	-0.00585	-0.01747	-0.01504	-0.01463

0.00365	-0.00882	0.004184	-0.01909	0.005566
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0.014706	-0.01205	-0.00829	-0.00198	-0.03166
0.047101	-0.04268	-0.03866	-0.0119	-0.01154
0.00346	-0.01274	-0.0413	-0.04217	0.021401
0.006897	-0.03871	-0.01587	-0.0021	0.04381
-0.09247	0.033557	0.049539	0.063026	0.007299
0.030189	-0.01948	-0.01537	0.053361	-0.00362
0.018315	0.062914	0.047938	-0.01688	0.005455
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-0.01487	0	0.005348	0.020752	-0.01095
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-0.0076	-0.07237	-0.04849	0.026734	-0.01479
-0.01149	0.021277	-0.0034	-0.01389	-0.0075
-0.06202	-0.01736	-0.03068	-0.01584	-0.0189
-0.02066	0.007067	-0.03869	0.016098	-0.03661
0.101266	-0.03158	-0.03659	0.063379	0.018
0.007663	0.018116	-0.00886	-0.00993	0.021611
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-0.00402	0.116041	0.02454	0.005395	-0.00377
0.044355	0.058104	0.02515	0.044724	-0.01512
-0.01158	-0.00578	-0.01285	-0.00686	0.021113
0.015625	-0.04942	0	0.001724	0.005639
0.015385	0.039755	-0.00592	0.032705	-0.00374
-0.00379	-0.01471	0.002381	0.031669	-0.01313
0.023574	-0.0209	-0.00238	-0.02262	-0.0019
0.010401	0.042683	-0.00357	-0.00826	0.001905
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0	0.00578	0	-0.02041	0.013283
-0.00385	-0.0431	-0.00116	-0.01736	0.007491
-0.05019	0.027027	0.004657	-0.00353	0.001859
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-0.00433	-0.01149	-0.00116	-0.00355	-0.0189
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0.082569	0.003175	0.001164	-0.00373	-0.0081
0.029661	0.022152	0.013953	0.018724	0.004082
0.028807	0.003096	-0.01491	0.051472	-0.01626
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0.021645	0.006431	-0.00811	0.043472	0
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0	0.047319	0.030084	0	-0.0081
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0.020513	-0.0603	-0.09859	-0.04831	-0.09718
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0.05102	0.010638	-0.01582	0.003623	0.126623
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0.023923	0.04902	-0.05	0.010955	0.044693
-0.03738	0.009346	0.009074	0.041511	-0.0107
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0.030303	-0.00651	0.008	0	0.022161
0.02451	0.039344	0.003968	-0.01966	0.01084
-0.03349	-0.01577	-0.00395	0.012531	-0.01072
-0.0198	-0.00641	-0.01587	0.004951	-0.02439
-0.02525	-0.00323	0.016129	0.024628	-0.01389
0	-0.02265	-0.01587	0.033659	-0.00282
0.020725	-0.00993	-0.04435	0.051156	-0.00565
-0.01523	-0.00334	0.008439	-0.02876	0.011364
-0.02577	-0.03691	-0.00418	-0.0205	-0.01124
0.037037	0.003484	0	-0.00465	0.028409
0.045918	0.013889	0.008403	0	0.008287
-0.00488	-0.01712	-0.0125	0.018689	-0.00822

0.029412	-0.02091	0.021097	-0.09174	-0.00829
0.019048	-0.01068	-0.01653	0.093437	0
0.018692	-0.02518	0	0.002309	-0.01393
-0.02752	0.00369	-0.01681	-0.00461	-0.00565
0.061321	-0.00368	-0.00855	0.011573	0.002841
0.017778	0.02214	0	0.052634	0.03966
0.004367	-0.00361	0.008621	0.004347	0.019074
0.017391	-0.00362	0	0.004328	-0.0107
0	-0.01818	0.025641	-0.01293	0.045946
0.025641	0.037037	0.05	-0.01747	0.015504
-0.025	0.003571	0	-0.02222	-0.03053
0	-0.00712	-0.00397	0.00909	-0.02625
-0.01709	0.028674	0.059761	-0.00901	-0.02426
0.030435	0.052265	0.165414	0.004545	-0.00829
-0.00844	-0.01987	-0.03226	0.022622	0.061281
-0.01702	0.003378	-0.02333	-0.02655	-0.00262
0	-0.01347	-0.01365	0	-0.00789
0.004329	0	0.027682	-0.04319	-0.01326
-0.00862	-0.00341	0	0.007125	0.010753
0	-0.02397	0.047138	-0.00472	0.010638
-0.00435	0	0.041801	-0.00948	0.021053
-0.00873	0.014035	0.04321	0.033498	-0.00258
0.030837	-0.02768	-0.02663	0.009258	-0.03101
-0.02564	0.021352	0.042553	-0.10321	0.066667
0.013158	-0.00697	-0.02332	0.066494	-0.01
0.030303	0.017544	-0.02388	-0.0048	0.027778
-0.0084	0.027586	0.009174	-0.00241	-0.00491
-0.01271	-0.00671	0.015152	0.002415	0.022222
-0.00429	0	-0.02388	0.007228	0.041063
0.008621	-0.00338	-0.01223	-0.01435	0.076566
-0.00427	0.023729	-0.01548	-0.00485	-0.01724
0.004292	-0.00993	-0.0283	-0.02683	-0.02851
-0.01709	-0.02007	0.012945	-0.01003	-0.00677
0	0.03413	-0.03834	0.025317	-0.00909
0.017391	0.009901	-0.01993	-0.00247	0.013761
-0.01282	0.035948	0.074576	0.002476	0.015837
0.004329	0.015773	-0.02208	0.160494	-0.01114
-0.00431	0.024845	0.022581	-0.08723	0.004505
-0.00866	-0.0303	-0.00315	-0.02332	-0.03363
0.0131	-0.01563	0.012658	0	-0.0348
-0.00862	0.028571	0.040625	-0.0167	0.002404

-0.03043	-0.00617	0.006006	0.016988	0.007194
0.022422	-0.04037	-0.04478	-0.00955	-0.00952
-0.03509	0.006472	-0.03125	0.002409	-0.02885
-0.03182	0.028939	-0.02581	0.08173	-0.0198
-0.01408	-0.03125	-0.06623	0.004444	-0.0101
-0.00476	0.003226	0.014184	-0.06637	0.020408
0	0.016077	-0.00699	-0.01422	0.015
0	0.015823	0	0.028852	0.004926
-0.00478	-0.00312	-0.01408	-0.00234	-0.01471
0	-0.00938	0.003571	0.01405	0
-0.00481	-0.00315	0	-0.00231	0
0.004831	-0.05696	-0.03203	-0.00926	-0.0199
-0.00481	-0.01342	-0.01471	-0.00935	-0.01523
0.004831	0.02381	0.018657	-0.02122	0.025773
0.024038	-0.00332	-0.02564	0.002409	-0.00503
0	0.046667	0.030075	0.024045	0.022727
0.028169	-0.00318	-0.0219	-0.02348	-0.01235
0.004566	0.003195	0	-0.01923	-0.0175
0.013636	-0.01274	0.003731	0.014704	0.02799
0.004484	-0.0129	0	0.002415	0.029703
-0.01786	0	0.055762	-0.00241	0
-0.09545	0.003268	0.010563	0.00483	0.004808
0.01005	-0.01954	-0.01742	0	0.004785
-0.01493	0.013289	0.010638	-0.01202	0.007143
0.005051	-0.01967	0.007018	0.012164	-0.04492
0	0.043478	0	-0.00961	0.029703
-0.01005	-0.01923	0.010453	0	0.026442
-0.03046	-0.01634	-0.05862	0.002427	-0.01639
0.015707	-0.01329	-0.02198	0.007263	-0.00476
-0.01031	0.020202	-0.02622	-0.00481	-0.00478
-0.02083	-0.0099	0.003846	0.00483	-0.00962
0.026596	0.003333	-0.00766	0	-0.02913
-0.02073	-0.00664	-0.00386	0.012018	0.005
-0.01587	-0.02676	-0.00388	-0.02137	0.002488
-0.00538	0.020619	-0.00389	0.03884	0
0.005405	0.040404	0.011719	0.007008	-0.01737
-0.01075	0.02589	-0.00772	-0.00928	0.015152
-0.00543	-0.02524	-0.02724	0.023416	-0.00746
-0.01639	-0.01618	-0.004	-0.02747	-0.00752
0.005556	-0.02961	-0.02008	0.035299	0.010101
0	0.037288	0.053279	-0.02727	-0.0025

-0.01657	0.013072	0.011673	-0.03505	0.017544
-0.01685	0	-0.01538	0.007263	-0.00739
0.017143	-0.00968	-0.00391	0.038466	0
0.016854	-0.01954	0.015686	-0.03936	-0.00993
-0.00552	0.013289	-0.01158	-0.01446	-0.01253
-0.02222	-0.03279	-0.01563	0.014668	-0.03553
-0.00568	-0.0339	-0.02381	-0.00723	-0.00526
0.005714	-0.02807	-0.02439	-0.0267	-0.01852
0.011364	0.018051	0.029167	-0.01247	0
0	0.031915	0.004049	0.020201	0.002695
-0.00562	0.024055	0.004032	0	0.010753
0	-0.0302	-0.00402	0.017327	-0.01862
-0.02825	0.013841	0.012097	0.007298	0.00542
-0.0407	0.068259	-0.05578	0.043483	-0.04582
-0.04242	0.035144	-0.04219	-0.06482	-0.04802
-0.00633	-0.03395	-0.01762	-0.02228	-0.02671
0.025478	0.015974	0.053812	-0.03544	0.030488
-0.00621	0.031447	0.025532	0.044619	-0.01183
-0.00625	-0.02439	-0.0083	0.022614	0.008982
0	0	0.004184	-0.00737	0.005935
0.012579	0.021875	0.05	0.014852	-0.0059
-0.02484	0.024465	0.003968	-0.00244	-0.00297
0	0.035821	-0.01581	-0.01223	-0.04167
-0.00637	0.005764	0.048193	0.014852	0.018634
-0.01923	0.017192	0.003831	0.009755	0.057927
0	0.028169	0	0.00483	0.002882
0	-0.00548	0.01145	0.009614	0.020115
0	-0.00275	0.022642	0.016132	0.042254
-0.00654	-0.00552	0	0.02381	0
0.006579	0.036111	0.01476	0	-0.0027
0	0.013405	0.029091	0	0
0	-0.0291	-0.01413	0.006977	0.00271
-0.01307	-0.04087	0.017921	-0.01617	-0.00541
-0.01325	-0.00568	0	-0.03052	0.01087
0	-0.01714	0.028169	-0.00726	0
-0.00671	0	-0.0137	0	0
-0.02703	0.031977	-0.02778	0.009756	-0.03495
0.006944	0.019718	-0.025	-0.01449	0.022284
-0.0069	0.005525	-0.01465	-0.01716	-0.00817
-0.00694	-0.03297	-0.01859	0.004988	-0.01923
-0.01399	-0.00852	-0.02273	-0.00744	0.022409

0.007092	-0.03152	-0.03876	0.005	-0.02192
0	-0.01479	0.016129	0.004975	0.014006
0.021127	0.021021	0.003968	0	0.002762
0	0.005882	0.043478	0.034653	0.027548
-0.0069	0.02924	0.045455	0.043062	0.008043
0	-0.01136	-0.02174	0.036697	-0.02394
0	0	0	-0.0354	0
0.097222	0.002874	0.044444	0	-0.00817
0	-0.03438	0.01773	0.027523	0.038462
-0.01266	-0.0089	-0.00348	-0.00893	0.005291
-0.01282	-0.00299	-0.00699	0.02027	-0.01053
0.012987	0	-0.02817	0.006623	-0.02926
-0.00641	0.033033	-0.00725	0.019737	0
-0.00645	0.002907	0.021898	-0.01075	-0.03014
-0.02597	-0.02029	-0.025	0.015217	-0.01695
-0.04	-0.00888	0.010989	0.010707	0.008621
0	-0.01791	-0.02174	-0.02119	-0.00855
0.020833	0.024316	-0.01111	0.028139	-0.00862
0.027211	0.032641	0.022472	0.014737	0.014493
-0.03311	-0.01724	-0.00366	0.010373	-0.00286
0	-0.02632	-0.04412	0	-0.01146
-0.00685	0.006006	-0.00769	-0.00616	-0.0029
0	-0.00896	0.031008	0	0.011628
0	-0.01205	-0.00376	0.010331	0.037356
-0.0069	-0.0061	0.030189	-0.03067	0.019391
0.013889	-0.0184	0.025641	-0.00211	0.002717
0.006849	-0.00938	0.028571	0.006342	-0.01355
-0.0068	-0.02208	0	-0.0021	-0.00824
0	0.016129	0	-0.00632	0
0	0.015873	-0.00347	0.008475	0.030471
0.034247	-0.01563	0	0.016807	-0.01075
0.006623	0.003175	0.04878	0.014463	0.008152
0.013158	-0.00633	-0.03654	0.136456	-0.01348
-0.00649	0	-0.02414	-0.0681	0.010929
-0.01961	-0.01592	-0.00707	0.036538	0.040541
0	0.029126	0.003559	-0.02041	0.012987
0.006667	-0.01258	0.01773	0.018939	0.007692
0	0.012739	-0.02439	0.040892	-0.04835
0.013245	0	0	-0.00357	0
0	0.006289	0.010714	0	0.016043
0.013072	-0.02813	-0.02473	-0.01434	-0.02368

