# BAB V
# KESIMPULAN DAN SARAN

## 5.1 Kesimpulan

Setelah melakukan analisis terhadap hasil penelitian telah dijelaskan pada bab sebelumnya, maka dapat ditarik kesimpulan yaitu:

1. Indeks kinerja Sharpe, Treynor dan Jensen menunjukkan rata-rata dari ke-15 perusahaan sub sektor makanan dan minuman dari tahun 2018 sampai tahun 2022 selalu menunjukkan indeks kinerja bernilai negatif
2. Pengukuran kinerja portofolio dengan metode Sharpe, Treynor, maupun Jensen akan memiliki karakteristik angka indeks yang berbeda satu sama lain sehingga tidak dapat dibandingkan satu dengan lainnya secara logis sehingga diperlukan standarisasi ukuran kinerja yang dapat digunakan untuk membandingkan pengukuran kinerja portofolio yang menggunakan metode Sharpe, Treynor, maupun Jensen yaitu dengan transformasi *Z-score* (*Standardized*). Hasil dari transformasi *Z-score* menunjukkan bahwa indeks Sharpe menempatkan portofolio STTP (Siantar Top Tbk), yang terjadi pada tahun 2020 sebagai peringkat pertama. Sedangkan indeks Treynor menghasilkan portofolio DLTA (Delta Djakarta Tbk) yang terjadi di tahun 2021 akan menjadi rangking pertama. Indeks Jensen menghasilkan portofolio TBLA (Tunas Baru Lampung Tbk) yang terjadi di tahun 2020 akan menjadi rangking pertama.
3. Hasil pengujian perbedaan pengukuran kinerja portofolio menggunakan metode Sharpe, Treynor, maupun Jensen dengan uji *Kruskal Wallis* tidak menunjukkan adanya perbedaan yang signifikan dalam mengukur kinerja dengan

menggunakan metode Sharpe, Treynor, maupun Jensen. Sedangkan uji antar *treatment* terhadap ketiga metode juga tidak menunjukkan adanya perbedaan yang signifikan diantara ketiganya.

4. Pengukuran selisih *mean rank* maka metode Treynor adalah yang paling menunjukkan konsistensi terhadap ketidakbedaan antar ketiga pengukuran, karena Treynor memilik selisih *mean rank* yang paling rendah terhadap Sharpe maupun Jensen. Selisih antar *mean rank* ini ditunjukkan tidak ada yang melebihi dari nilai kritis yaitu sebesar 30,124

## 5.2 Saran

Sebagai harapan akan dilakukannya analisis lebih lanjut dengah hasil yang lebih baik, maka beberapa saran sebagai berikut:

1. Perhitungan kinerja portofolio dapat digunakan untuk menghitung reksa dana saham baik individu maupun sektoral dan juga dalam perhitungan reksa dana obligasi.
2. Analisis kinerja portofolio menggunakan data harian dalam perhitungan *return* portofolio.