-0.00645	-0.01929	-0.02536	-0.01818	-0.00809
0	0.013115	0	0	-0.00543
-0.00649	-0.02265	0	-0.01481	0.008197
-0.01961	-0.00662	0.055762	-0.02256	0.00271
-0.00667	0	0.007042	0.038462	0.035135
-0.01342	0.026667	-0.01399	0.018519	-0.00522
	-0.04221	0.003546	-0.00182	0.010499
			-0.03825	

SMRA	TLKM	UNTR	UNVR	WIKA
0.022951	-0.00174	0.001395	-0.00319	0.03045
0.012821	-0.0087	-0.03064	0	-0.00622
-0.01899	-0.00175	0.028736	0.009592	-0.00156
-0.00968	-0.00176	-0.01257	0.003167	0
-0.02606	-0.01232	-0.00707	-0.01657	-0.02194
0.043478	-0.00357	0.002849	-0.00401	-0.0016
0	0.014311	-0.01136	0.002417	0.056179
0.003205	0	-0.01006	-0.00643	0.003039
0.019169	-0.00353	-0.00726	0.002427	0.013639
-0.01254	-0.01416	-0.01462	0.008071	-0.01495
-0.05714	-0.01436	-0.01484	-0.0008	-0.02276
-0.0101	-0.00729	0.039157	-0.01603	-0.00621
0.030612	0.027523	0.002899	0.032573	0.021877
0.042904	0.005357	-0.01012	0.009464	0.022937
-0.02848	0.003552	0.007299	-0.01563	-0.00149
0.009772	0	0	0	0.025447
-0.0129	0.00708	-0.0058	0.000794	0.032117
-0.00654	0.001757	0.002915	0.013481	0.052333
0	0.005263	0.008721	0.010955	-0.01075
0.019737	-0.00175	-0.00288	0.006966	-0.00136
0.012903	-0.00874	-0.02457	-0.00154	-0.02721
-0.00318	-0.00705	0.004444	0	-0.00559
0.025559	-0.00178	0.004425	0.020015	0.026724
0.018692	0.008897	-0.00734	0.007547	0.008219
-0.02752	0.008818	0.011834	-0.00449	-0.00136
-0.01572	-0.00874	-0.00146	-0.03386	-0.02041
-0.03195	0.001764	0.023426	0.028037	0.005558
-0.0132	-0.00528	-0.00143	-0.01061	-0.01934
0.033445	0.00177	-0.00143	0.002297	0.022536

0.035599	0.0053	-0.01004	0.023682	-0.01791
0.003125	0.003515	-0.01159	0.014925	0.00561
-0.00935	0.015762	0.004399	0.005882	0.004184
0.012579	0.005172	0.00146	0.05117	-0.00139
0.052795	-0.01201	0.027697	-0.00417	0.012519
-0.03835	0.003472	0.014184	0.011173	0.004121
-0.02147	-0.02422	0.00979	-0.01934	-0.02873
-0.00627	0.003546	0.00831	0.000704	0.022536
0.028391	0.0053	0	-0.0007	0.012396
0.003067	0.005272	0	-0.00352	0
0.009174	-0.01049	-0.01648	0.012721	0.019049
-0.01818	-0.00883	-0.01676	0.00977	0.00534
0.030864	0.00713	0.017045	0.005529	0.013279
-0.00599	0.00708	0.006983	0.000687	-0.04194
-0.01506	-0.01054	-0.00139	-0.03159	-0.0041
0.051988	0.005329	0.027778	0.039716	-0.00137
0.023256	0.010601	-0.02027	-0.01432	-0.00413
-0.0142	-0.00524	0.017931	-0.0173	-0.01658
0.014409	0.005272	0.006775	0.00493	-0.0014
-0.00852	0.012238	0.001346	0	-0.00703
0.008596	0.029361	0.018817	0.01822	-0.00142
-0.01989	-0.0302	-0.01055	-0.03372	-0.01418
-0.01739	0.00173	0.013333	0.022792	0.005755
0.070796	0	0.014474	-0.01114	0.020027
0.008264	-0.00173	-0.00649	-0.00493	0.019637
-0.01093	0.00692	0.003916	0.020524	0.012379
-0.00276	-0.00172	0.024707	-0.00069	-0.00815
0.00277	0.022375	0.020305	0.009022	0.005479
0.002762	0.001684	-0.00498	0.004127	0.001362
0	-0.01345	0.0375	-0.0137	-0.00408
-0.01102	0.005111	0.042169	0.011111	-0.0082
-0.00557	-0.00169	0.027746	-0.00893	-0.00964
0.005602	-0.01188	-0.02587	0.000693	-0.01391
-0.039	0	0.005774	0.004155	-0.00846
-0.03478	0.025773	-0.00115	0.042759	-0.00284
-0.03303	-0.0134	-0.05172	-0.00794	-0.02283
0.031056	0	0.035152	0.008	0.01752
-0.02108	-0.0017	-0.01991	0.025132	-0.01148
-0.00308	-0.0051	-0.00836	0.027742	0.002903
0.024691	0.010256	0.001205	0.001255	-0.01447
-0.00602	0.006768	-0.00602	-0.00752	-0.00147

0.036364	-0.00672	-0.00726	-0.01453	-0.00294
-0.03216	-0.00169	0.04878	-0.03846	0.041298
0.036254	0	-0.00116	0.021333	0.014163
-0.01749	-0.01017	-0.00349	0	0.005586
0.002967	0	-0.01051	0.008486	-0.01111
-0.00592	0	0.01889	0.00712	-0.01264
-0.02083	-0.0137	-0.0197	-0.00193	-0.01849
-0.0152	-0.02431	-0.01418	-0.00837	-0.01449
0.003086	0	0.026379	0.015584	-0.01323
0.043077	0.019573	0.007009	0.014066	0.016392
0.014749	0.008726	0.011601	0	0.024928
0.02907	-0.01903	0.009174	-0.01576	-0.01574
0.022599	-0.00353	-0.00114	0.000641	-0.02616
0.016575	0.00354	0.002275	0.006402	-0.01194
0.05163	0.007055	0.039728	0.012723	0.054383
-0.01809	0.001751	-0.01747	-0.02764	0.030084
-0.01316	-0.00699	0.023333	0.016796	0
0.005333	-0.00528	0	0.001271	-0.00973
0.029178	-0.01062	0	0.009518	-0.00983
-0.02062	0	-0.00977	-0.02577	-0.00425
-0.01053	0.003578	0.010965	-0.00323	0.005698
-0.00266	0.001783	-0.00108	-0.01359	0.007082
-0.024	-0.00178	-0.00109	0.000656	0.007032
0.019126	0.010695	-0.02391	0.007213	-0.00419
0.008043	0	0.020045	0.041667	0.00561
0.010638	-0.00176	-0.00328	0.00875	-0.00279
0.010526	0.008834	0.006572	0.034696	-0.01259
0.005208	0.017513	0.004353	0.02994	-0.00567
-0.01813	-0.0327	-0.01625	-0.02151	-0.03989
-0.02902	-0.00712	-0.00881	0.057635	0
-0.04076	-0.03226	-0.02222	-0.05056	-0.04006
0.008499	-0.03148	-0.02727	0.008284	-0.07728
0.022472	0.057361	-0.00467	0.00939	-0.00335
0	-0.00542	0	0.027326	-0.02857
-0.00824	0.007273	-0.00352	0.022637	0.027683
-0.00277	0.021661	0.074205	-0.03929	0.016834
-0.01667	0.010601	0.049342	0.013825	0.026492
-0.00282	-0.00524	-0.01567	-0.00795	0.008064
0	-0.01582	0.010616	-0.02635	-0.0064
0.056657	0.0125	-0.0042	-0.00471	-0.00805
0.024129	0.001764	-0.03797	0.028369	0.00487



0.015707	-0.00352	-0.0307	0.008046	-0.00162
0.010309	0	0.019231	0	0.046925
-0.01531	0.001767	0.014428	-0.0114	0.030909
-0.00518	-0.00176	0.0186	0.009804	0.001502
-0.0026	0.014134	-0.02793	0.014278	0.002994
0.041775	-0.01394	0	0.029842	-0.00448
-0.01003	0.008834	-0.0232	-0.02679	-0.01799
-0.02785	-0.0035	-0.04525	0.010112	-0.03054
0.028646	0	-0.03791	-0.03671	-0.0063
-0.0557	0.010545	0.011084	-0.00231	-0.00475
-0.04558	-0.01739	0.049939	0.009259	-0.02866
0.022472	0.010619	0.006961	-0.02179	0.024592
-0.00275	0	0.023041	-0.01172	0
-0.03306	-0.00876	-0.01577	-0.01423	-0.0256
-0.04274	0.010601	-0.06178	-0.04452	-0.03776
0.011905	0.003497	0.02439	0.041562	-0.04437
0.023529	-0.00697	-0.03095	-0.01693	-0.01429
-0.03448	-0.01404	0.007371	0.014145	-0.00181
-0.03571	0.021352	-0.01463	-0.02244	-0.03448
0.04321	0.001742	0	-0.00744	-0.04135
0.005917	0.001739	-0.0099	0.023125	0.019606
-0.00294	0.003472	0.0175	0.01405	0.026925
-0.03835	-0.01903	-0.00614	-0.0012	0.00749
0	0.005291	-0.00494	0.002413	0.01301
0.021472	0.010526	0.009938	-0.02527	0.005504
0.006006	0.008681	-0.00492	0.022222	0.003649
0.002985	0.010327	-0.06675	-0.0151	-0.01818
-0.0119	-0.01022	0.025166	-0.01901	-0.01481
-0.01506	0.008606	0.043928	-0.00938	-0.0188
0	-0.00341	0.008663	-0.00315	-0.03832
-0.01529	0.003425	-0.01718	0.012658	-0.00199
0.018634	0	-0.01748	0.008125	0.02595
0.036585	0	0.008895	0.026038	0.126457
-0.01176	-0.02048	-0.04282	-0.02115	0.008635
0.056548	0.010453	0	-0.00617	-0.02397
-0.01972	-0.00862	-0.01053	0.01118	0.04386
0.017241	0	-0.01064	-0.01474	-0.0084
-0.00565	0.005217	0.010753	0.002494	0.011863
0.022727	-0.00346	0.021277	0.003731	0.036852
-0.04167	-0.0191	0.005208	-0.00867	0.017769
0.011594	0.014159	-0.0013	0.005625	0

0.034384	-0.00698	-0.04669	-0.00497	-0.02222
-0.00831	0.003515	0.014966	0.003123	0.008116
-0.03073	-0.01051	-0.00938	-0.00436	0
-0.01441	0.00708	-0.0203	-0.00563	-0.02255
0	0.003515	-0.00829	0.006289	-0.03295
0	0.005254	0.038997	-0.0075	-0.03578
0.008772	0.02439	0.029491	-0.03023	-0.0106
0.008696	-0.0068	0.052083	0.038961	-0.05536
0.045977	-0.01541	-0.01485	-0.02813	0.00378
-0.01099	0.022609	0.012563	-0.00707	0.005653
0.016667	-0.0034	0.002481	0.015544	-0.00749
-0.02732	0.008532	-0.04455	-0.01913	0.011324
-0.00843	0.003384	0.046632	0.006502	0
0.01983	-0.00843	-0.0099	-0.00646	-0.00373
-0.04444	-0.04762	-0.025	-0.03121	-0.00749
-0.03779	0.008929	-0.01026	-0.04027	-0.03962
0	0.017699	-0.00518	0.037762	-0.03144
0.006042	0	0.026042	-0.00809	0.081138
-0.04505	0.001739	-0.03046	-0.00476	0.035644
0.034591	-0.00347	-0.02618	-0.01911	-0.01993
-0.01216	-0.04878	0.016129	-0.00418	0.003697
-0.02154	-0.02564	-0.01587	-0.00489	0.001841
-0.08805	0.016917	-0.08065	-0.04494	-0.03125
-0.00345	-0.00555	0.010234	0.091176	-0.06641
-0.02076	0.052045	-0.04486	-0.02291	0.044716
0.088339	0.012367	0.05303	0.068966	-0.00584
-0.00974	0.001745	0.025899	-0.01935	0.060665
0.062295	-0.01394	0.072931	0.045395	-0.01476
-0.01543	-0.01943	-0.02745	-0.02014	0.035578
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-0.01294	0.003571	0.091781	-0.00065	0
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-0.08014	0.011111	-0.07152	-0.02054	-0.04844
0.011364	0	0	-0.01048	-0.04545
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0.007519	-0.00181	-0.03472	-0.00658	0.018449
-0.03358	0.009058	0.02446	0.02649	-0.01449
0.027027	-0.02693	0.04073	0.03871	-0.01287
-0.02256	0.00369	-0.01754	-0.03106	-0.01676
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0.004016	0.003731	-0.00928	0.017567	-0.00561

0.012	0.01487	-0.01473	0	0.024434
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-0.00398	-0.01667	-0.02273	-0.02436	-0.00922
-0.04	0	0.008208	-0.02891	-0.01304
-0.04167	-0.02072	-0.04885	-0.01894	-0.00943
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0.091787	0.015355	0.019608	0.052632	-0.0094
-0.00885	-0.00567	0.034024	0	-0.01708
0	-0.0038	-0.02146	0.021053	0
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0.054795	0.025735	0.025	0.031746	-0.01501
0.082251	-0.01792	0.021521	0.011538	0.120003
0.06	-0.01095	0.05618	-0.01141	-0.03572
0.026415	-0.00369	-0.01729	0.012821	0.02998
0.044118	-0.00185	0.066306	-0.01139	0.006852
0.014085	-0.02041	0.010152	0.008963	0.025508
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-0.00383	0.014925	0.029973	-0.01118	-0.01475
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-0.00357	0.00738	0.017834	0.010437	0.006768
0.057348	0.003663	0.033792	-0.00065	0.028569
0.023729	0.007299	-0.01695	-0.01163	0.013074
0.072848	0.016304	0	0.004575	-0.01774
0.046296	-0.00357	0	0.005856	0.021348
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-0.06885	-0.01832	-0.07314	-0.02618	0.001626
-0.01761	0.022388	-0.01497	-0.00538	-0.0487
-0.01434	0	0.016575	-0.0027	0.003413
0.054545	-0.00365	-0.00408	-0.00271	-0.04762
0.006897	-0.00916	0.036835	0.006114	0.01607
-0.03082	0.011091	-0.01579	-0.00675	0.012301
0.017668	-0.00183	-0.04144	0.006118	-0.00347
-0.04167	-0.01282	-0.00139	-0.00811	0.005226
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0.014599	0.018762	0.008523	-0.00636	0.009157
0.053957	0.014733	-0.01127	-0.01635	0.001815
0	-0.0127	0.011396	0.049133	0.025364
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0.050336	-0.03945	-0.00727	0.014986	0.012499
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0.012821	0.017241	0.005882	0.023697	-0.00697
0.003165	0.00339	-0.0117	-0.01984	0.008771
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0.003236	0.003413	-0.02102	-0.04545	-0.01903
0.006452	0.010204	0	0.017687	-0.00705
0.019231	0.021886	0.015337	-0.01671	0.017761
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0	0.003413	-0.02609	0.013699	-0.00558
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0.020833	0.027961	0.022654	0.006406	-0.00569
0.034014	-0.0208	0.001582	0.046676	0.003816
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0.046667	-0.00797	-0.00482	0.038624	-0.01515
0.006369	0.003215	-0.01131	-0.00879	0.003846
0.031646	-0.00801	0.052288	0.010232	-0.00383
0	0.003231	0.021739	0.006077	0.009615
0.01227	0.011272	0.030395	-0.00671	-0.0019
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0	0.017214	0.015528	-0.00903	-0.00947
0.009524	-0.01231	0.022936	0.049054	0.049713
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0.015773	-0.02703	0.001541	0.004861	-0.00175
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0.022364	0.014308	0.048819	0.021939	-0.00874
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0	0.044776	0.007587	0.034304	-0.00924
0.059859	-0.03571	0.042169	0.01627	-0.00187
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0.042763	-0.04227	-0.00152	0.017136	0.011345
0.018927	0.012177	-0.02883	-0.01083	0.009345
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0.003205	0.021672	-0.0183	-0.0106	-0.01887
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0.009615	-0.01813	0.008278	0.027501	-0.00954
0.012698	0.013846	0.019704	0.014237	0.001927
0.003135	0.013657	-0.03221	0.019652	0.001923
0.028125	0.026946	0.006656	0.052863	0
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0.012539	0.019608	0.008143	-0.01724	0.001984
0.01548	0.017751	-0.02423	0.030409	0.01386
0.009146	0.00436	0.013245	0	-0.00586
0.018127	0.001447	0.009804	-0.00397	0.047152
0.008902	0.00289	0.014563	0.013105	0.015008
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0.006536	0.019231	-0.02403	-0.00584	-0.03494
0.019481	0.005391	0.028409	0.009988	0.013574
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0.026239	0	-0.0308	0.004587	0.021125
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0.050147	0.002519	0.016807	0.03211	0.013748
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0.013477	0.039024	0.028192	-0.015	-0.01042
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0	0.017032	-0.00314	-0.00845	0
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0	0	-0.01911	0.036707	0.003496
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0.022535	-0.00682	0.007225	-0.01316	0.028214
0.011019	-0.01144	-0.01578	0.013333	0
-0.01907	-0.00926	0.043732	-0.00055	-0.00305
0.069444	-0.01168	0.00838	0.008228	-0.00306
0	-0.0331	-0.01939	-0.01251	-0.0092
-0.03117	0.012225	0.011299	-0.01377	-0.02786
0	0.02657	-0.00838	0.013408	-0.03185
0.002681	-0.02588	-0.01408	0.004961	0.052631
-0.00267	0.004831	-0.04	-0.00658	0.021877
0.010724	0.014423	0.028274	0.001104	0
0.029178	0	0.013025	0.003861	-0.00917
-0.03093	0	0.015714	-0.00879	0.009259
0.021277	-0.00237	0.012658	0.017738	-0.00612
-0.03646	-0.01663	-0.01667	0.010893	0.015383
-0.04324	0.007246	-0.00565	-0.02047	0
0.002825	0.009592	0.0625	-0.0077	-0.01515
-0.01408	-0.01188	0.002674	0.012195	0
-0.02	0.009615	0.002667	-0.00876	-0.00308
0.017493	0	0.015957	0.00884	0
0.005731	0.009524	-0.0301	-0.0126	0.009259
0.008547	-0.00708	0.039136	0.004992	0
-0.00847	-0.01188	-0.02857	0.012141	0
-0.00855	-0.02644	-0.03743	-0.00218	0
-0.02586	0	-0.02778	-0.0224	-0.00917
-0.0354	-0.01975	-0.00286	0.000559	-0.03395
-0.00612	0.042821	-0.03582	-0.01341	-0.07987
0.046154	-0.01208	0.040119	0.006229	-0.06597
-0.03529	0.026895	0.02	-0.00281	0.007434
0.012195	-0.00952	-0.0014	0.001129	0.029518
-0.00301	0.009615	-0.00842	0.003382	0.007172
0.039275	0.007143	-0.00424	0.010674	-0.01068
0.008721	0	0.021307	-0.00389	0.003597
-0.01153	0.002364	-0.00278	0.016741	-0.01792
-0.00583	0.009434	-0.04045	-0.01537	-0.05109
0.020528	-0.00701	0.052326	0.012821	-0.03462
0.005747	0.009412	0.008287	0.00055	0.055777
0.002857	0.004662	0.013699	0.005501	0.064154
0	0.016241	-0.04324	-0.02516	-0.01064



0.017094	-0.00457	0.036723	0.01459	0.003588
0.002801	-0.01376	0.00545	-0.00332	0.046429
-0.00279	-0.02093	0.01355	-0.00499	-0.01365
-0.02241	-0.00238	0.032086	0.007808	0.00346
0.008596	-0.00952	0.007772	-0.01494	-0.01724
-0.01136	0	-0.03085	0.002247	-0.00702
0.025862	-0.00481	0.03183	0.014574	-0.0212
-0.0084	0.009662	-0.01799	-0.00552	-0.00722
-0.00847	0.007177	0.015707	-0.01111	0
0.014245	0.007126	-0.01031	0.011236	-0.01091
-0.01685	-0.00236	0.03125	-0.00611	0.014705
0.002857	-0.00709	0	-0.00559	-0.00362
-0.0057	0	0.015152	-0.00337	-0.00364
0	0.002381	-0.00249	-0.00056	-0.0146
-0.03725	0.002375	0.007481	-0.00339	-0.00741
0.011905	-0.00474	0.006188	0.005663	-0.02985
0	-0.00238	0.02091	0.000563	0.011538
-0.00294	0.011933	0.019277	0.001688	0.007604
0.014749	-0.00236	0.018913	-0.00169	0
-0.01453	-0.00236	-0.02088	0.002251	0
-0.02655	-0.00474	0.024882	-0.00112	-0.00377
-0.08182	0	0.030058	-0.00056	-0.02651
-0.0363	-0.0119	0	-0.00056	-0.01167
-0.02055	0	-0.01908	-0.00563	-0.02362
0.003497	0	0	-0.00453	-0.01613
0.010453	0.031325	0.019451	0.000569	0.057377
0.013793	-0.03738	0.030303	0.008523	0.02713
-0.0034	0.01699	-0.0098	0	-0.00377
0.006826	-0.05489	0.024202	-0.01521	0.003788
-0.0678	-0.04293	-0.01826	-0.06178	0.075474
-0.05455	0.013193	-0.04595	0	-0.02247
-0.05	0.041667	-0.05046	-0.00061	-0.01938
0.097166	0	0.10628	0.003051	-0.05534
-0.00369	-0.0075	-0.04367	-0.0146	0.037657
0	-0.01008	-0.0274	-0.00617	-0.04839
-0.0037	0.005089	-0.02465	-0.00621	0
0.037175	-0.00253	0.031288	-0.005	-0.00847
0.003584	-0.03299	0.02217	0.016332	0.068376
-0.05714	0.005249	-0.01941	-0.00865	-0.016
0.037879	0.002611	0.01979	0.002494	-0.04065
-0.0073	0	-0.01826	-0.00249	0.033898

0.022059	-0.01563	0.012791	0.013092	-0.04508
0.017986	0.021164	-0.03559	-0.00246	0.012876
-0.0212	0.012953	0.059524	0.034547	0.029661
0.028881	0.012788	0.032584	0.01133	-0.00823
0.014035	-0.01263	0.022851	-0.00413	0.016598
0.013841	-0.01535	-0.01064	-0.01007	0.004082
0	0.023377	-0.00968	-0.01136	-0.02439
0.020478	0.005076	-0.01846	0.003025	-0.00833
-0.01003	0.002525	0.00885	0	0.079832
0.003378	-0.01259	-0.01425	-0.01749	-0.02335
-0.04377	-0.00255	-0.00667	-0.01657	-0.01195
-0.01761	-0.02302	0.010078	0.002497	-0.02016
0	-0.00524	-0.0255	-0.00436	0.041152
0.003584	-0.01842	-0.03982	-0.00313	-0.01186
-0.03571	0.013405	-0.01896	-0.00502	-0.024
-0.07407	-0.00794	-0.02657	-0.029	-0.0123
0.04	-0.016	-0.03102	-0.01364	-0.00415
-0.03462	0.01084	0.007682	-0.00263	-0.03333
0.011952	0.02681	0.01906	0.008581	-0.01293
0.03937	0.028721	0.03616	0.028796	0.034934
0.015152	0.010152	0.008424	0.017812	0.021097
-0.01119	0	0.01432	-0.03	0.004132
0	-0.00754	0	0	-0.02881
-0.01132	0	-0.01176	-0.01224	0
0.038168	0	0.019048	0.048924	0.016949
-0.01471	0.012658	0.026869	0.008706	0.0125
0.011194	0.005	-0.01251	0.001233	-0.01235
0.01476	-0.00498	0.009217	-0.01108	0
-0.03636	-0.01	0.002283	-0.00125	0.008333
0	0	-0.00683	-0.00312	0.045455
0.026415	-0.00253	-0.02638	-0.00063	-0.01976
-0.01838	0	0.03298	-0.00876	0.004032
-0.02996	0.005063	-0.0171	0.000631	0
0.003861	-0.00252	-0.00696	0	0.008032
0.011538	0.002525	0.014019	0.032177	0.003984
0.064639	-0.03526	0.003456	-0.01222	0.007937
-0.03214	0.002611	0.010333	0.002475	-0.01575
-0.00738	0.018229	-0.00114	0.017284	-0.008
0.037175	-0.00256	0.037543	0.019417	-0.0121
-0.01434	0.010256	-0.00768	-0.00238	0.008163
0.018182	-0.01269	0.012155	-0.00239	0.016194

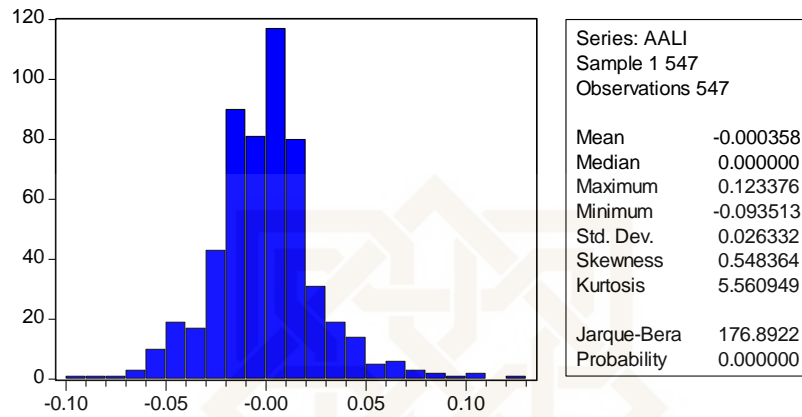
-0.025	-0.00771	-0.0131	-0.00239	-0.00398
-0.01832	0.002591	-0.00996	-0.00899	0.024
-0.02239	0.018088	-0.02346	-0.00302	-0.03906
-0.00763	0.002538	0.020595	0.00182	0.044715
0.011538	-0.02532	0.013453	0.006663	-0.01946
0.003802	0.028571	0.017699	0.01083	-0.00397
0	-0.0101	0.003261	-0.00714	-0.00797
-0.00379	-0.01276	0.001083	0.0006	0.008032
0.003802	0	-0.00433	0	-0.00797
0	0.005168	-0.01087	0.002397	0.004016
0.060606	0.007712	0.010989	0.01853	-0.004
0.035714	-0.01531	0.01413	-0.00411	-0.00803
-0.02069	0	-0.01286	0	0.020243
0	0.002591	0	0	-0.00397
-0.01056	-0.2584	0.034745	0.004125	0
-0.01423	0.348432	0.002099	0	0
-0.00722	0.002584	0.023037	-0.01174	0
0.018182	0	0.002047	0.015439	-0.00398
0.017857	-0.01031	-0.00409	0.002924	-0.008
-0.01754	0	0.011282	-0.01458	0
-0.00357	0.007813	0.034483	0	0.020161
-0.00717	-0.00517	-0.02255	0	-0.01186
-0.01083		-0.01103	-0.00178	0
				0

**Lampiran 2. Expected Return dan Shorthfall**

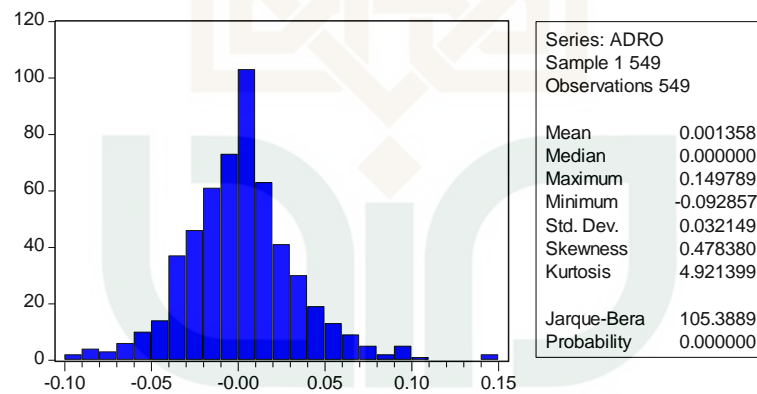
Nama Saham	<i>Expected Return</i>	<i>Shortfall</i>
Astra Agro Lestari Tbk.	-0,000261	0.04493
Adaro Energy Tbk.	0,001358	0.05682
AKR Tambang (Persero) Tbk.	0,001039	0.04155
Astra Internastional Tbk.	0,000575	0.03777
Bumi Serpong Damai Tbk.	0,000297	0.03989
Indofood CBP Sukses Makmur Tbk.	0,000906	0.03443
Vale Indonesia Tbk.	-0,000124	0.06683
Indofood Sukses Makmur Tbk.	0,000623	0.0398
Indocement Tunggul Prakasa Tbk.	-0,000675	0.03965
Kalbe Farma Tbk.	-5,04E-05	0.03492
Lippo Karawaci Tbk.	-0,000591	0.03524
PP Londo Sumatra Indonesia Tbk.	-0,000129	0.04581
Perusahaan Gas Negara (Persero) Tbk.	-0,001009	0.04403
Siloam International Hospital Tbk.	0,000291	0.04301
Semen Indonesia (Persero) Tbk.	-0,000739	0.03687
Summarecon Agung Tbk.	0,000195	0.04843
Telekomunikasi Indonesia (Persero) Tbk.	0,000824	0.02567
United Tractors Tbk.	0,000909	0.04199
Unilever Indonesia Tbk.	0,000704	0.03236
Wijaya Karya (Persero) Tbk.	7,05E-06	0.04108

### Lampiran 3. Uji Normalitas

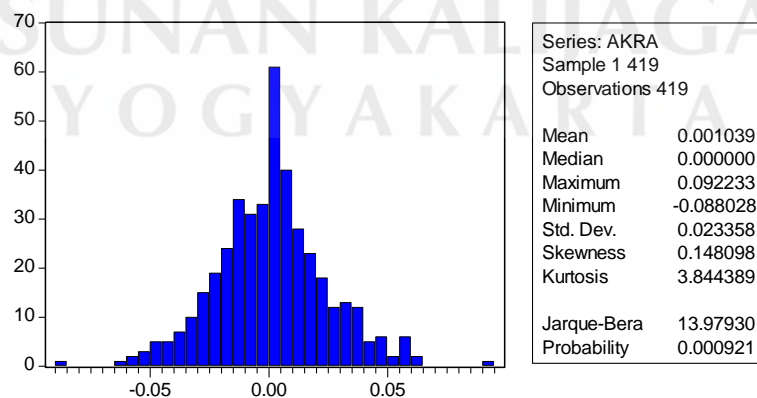
#### 1. Astra Agro Lestari Tbk. (AALI)



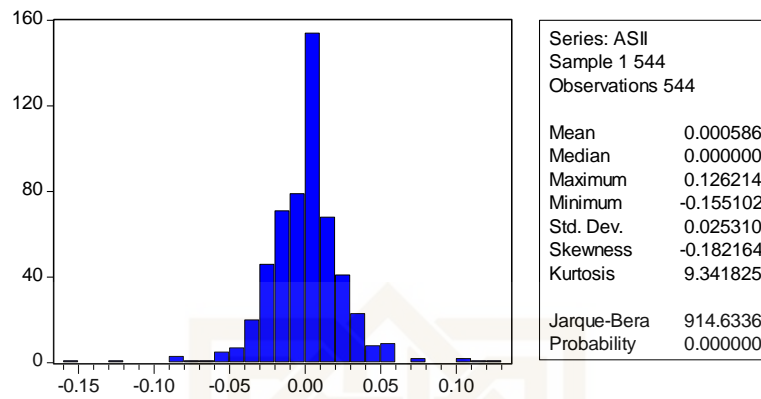
#### 2. Adaro Energy Tbk. (ADRO)



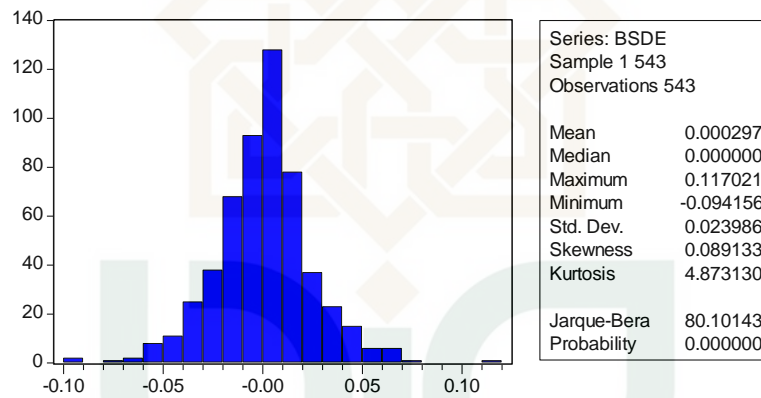
#### 3. AKR Tambang (Persero) Tbk. (AKRA)



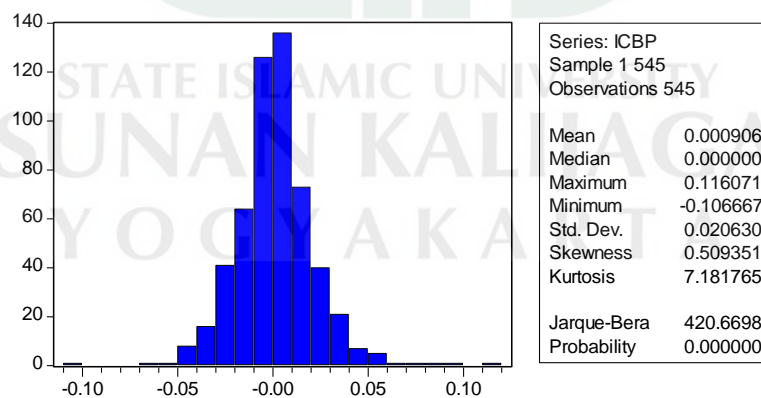
#### 4. Astra Internasional Tbk. (ASII)



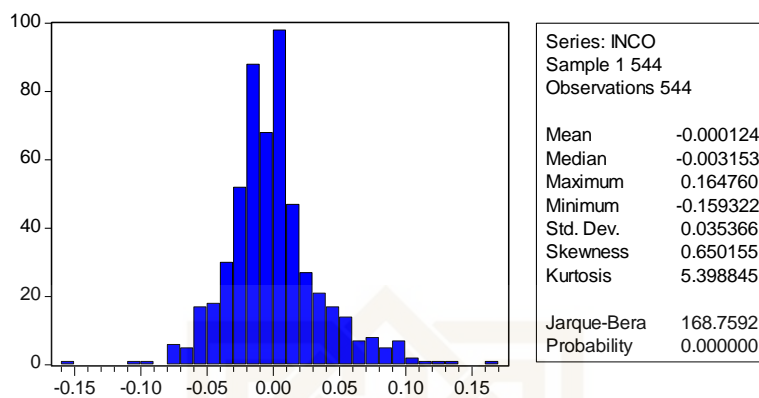
#### 5. Bumi Serpong Damai Tbk. (BSDE)



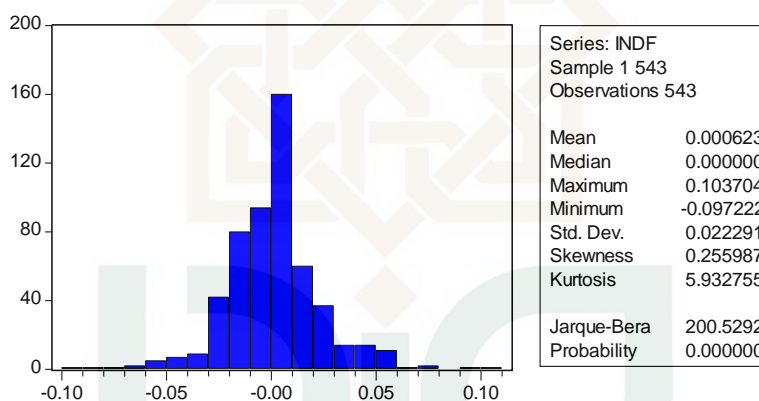
#### 6. Indofood CBP Sukses Makmur Tbk. (ICBP)



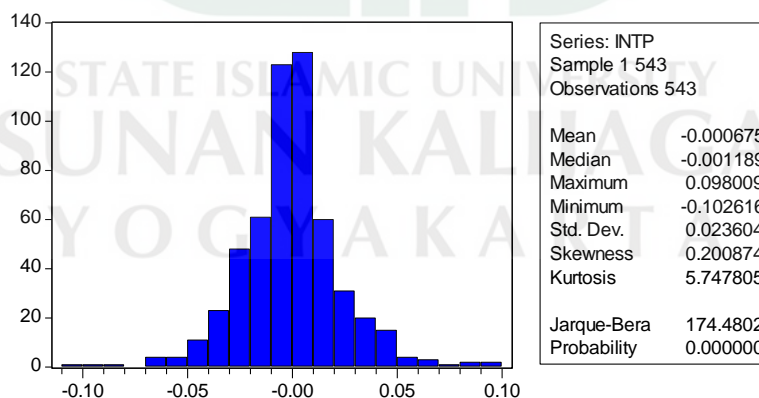
### 7. Vale Indonesia Tbk. (INCO)



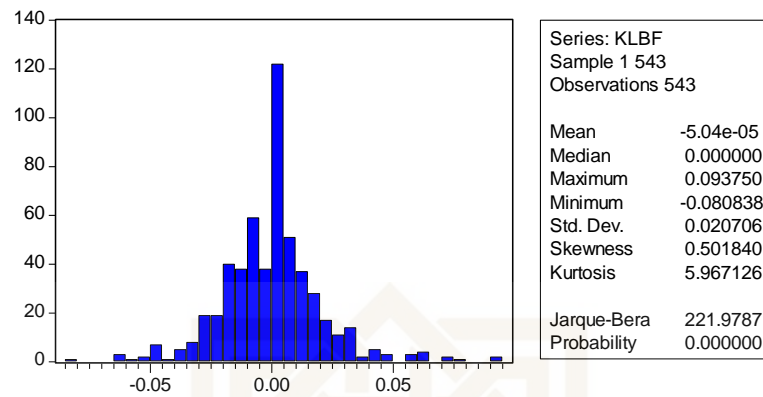
### 8. Indofood Sukses Makmur Tbk. (INDF)



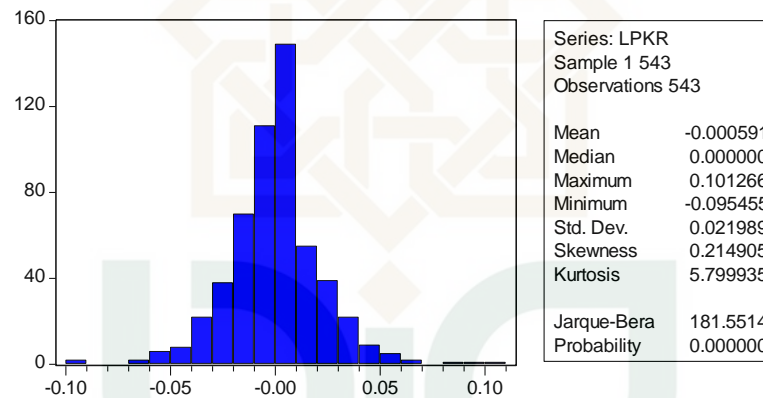
### 9. Indocement Tunggak Prakasa Tbk. (INTP)



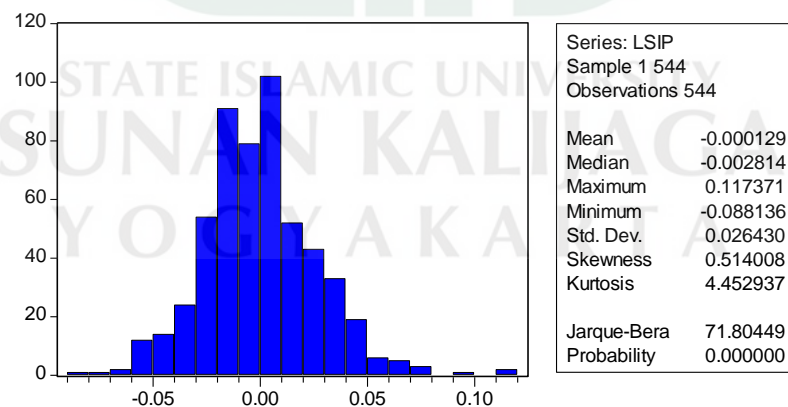
### 10. Kalbe Farma Tbk. (KLBF)



### 11. Lippo Karawaci Tbk. (LPKR)

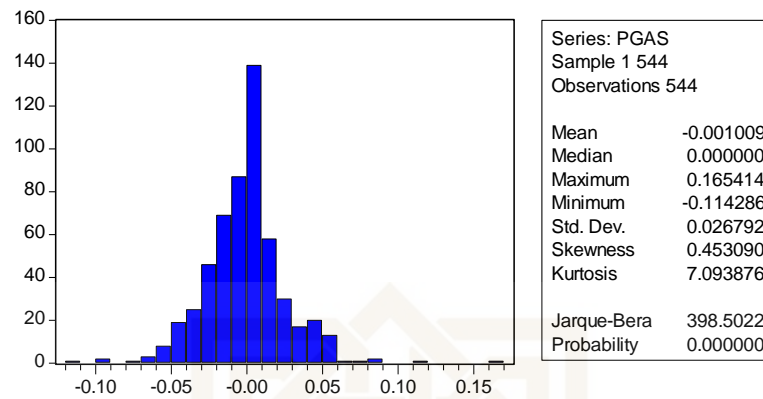


### 12. PP Londo Sumatra Indonesia Tbk. (LSIP)

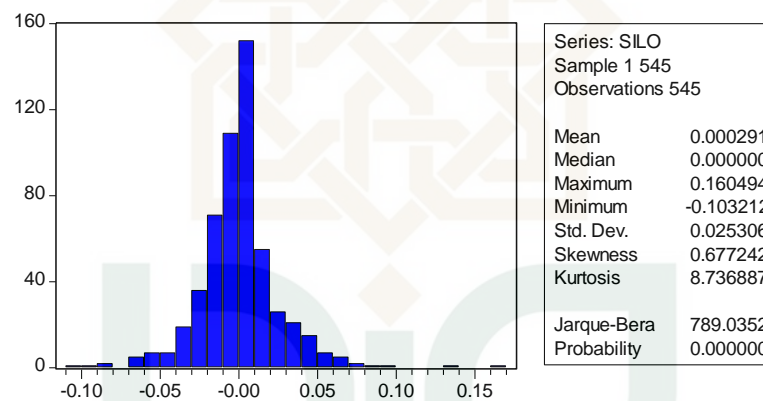




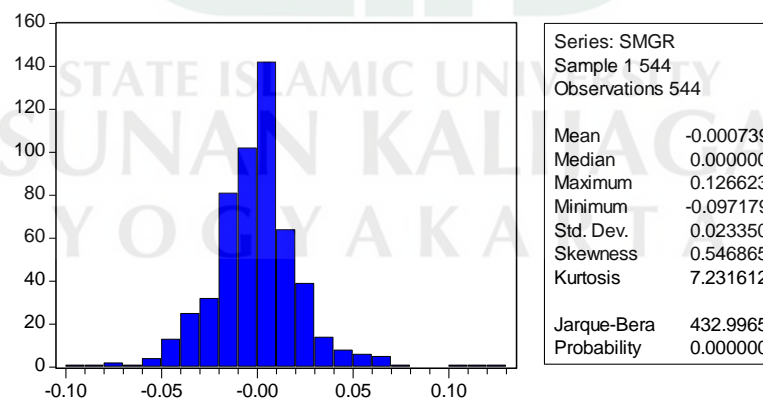
### 13. Perusahaan Gas Negara (Persero) Tbk. (PGAS)



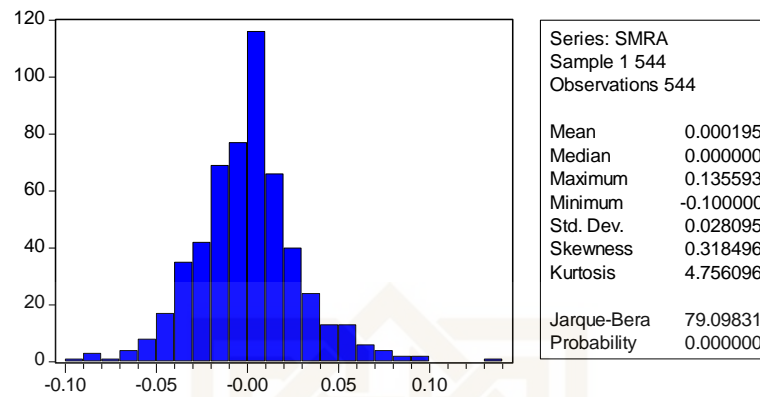
### 14. Siloam International Hospital Tbk. (SILO)



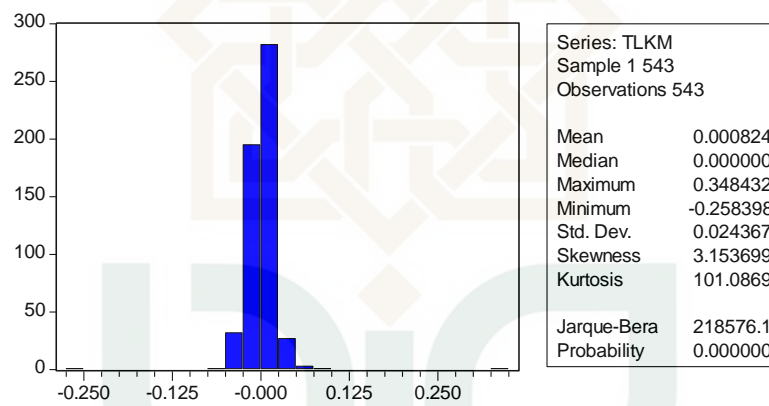
### 15. Semen Indonesia (Persero) Tbk. (SMGR)



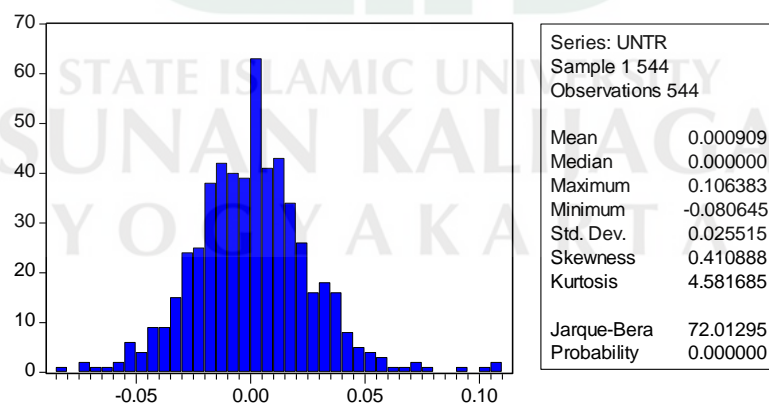
### 16. Summarecon Agung Tbk. (SMRA)



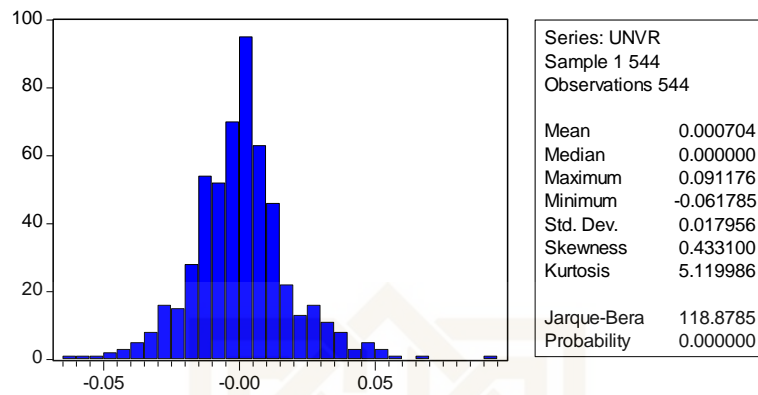
### 17. Telekomunikasi Indonesia (Persero) Tbk (TLKM)



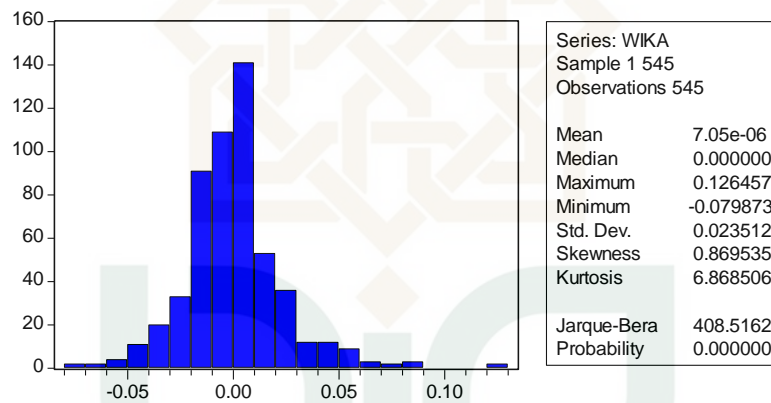
### 18. United Tractors Tbk. (UNTR)



### 19. Unilever Indonesia Tbk. (UNVR)



### 20. Wijaya Karya (Persero) Tbk (WIKA)



## Lampiran 4

### Estimasi Parameter *Generalized Pareto Distribution* dengan MATLAB

#### INPUT M-File

```

function res=gpd(data,threshold,nextremes,information),
%Fits a generalized Pareto model to excesses over a high threshold
%
%      USAGE: res=gpd(data,threshold,nextremes,information)
%
%!Either threshold or nextremes should be defined. The undefined
one should be entered as '[]'
%
%      data: Data vector
%      threshold: Excesses over this value will be fitted a model
%      nextremes: Implies a threshold value that number of
observations remaining above is nextremes
%information: Default is 'observed'. Can be entered as 'expected'
also. Determines whether
%      standard errors will be calculated with observed
or expected information
%
%      res: Fitted distribution
%
%      res.par_ests: Estimated parameters. 1X2 vector:
%                                     1st
element: xi
%                                     2nd
element: beta
%      res.funval: Value of the negative log likelihood
%      res.terminated: Termination condition. 1 if
successfully terminated
%      res.details: Details of the nonlinear minimization
process of the negative
%      likelihood
%      res.varcov: Variance-covariance matrix of the
parameters

```

```

%           res.par_ses: Standard deviations of the parameters
of the distribution
%           res.data: Elements that are exceeding the
threshold.

warningoff
n=length(data);
if (isempty(threshold)&isempty(nextremes))
disp('Enter either a threshold or the number of upper extremes')
return
end
if (~isempty(threshold)&~isempty(nextremes))
disp('Enter Either a threshold or the number of upper extremes')
return
end

if (~isempty(nextremes))
threshold=findthresh(data,nextremes);
end
if nargin<4,
information='observed';
end

exceedances=data(data>threshold);
excess=exceedances-threshold;
xbar=mean(excess);
s2=var(excess);
% xi0=-0.5*xbar*((xbar^2)/s2)-1);
xi0=-0.5*((xbar^2)/s2)-1); % Correction by Andrea Colombo May
9, 2005
beta0=0.5*xbar*((xbar^2)/s2)+1);

theta=[xi0,beta0];

opts=optimset('MaxFunEvals',5000,'MaxIter',1000,'TolX',1e-
6,'TolFun',1e-6,'Display','off');

```

```

xi=theta(1);
beta=theta(2);
cond1 = beta <= 0;
cond2 = ((xi <= 0) & (max(excess) > ( - beta/xi)));
if (cond1 | cond2),
theta(1)=1;
theta(2)=1;
end
[res.par_est, res.funval, res.terminated, res.details] =
fminsearch('negloglikgpd', theta, opts, excess);
[res.par_est, res.funval, res.terminated, res.details] =
fminunc('negloglikgpd', res.par_est, opts, excess);
if strcmp(information, 'observed'),
res.varcov=hessigpd('negloglikgpd', res.par_est, excess);
res.par_ses=sqrt(diag(res.varcov))';
elseif strcmp(information, 'expected'),
one = (1 + res.par_est(1))^2/length(excess);
two = (2 * (1 + res.par_est(1)) *
res.par_est(2)^2)/length(excess);
cov = - ((1 + res.par_est(1)) *
res.par_est(2))/length(excess);
res.varcov = [one, cov; cov, two];
res.par_ses=sqrt(diag(res.varcov))';
else

disp('WARNING 4th input should be either observed or expected');
return
end

res.threshold=threshold;
res.data=exceedances;
res.p_less_thresh=1-length(excess)/n;

warning on

#nama_data#
data

```

```

threshold=#initial value#
nextremes=[]
information=[]
res=gpd(data,threshold,nextremes,information)

```

## OUTPUT

### a. AALI

```

WARNING 4th input should be either observed or expected
res =
par_ests: [-0.0753 0.0246]
funval: -152.8143
terminated: -2
details: [1x1 struct]

```

### b. ADRO

```

WARNING 4th input should be either observed or expected
res =
par_ests: [-0.0182 0.0241]
funval: -150.9397
terminated: -2
details: [1x1 struct]

```

### c. AKRA

```

WARNING 4th input should be either observed or expected
res =
par_ests: [-0.1281 0.0153]
funval: -138.9895
terminated: -2
details: [1x1 struct]

```

### d. ASII

```

WARNING 4th input should be either observed or expected
res =
par_ests: [0.2371 0.0139]
funval: -167.1111
terminated: -2
details: [1x1 struct]

```

**e. BSDE**

```
WARNING 4th input should be either observed or expected
res =
par_est: [-0.0027 0.0153]
funval: -175.1149
terminated: -2
details: [1x1 struct]
```

**f. ICBP**

```
WARNING 4th input should be either observed or expected
res =
par_est: [0.1790 0.0127]
funval: -175.4491
terminated: -2
details: [1x1 struct]
```

**g. INCO**

```
WARNING 4th input should be either observed or expected
res =
par_est: [-0.1436 0.0317]
funval: -142.6835
terminated: -2
details: [1x1 struct]
```

**h. INDF**

```
WARNING 4th input should be either observed or expected
res =
par_est: [-0.1088 0.0195]
funval: -167.5267
terminated: -2
details: [1x1 struct]
```

**i. INTP**

```
WARNING 4th input should be either observed or expected
res =
par_est: [-0.0058 0.0171]
funval: -169.0264
terminated: -2
details: [1x1 struct]
```



**j. KLBF**

```
WARNING 4th input should be either observed or expected
res =
par_ests: [-0.0188 0.0182]
funval: -166.2873
terminated: -2
details: [1x1 struct]
```

**k. LPKR**

```
WARNING 4th input should be either observed or expected
res =
par_ests: [0.1082 0.0133]
funval: -176.7507
terminated: -2
details: [1x1 struct]
```

**l. LSIP**

```
WARNING 4th input should be either observed or expected
res =
par_ests: [0.0487 0.0164]
funval: -168.4851
terminated: -2
details: [1x1 struct]
```

**m. PGAS**

```
WARNING 4th input should be either observed or expected
res =
par_ests: [0.0295 0.0196]
funval: -159.5561
terminated: -2
details: [1x1 struct]
```

**n. SILO**

```
WARNING 4th input should be either observed or expected
res =
par_ests: [0.0502 0.0208]
funval: -155.2029
terminated: -2
details: [1x1 struct]
```

**o. SMGR**

```
WARNING 4th input should be either observed or expected
res =
par_ests: [0.0622 0.0191]
funval: -159.2045
terminated: -2
details: [1x1 struct]
```

**p. SMRA**

```
WARNING 4th input should be either observed or expected
res =
par_ests: [-0.0357 0.0202]
funval: -161.5442
terminated: -2
details: [1x1 struct]
```

**q. TLKM**

```
WARNING 4th input should be either observed or expected
res =
par_ests: [0.3481 0.0099]
funval: -179.4288
terminated: -2
details: [1x1 struct]
```

**r. UNTR**

```
WARNING 4th input should be either observed or expected
res =
par_ests: [0.1866 0.0135]
funval: -171.4300
terminated: -2
details: [1x1 struct]
```

**s. UNVR**

```
WARNING 4th input should be either observed or expected
res =
par_ests: [-0.0789 0.0148]
funval: -180.9036
terminated: -2
details: [1x1 struct]
```

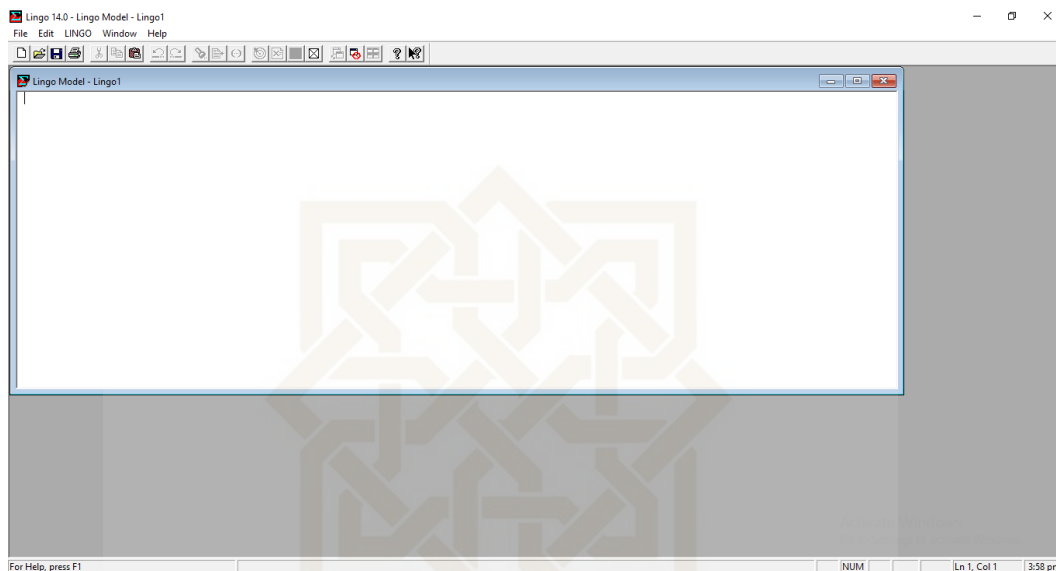
**t. WIKA**

```
WARNING 4th input should be either observed or expected  
res =  
par_est: [-0.0163 0.0223]  
funval: -154.9477  
terminated: -2  
details: [1x1 struct]
```



## Lampiran 5

### Optimasi *Lexicographic Goal Programming* dengan LINGO 14.0



#### 1. Portofolio I

##### INPUT

Min=DA1+DB1+DB2+DA3;

$x_1+x_2+x_3+x_4+x_5+x_6+x_7+x_8+x_9+x_{10}+x_{11}+x_{12}+x_{13}+x_{14}+x_{15}+x_{16}+x_{17}+x_{18}+x_{19}+x_{20}$ -  
DA1+DB1=1; !proporsi;

$-0.000261*x_1+0.001358*x_2+0.001039*x_3+0.000575*x_4+0.000297*x_5+0.000906*x_6-$   
 $0.000124*x_7+0.000623*x_8-0.000675*x_9-5.04E-05*x_{10}-0.000591*x_{11}-0.000129*x_{12}-$   
 $0.001009*x_{13}+0.000291*x_{14}-$   
 $0.000739*x_{15}+0.000195*x_{16}+0.000824*x_{17}+0.000909*x_{18}+0.000704*x_{19}+7.05E-$   
 $06*x_{20}-DA_2+DB_2=0.0012$ ; !return;

$0.04493*x_1+0.05682*x_2+0.04155*x_3+0.03777*x_4+0.03989*x_5+0.03443*x_6+0.06683*x_7+$   
 $0.0398*x_8+0.03965*x_9+0.03492*x_{10}+0.03524*x_{11}+0.04581*x_{12}+0.04403*x_{13}+0.04$   
 $301*x_{14}-$   
 $0.03687*x_{15}+0.04843*x_{16}+0.02567*x_{17}+0.04199*x_{18}+0.03236*x_{19}+0.04108*x_{20}-$   
DA3+DB3=0.066; !risiko;

DA1>=0;

DB1>=0;

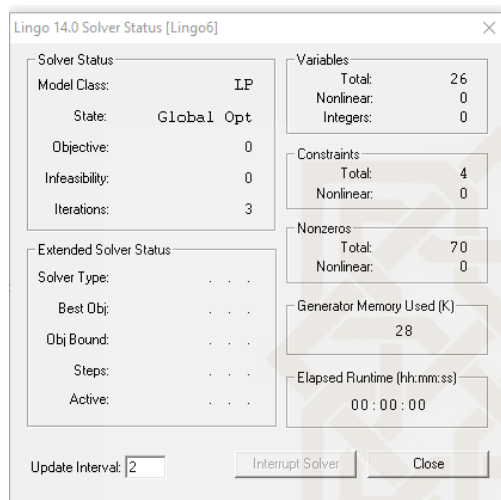
DA2>=0;

DB2>=0;

DA3 >= 0;

DB3 >= 0;

## OUTPUT



Global optimal solution found.  
 Objective value: 0.000000  
 Infeasibilities: 0.000000  
 Total solver iterations: 3  
 Elapsed runtime seconds: 0.12

Model Class: LP

Total variables: 26  
 Nonlinear variables: 0  
 Integer variables: 0

Total constraints: 10  
 Nonlinear constraints: 0

Total nonzeros: 76  
 Nonlinear nonzeros: 0

Variable	Value	Reduced Cost
DA1	0.000000	1.000000
DB1	0.000000	1.000000
DB2	0.000000	1.000000
DA3	0.000000	1.000000
X1	0.000000	0.000000
X2	0.663697	0.000000
X3	0.000000	0.000000
X4	0.000000	0.000000
X5	0.000000	0.000000
X6	0.000000	0.000000
X7	0.000000	0.000000
X8	0.000000	0.000000

X9	0.000000	0.000000
X10	0.000000	0.000000
X11	0.000000	0.000000
X12	0.000000	0.000000
X13	0.000000	0.000000
X14	0.000000	0.000000
X15	0.000000	0.000000
X16	0.000000	0.000000
X17	0.000000	0.000000
X18	0.336303	0.000000
X19	0.000000	0.000000
X20	0.000000	0.000000
DA2	0.000000	0.000000
DB3	0.000000	0.000000

Row	Slack or Surplus	Dual Price
1	0.000000	-1.000000
2	0.000000	0.000000
3	0.000000	0.000000
4	0.000000	0.000000
5	0.000000	0.000000
6	0.000000	0.000000
7	0.000000	0.000000
8	0.000000	0.000000
9	0.000000	0.000000
10	0.000000	0.000000

## 2. Portofolio II

### INPUT

Min=DA1+DB1+DA2;

$x_1+x_2+x_3+x_4+x_5+x_6+x_7+x_8+x_9+x_{10}+x_{11}+x_{12}+x_{13}+x_{14}+x_{15}+x_{16}+x_{17}+x_{18}+x_{19}+x_{20}$ -

DA1+DB1=1; **!proporsi;**

$0.04493x_1+0.05682x_2+0.04155x_3+0.03777x_4+0.03989x_5+0.03443x_6+0.06683x_7+0.0398x_8+0.03965x_9+0.03492x_{10}+0.03524x_{11}+0.04581x_{12}+0.04403x_{13}+0.04301x_{14}$ -

$0.03687x_{15}+0.04843x_{16}+0.02567x_{17}+0.04199x_{18}+0.03236x_{19}+0.04108x_{20}$ -

DA2+DB2=0.0248; **!risiko;**

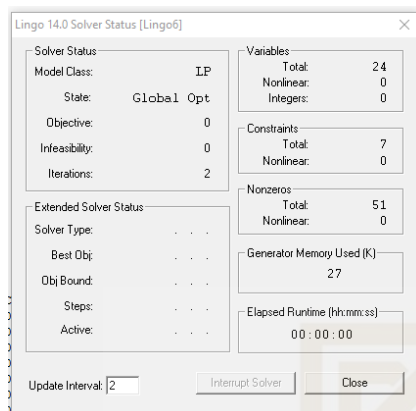
DA1 $\geq$ 0;

DB1 $\geq$ 0;

DA2 $\geq$ 0;

DB2 $\geq$ 0;

## OUTPUT



Global optimal solution found.

Objective value: 0.000000  
 Infeasibilities: 0.000000  
 Total solver iterations: 2  
 Elapsed runtime seconds: 0.05

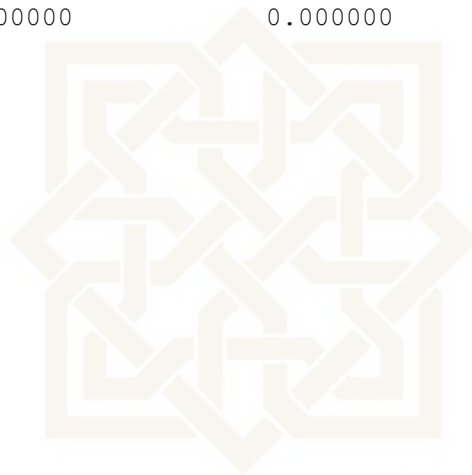
Model Class: LP

Total variables: 24  
 Nonlinear variables: 0  
 Integer variables: 0  
 Total constraints: 7  
 Nonlinear constraints: 0  
 Total nonzeros: 51  
 Nonlinear nonzeros: 0

Variable	Value	Reduced Cost
DA1	0.000000	1.000000
DB1	0.000000	1.000000
DA2	0.000000	1.000000
X1	0.000000	0.000000
X2	0.000000	0.000000
X3	0.000000	0.000000
X4	0.000000	0.000000
X5	0.000000	0.000000
X6	0.000000	0.000000
X7	0.000000	0.000000
X8	0.000000	0.000000
X9	0.000000	0.000000
X10	0.000000	0.000000
X11	0.000000	0.000000
X12	0.000000	0.000000
X13	0.000000	0.000000
X14	0.000000	0.000000
X15	0.1391110E-01	0.000000
X16	0.000000	0.000000
X17	0.9860889	0.000000
X18	0.000000	0.000000

X19	0.000000	0.000000
X20	0.000000	0.000000
DB2	0.000000	0.000000

Row	Slack or Surplus	Dual Price
1	0.000000	-1.000000
2	0.000000	0.000000
3	0.000000	0.000000
4	0.000000	0.000000
5	0.000000	0.000000
6	0.000000	0.000000
7	0.000000	0.000000



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SUNAN KALIJAGA  
YOGYAKARTA



*Lampiran 6***Tabel Chi-Kudrat**

<b>db</b>	<b>0.25</b>	<b>0.2</b>	<b>0.15</b>	<b>0.1</b>	<b>0.05</b>	<b>0.025</b>	<b>0.02</b>	<b>0.01</b>
<b>1</b>	1.3233	1.6424	2.0723	2.7055	3.8415	5.0239	5.4119	6.6349
<b>2</b>	2.7726	3.2189	3.7942	4.6052	5.9915	7.3778	7.824	9.2103
<b>3</b>	4.1083	4.6416	5.317	6.2514	7.8147	9.3484	9.8374	11.345
<b>4</b>	5.3853	5.9886	6.7449	7.7794	9.4877	11.143	11.668	13.277
<b>5</b>	6.6257	7.2893	8.1152	9.2364	11.07	12.833	13.388	15.086
<b>6</b>	7.8408	8.5581	9.4461	10.645	12.592	14.449	15.033	16.812
<b>7</b>	9.0371	9.8032	10.748	12.017	14.067	16.013	16.622	18.475
<b>8</b>	10.219	11.03	12.027	13.362	15.507	17.535	18.168	20.09
<b>9</b>	11.389	12.242	13.288	14.648	16.919	19.023	19.679	21.666
<b>10</b>	12.549	13.442	14.543	15.987	18.307	20.482	21.161	23.209
<b>11</b>	13.701	14.631	15.767	17.275	19.675	21.92	22.618	24.725
<b>12</b>	14.845	15.812	16.989	18.549	21.026	23.337	24.054	26.217
<b>13</b>	15.984	16.985	18.202	19.812	22.362	24.736	25.472	27.688
<b>14</b>	17.117	18.151	19.406	21.064	23.685	26.119	26.873	29.141
<b>15</b>	18.245	19.311	20.603	22.307	24.996	27.488	28.259	30.578
<b>16</b>	19.369	20.465	21.793	23.542	26.296	28.845	29.633	32
<b>17</b>	20.489	21.615	22.977	24.769	27.587	30.191	30.995	33.409
<b>18</b>	21.605	22.76	24.155	25.989	28.869	31.526	32.346	34.805
<b>19</b>	22.718	23.9	25.329	27.204	30.144	32.852	33.687	36.191
<b>20</b>	23.828	25.038	26.498	28.412	31.41	34.17	35.02	37.566
<b>21</b>	24.241	29.171	27.662	29.615	32.671	35.479	36.343	38.932
<b>22</b>	26.039	27.301	28.822	30.813	33.924	36.781	37.659	40.289
<b>23</b>	27.141	28.429	29.979	32.007	35.172	38.076	38.968	41.638
<b>24</b>	28.241	29.553	31.132	33.196	36.415	39.364	40.27	42.98
<b>25</b>	29.339	30.675	32.282	34.382	37.652	40.646	41.566	44.314
<b>26</b>	30.435	31.795	33.429	35.563	38.885	41.923	42.856	45.642
<b>27</b>	31.528	32.912	34.547	36.741	40.113	43.195	44.14	46.963
<b>28</b>	32.62	34.027	35.715	37.916	41.337	44.461	45.419	48.278
<b>29</b>	33.711	35.359	36.854	39.087	42.557	45.722	46.693	49.588
<b>30</b>	34.8	36.25	37.99	40.256	43.773	46.979	47.962	50.892
<b>31</b>	35.887	37.359	39.124	41.422	44.985	48.232	49.226	52.191
<b>32</b>	36.973	38.466	40.256	42.585	46.194	49.48	50.487	53.486
<b>33</b>	38.058	39.572	41.386	43.745	47.4	50.725	51.743	54.776
<b>34</b>	39.141	40.676	42.514	44.903	48.602	51.966	52.995	56.061
<b>35</b>	40.223	41.778	43.64	46.059	49.802	53.203	54.224	57.342
<b>36</b>	41.304	42.479	44.764	47.212	50.998	54.437	55.489	58.619
<b>37</b>	42.383	43.978	45.886	48.363	52.192	55.668	56.73	59.893
<b>38</b>	43.462	45.076	47.007	49.513	53.384	56.896	57.969	61.162
<b>39</b>	44.539	46.173	48.126	50.66	54.572	58.12	59.204	62.248

<b>db</b>	<b>0.25</b>	<b>0.2</b>	<b>0.15</b>	<b>0.1</b>	<b>0.05</b>	<b>0.025</b>	<b>0.02</b>	<b>0.01</b>
<b>40</b>	45.616	47.269	49.244	51.805	59.342	60.436	63.436	63.691
<b>41</b>	46.692	48.363	50.36	52.949	56.942	60.561	61.665	64.95
<b>42</b>	47.766	49.456	51.457	54.09	58.124	61.777	62.892	66.206
<b>43</b>	48.84	50.548	52.588	55.23	59.304	62.99	64.116	67.459
<b>44</b>	49.913	51.639	53.7	56.369	60.481	64.201	65.337	68.71
<b>45</b>	50.985	52.729	54.81	57.505	61.656	65.41	66.555	69.957
<b>46</b>	52.056	53.818	55.92	58.641	62.83	66.617	67.771	71.201
<b>47</b>	53.127	54.906	57.028	59.774	64.001	67.821	68.985	72.443
<b>48</b>	54.196	55.993	58.135	60.907	65.171	69.023	70.197	73.683
<b>49</b>	55.265	57.079	59.241	62.038	66.339	70.222	71.406	74.919
<b>50</b>	56.334	58.164	60.346	63.167	67.505	71.42	72.613	76.154
<b>51</b>	57.401	59.248	61.45	64.295	68.669	72.616	73.818	77.386
<b>52</b>	58.468	60.332	62.553	65.422	69.832	73.81	75.021	78.616
<b>53</b>	59.534	61.414	63.654	66.548	70.993	75.002	76.223	79.843
<b>54</b>	60.6	62.496	64.755	67.673	72.153	76.192	77.442	81.069
<b>55</b>	61.665	63.577	65.855	68.796	73.311	77.38	78.619	82.292
<b>56</b>	62.729	64.658	66.954	69.919	74.468	74.567	79.815	83.513
<b>57</b>	63.793	65.737	68.052	71.04	75.624	79.752	81.009	84.733
<b>58</b>	64.857	66.816	69.149	72.16	76.778	80.936	82.201	85.95
<b>59</b>	65.919	67.894	70.246	73.279	77.931	82.117	83.391	87.166
<b>60</b>	66.981	68.972	71.341	74.397	79.082	82.298	84.58	88.379
<b>61</b>	68.043	70.049	72.436	75.514	80.232	84.476	85.767	89.591
<b>62</b>	69.104	71.125	73.53	76.63	81.381	85.654	86.953	90.802
<b>63</b>	70.165	72.201	74.623	77.745	82.529	86.83	88.137	91.01
<b>64</b>	71.225	73.276	75.715	78.86	83.675	88.004	89.32	93.217
<b>65</b>	72.285	74.351	76.807	79.973	84.821	89.177	90.501	94.422
<b>66</b>	73.344	75.424	77.898	81.085	85.965	90.349	91.681	95.626
<b>67</b>	74.403	76.498	78.988	82.197	87.108	91.519	92.86	96.828
<b>68</b>	75.461	77.571	80.087	83.308	88.25	92.689	94.037	98.028
<b>69</b>	76.519	78.643	81.167	84.418	89.391	93.856	95.213	99.228
<b>70</b>	77.577	79.715	82.255	85.527	90.531	95.023	96.388	100.43
<b>71</b>	78.634	80.786	83.343	86.635	91.67	96.189	97.561	101.62
<b>72</b>	79.69	81.857	84.43	87.743	92.808	97.353	98.733	102.82
<b>73</b>	80.747	82.927	85.517	88.85	93.945	98.516	99.904	104.01
<b>74</b>	81.803	83.997	86.602	89.956	95.081	99.678	101.07	105.2
<b>75</b>	82.858	85.066	87.688	91.061	96.217	100.84	102.24	106.39
<b>76</b>	83.913	86.135	88.772	92.166	97.351	102	103.41	107.58
<b>77</b>	84.968	87.203	89.857	93.27	98.484	103.16	104.58	108.77
<b>78</b>	86.022	88.271	90.94	94.374	99.617	104.32	105.74	109.96
<b>79</b>	87.077	89.338	92.023	95.476	100.75	105.47	106.91	111.14
<b>80</b>	88.13	90.405	93.106	96.578	101.88	106.63	108.07	112.33
<b>81</b>	89.184	91.472	94.188	97.68	103.01	107.78	109.23	113.51

<b>db</b>	<b>0.25</b>	<b>0.2</b>	<b>0.15</b>	<b>0.1</b>	<b>0.05</b>	<b>0.025</b>	<b>0.02</b>	<b>0.01</b>
<b>82</b>	90.237	92.538	95.269	98.78	104.14	108.94	110.39	114.69
<b>83</b>	91.289	93.604	96.35	99.88	105.27	110.09	111.55	115.88
<b>84</b>	92.342	94.669	97.431	100.98	106.39	111.24	112.71	117.06
<b>85</b>	93.394	95.734	98.511	102.08	107.52	112.39	113.87	118.24
<b>86</b>	94.446	96.799	99.59	103.18	108.65	113.54	115.03	119.41
<b>87</b>	95.497	97.863	100.67	104.28	109.77	114.69	116.18	120.59
<b>88</b>	96.548	98.927	101.75	105.37	110.9	115.84	117.34	121.77
<b>89</b>	97.599	99.991	102.83	106.47	112.02	116.99	118.49	122.94
<b>90</b>	98.65	101.05	103.9	107.57	113.15	118.14	119.65	124.12
<b>91</b>	99.7	102.12	104.98	108.66	114.27	119.28	120.8	125.29
<b>92</b>	100.75	103.18	106.06	109.76	115.39	120.43	121.95	126.46
<b>93</b>	101.8	104.24	107.13	110.85	116.51	121.57	123.1	127.63
<b>94</b>	102.85	105.3	108.21	111.94	117.63	122.72	124.26	128.8
<b>95</b>	103.9	106.36	109.29	113.04	118.75	123.86	125.4	129.97
<b>96</b>	104.95	107.43	110.36	114.13	119.87	125	126.55	131.14
<b>97</b>	106	108.49	111.44	115.22	120.99	126.14	127.7	132.31
<b>98</b>	107.05	109.55	112.51	116.32	122.11	127.28	128.85	133.48
<b>99</b>	108.09	110.61	113.59	117.41	123.23	128.42	130	134.64
<b>100</b>	109.14	111.67	114.66	118.5	124.34	129.56	131.14	135.81
<b>101</b>	110.19	112.73	115.73	119.59	125.46	130.7	132.29	136.97
<b>102</b>	111.24	113.79	116.81	120.68	126.57	131.84	133.43	138.13
<b>103</b>	112.28	114.84	117.88	121.77	127.69	132.97	134.57	139.3
<b>104</b>	113.33	115.9	118.95	122.86	128.8	134.11	135.72	140.46
<b>105</b>	114.38	116.96	120.02	123.95	129.92	135.25	136.86	141.62
<b>106</b>	115.42	118.02	121.09	125.04	131.03	136.38	138	142.78
<b>107</b>	116.47	119.08	122.16	126.12	132.14	137.52	139.14	143.94
<b>108</b>	117.52	120.14	123.24	127.21	133.26	138.65	140.28	145.1
<b>109</b>	118.56	121.19	124.31	128.3	134.37	139.78	141.42	146.26
<b>110</b>	119.61	122.25	125.38	129.39	135.48	140.92	142.56	147.41
<b>111</b>	120.65	123.31	126.45	130.47	136.59	142.05	143.7	148.57
<b>112</b>	121.7	124.36	127.52	131.56	137.7	143.18	144.84	149.73
<b>113</b>	122.74	125.42	128.59	132.64	138.81	144.31	145.97	150.88
<b>114</b>	123.79	126.48	129.65	133.73	139.92	145.44	147.11	152.04
<b>115</b>	124.83	127.53	130.72	134.81	141.03	146.57	148.25	153.19
<b>116</b>	125.88	128.59	131.79	135.9	142.14	147.7	149.38	154.34
<b>117</b>	126.92	129.64	132.86	136.98	143.25	148.83	150.52	155.5
<b>118</b>	127.97	130.7	133.93	138.07	144.35	149.96	151.65	156.65
<b>119</b>	129.01	131.75	134.99	139.15	145.46	151.08	152.79	157.8
<b>120</b>	130.05	132.81	136.06	140.23	146.57	152.21	153.92	158.95
<b>121</b>	131.1	133.86	137.13	141.32	147.67	153.34	155.05	160.1
<b>122</b>	132.14	134.91	138.2	142.2	148.78	154.46	156.18	161.25
<b>123</b>	133.18	135.97	139.26	143.48	149.88	155.59	157.31	161.4

<b>db</b>	<b>0.25</b>	<b>0.2</b>	<b>0.15</b>	<b>0.1</b>	<b>0.05</b>	<b>0.025</b>	<b>0.02</b>	<b>0.01</b>
<b>124</b>	134.23	137.02	140.33	144.56	150.99	156.71	158.44	163.55
<b>125</b>	135.27	138.08	141.39	145.64	152.09	157.84	159.58	164.69
<b>126</b>	136.31	139.13	142.46	146.72	153.2	158.96	160.71	165.84
<b>127</b>	137.36	140.18	143.52	147.8	154.3	160.09	161.83	166.99
<b>128</b>	138.4	141.24	144.59	148.89	155.4	161.21	162.96	168.13
<b>129</b>	139.44	142.29	145.65	149.97	156.51	162.33	164.09	169.28
<b>130</b>	140.48	143.34	146.72	151.05	157.61	163.45	165.22	170.42
<b>131</b>	141.52	144.39	147.78	152.12	158.71	164.57	166.35	171.57
<b>132</b>	142.57	145.55	148.85	153.2	159.81	165.7	167.47	172.71
<b>133</b>	143.61	146.5	149.91	154.28	160.91	166.82	168.6	173.85
<b>134</b>	144.65	147.55	150.98	155.36	162.02	167.94	169.73	175
<b>135</b>	145.69	148.6	152.04	156.44	163.12	169.06	170.85	176.14
<b>136</b>	146.73	149.65	153.1	157.52	164.22	170.18	171.98	177.28
<b>137</b>	147.77	150.7	154.16	158.6	165.32	171.29	173.1	178.42
<b>138</b>	148.81	151.75	155.23	159.67	166.42	171.41	174.22	179.56
<b>139</b>	149.85	153.8	156.29	160.75	167.51	173.53	176.35	180.7
<b>140</b>	150.89	153.85	157.35	161.83	168.61	174.65	176.47	181.84
<b>141</b>	151.93	154.9	158.41	162.9	169.71	175.76	177.59	182.98
<b>142</b>	152.97	155.95	159.48	163.98	170.81	176.88	178.72	184.12
<b>143</b>	154.01	157	160.54	165.06	171.91	178	179.84	185.26
<b>144</b>	155.05	158.05	161.6	166.13	173	179.11	180.96	186.39
<b>145</b>	156.09	159.1	162.66	167.21	174.1	180.23	182.08	187.53
<b>146</b>	157.13	160.15	163.72	168.28	175.2	181.34	183.2	188.67
<b>147</b>	185.17	161.2	164.78	169.36	176.29	182.46	184.32	189.8
<b>148</b>	159.21	162.25	165.84	170.43	177.39	183.57	185.44	190.94
<b>149</b>	160.25	163.3	166.9	171.49	178.49	184.69	186.56	192.07
<b>150</b>	161.29	165.35	167.96	172.58	179.58	185.8	187.68	193.21
<b>151</b>	162.33	165.4	169.02	173.66	180.68	186.91	188.8	194.34
<b>152</b>	163.37	166.45	170.08	174.73	181.77	188.03	189.92	195.48
<b>153</b>	164.41	167.49	171.14	175.8	182.86	189.14	191.03	196.61
<b>154</b>	165.45	168.54	172.2	176.88	183.96	190.25	192.15	197.74
<b>155</b>	166.48	169.59	173.26	177.95	185.05	191.36	193.27	198.87
<b>156</b>	167.52	170.64	174.32	179.02	186.15	192.47	194.38	200.01
<b>157</b>	168.56	171.38	175.38	180.09	187.24	193.58	195.5	201.14
<b>158</b>	169.6	172.73	176.44	181.17	188.33	194.7	196.62	202.27
<b>159</b>	170.64	173.78	177.49	182.24	189.42	195.81	197.73	203.4
<b>160</b>	171.68	174.83	178.55	183.31	190.52	196.92	198.85	204.53
<b>161</b>	172.71	175.88	179.61	184.38	191.61	198.02	199.96	204.53
<b>162</b>	173.75	176.92	180.67	185.45	192.7	199.13	201.08	206.79
<b>163</b>	174.79	177.97	181.73	186.52	193.79	200.24	202.19	207.92
<b>164</b>	175.83	179.02	182.78	187.6	194.88	201.35	203.3	209.05
<b>165</b>	176.86	180.06	183.84	188.67	195.97	202.46	204.42	210.18

<b>db</b>	<b>0.25</b>	<b>0.2</b>	<b>0.15</b>	<b>0.1</b>	<b>0.05</b>	<b>0.025</b>	<b>0.02</b>	<b>0.01</b>
<b>166</b>	177.9	181.11	184.9	189.74	197.06	203.57	205.53	211.3
<b>167</b>	178.94	182.15	185.95	190.81	198.15	204.67	206.64	22.43
<b>168</b>	179.97	183.2	187.01	191.88	199.24	205.78	207.75	213.56
<b>169</b>	181.01	184.25	188.07	192.95	200.33	206.89	208.87	214.69
<b>170</b>	182.05	185.29	189.12	194.02	201.42	208	209.98	215.81
<b>171</b>	183.08	186.34	190.18	195.09	202.51	209.1	211.09	216.94
<b>172</b>	184.12	187.38	191.24	196.16	203.6	210.21	212.2	218.06
<b>173</b>	185.16	188.43	192.29	197.23	204.69	211.31	213.31	219.19
<b>174</b>	186.19	189.47	193.35	198.29	205.78	212.42	214.42	220.31
<b>175</b>	187.23	190.52	194.4	199.36	206.87	213.52	215.53	221.44
<b>176</b>	188.27	191.56	195.46	200.43	207.95	214.63	216.64	222.56
<b>177</b>	189.3	192.61	196.61	201.5	209.04	215.73	217.75	223.69
<b>178</b>	190.34	193.65	197.57	202.57	210.13	216.84	218.86	224.81
<b>179</b>	191.37	194.7	198.62	203.64	211.22	217.94	219.97	225.93
<b>180</b>	192.41	195.74	199.68	204.7	212.3	219.04	221.08	227.06
<b>181</b>	193.44	196.79	200.73	205.77	213.39	220.15	222.19	228.18
<b>182</b>	194.48	197.83	201.79	206.86	214.48	221.25	223.29	229.3
<b>183</b>	195.52	198.88	202.84	207.91	215.56	222.35	224.4	230.42
<b>184</b>	196.55	199.92	203.9	208.97	216.65	223.46	225.51	231.54
<b>185</b>	197.59	200.96	204.95	210.04	217.73	224.56	226.62	231.67
<b>186</b>	198.62	202.01	206	211.11	218.82	225.66	227.72	233.79
<b>187</b>	199.66	203.05	207.06	212.91	219.91	226.76	198.15	234.91
<b>188</b>	200.69	204.1	208.11	213.24	220.99	227.86	229.93	236.03
<b>189</b>	201.73	205.14	209.17	214.31	222.08	228.96	231.04	237.15
<b>190</b>	202.76	206.18	210.22	215.37	223.161	230.06	232.15	238.27
<b>191</b>	203.79	207.23	211.27	216.44	224.24	231.16	233.25	239.39
<b>192</b>	204.83	208.27	212.32	217.5	225.33	232.27	234.36	240.5
<b>193</b>	205.86	209.31	213.38	218.57	226.41	233.37	235.46	241.62
<b>194</b>	206.9	210.35	214.43	219.63	227.5	234.46	236.57	242.74
<b>195</b>	207.93	211.4	215.48	220.7	228.58	235.56	237.67	243.86
<b>196</b>	208.97	212.44	216.54	221.76	229.66	236.66	238.77	244.98
<b>197</b>	210	213.48	217.59	222.83	230.75	237.76	239.88	246.09
<b>198</b>	211.03	214.52	218.64	223.89	231.83	238.86	240.98	247.21
<b>199</b>	212.07	215.57	219.69	224.96	232.91	239.96	242.08	248.33
<b>200</b>	213.1	216.61	220.74	226.02	233.99	241.06	243.19	249.45

## CURRICULUM VITAE

### A. Biodata Pribadi

Nama Lengkap : Ima Novianti  
Jenis Kelamin : Perempuan  
Tempat, Tanggal Lahir : Pati, 17 Desember 1995  
Alamat Asal : Gang Genjah No. 3 Ngentaksapen,  
Caturtunggal, Depok, Sleman  
Alamat Tinggal : Ds. Srikaton 06/ 03 Kec. Jaken, Kab. Pati  
Email : imanovi95@gmail.com  
No. HP : 081331086785



### B. Latar Belakang Pendidikan Formal

Jenjang	Nama Sekolah	Tahun
TK	TK Kartini, Srikaton, Jaken, Pati	2000 - 2001
SD	SD Negeri Srikaton 02, Jaken, Pati	2001 - 2007
SMP/ MTs	MTs Negeri Sumber, Rembang	2007 - 2010
SMA/ MA	MA Raudlatul Ulum, Trangkil, Pati	2010 - 2013
S1	UIN Sunan Kalijaga, Yogyakarta	2013 - 2017

### C. Latar Belakang Pendidikan Non Formal

2010 - 2013 : Pondok Pesantren Raudlatul Ulum, Trangkil, Pati

### D. Pengalaman Organisasi/ Kerja

1. Asisten Praktikum (2015 - 2016)
2. Asisten Tutorial (2016)
3. Tentor Bimbingan Belajar (2017)