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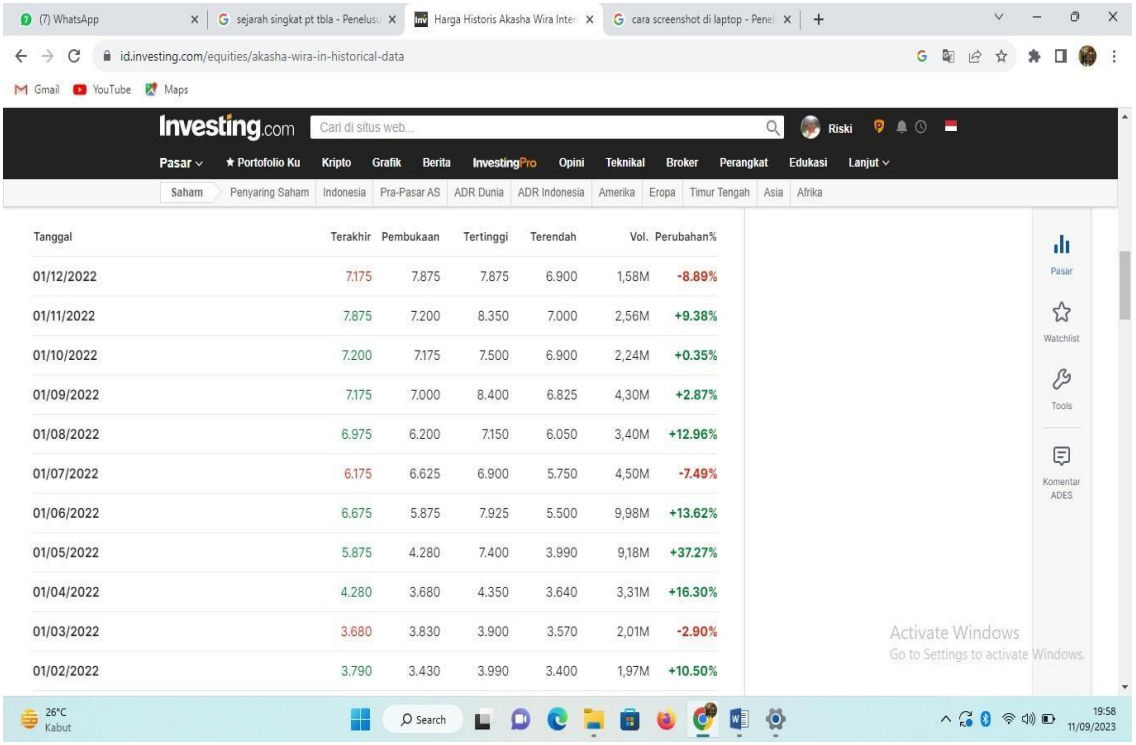
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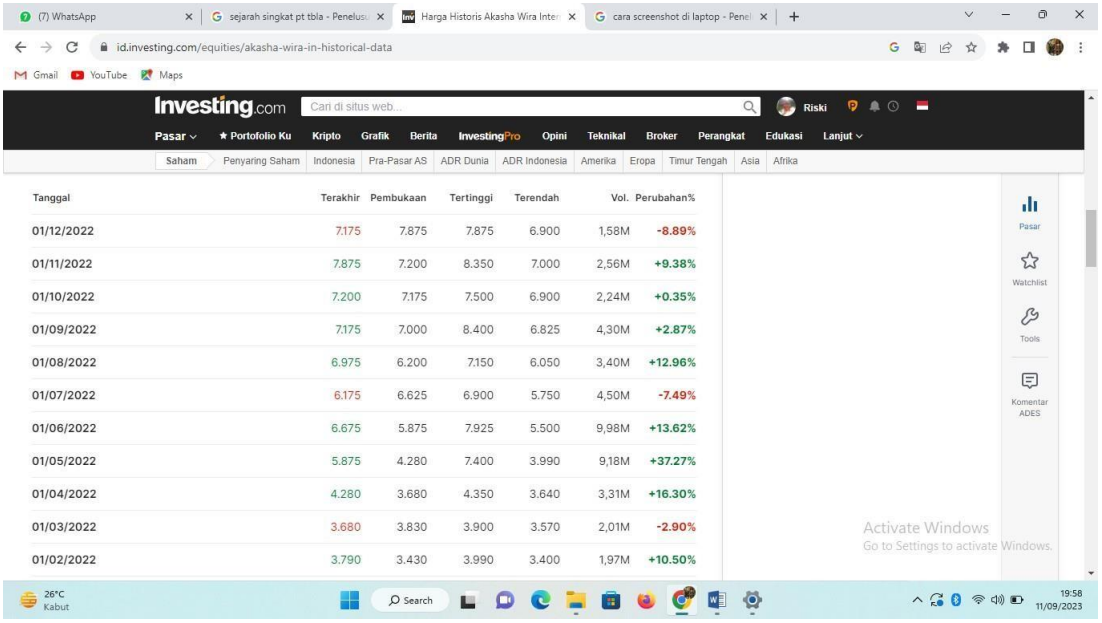
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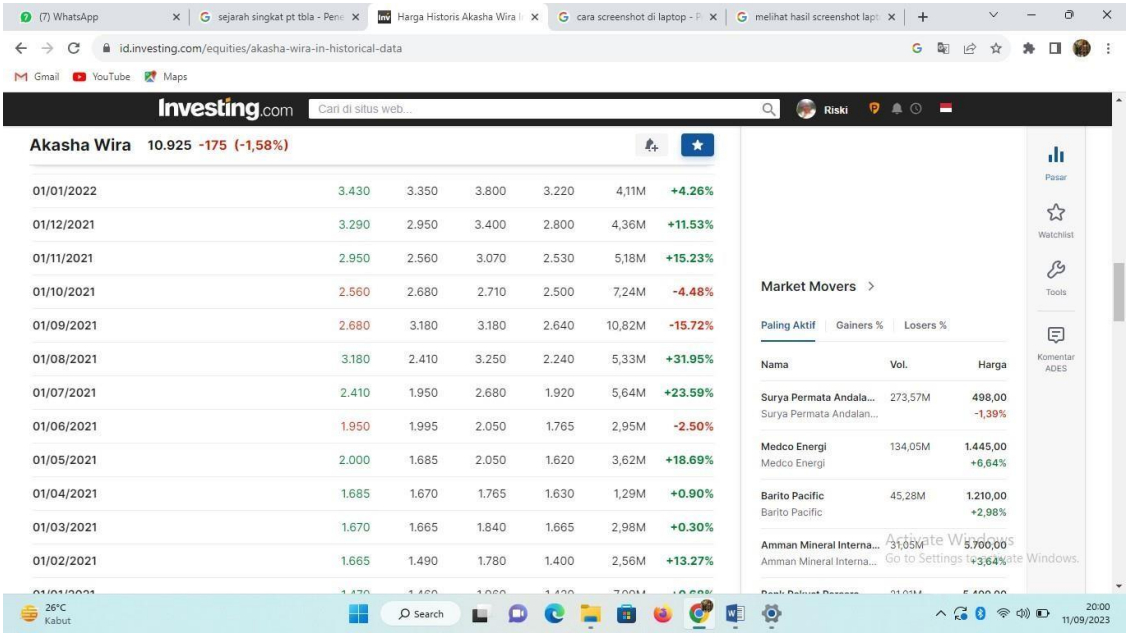
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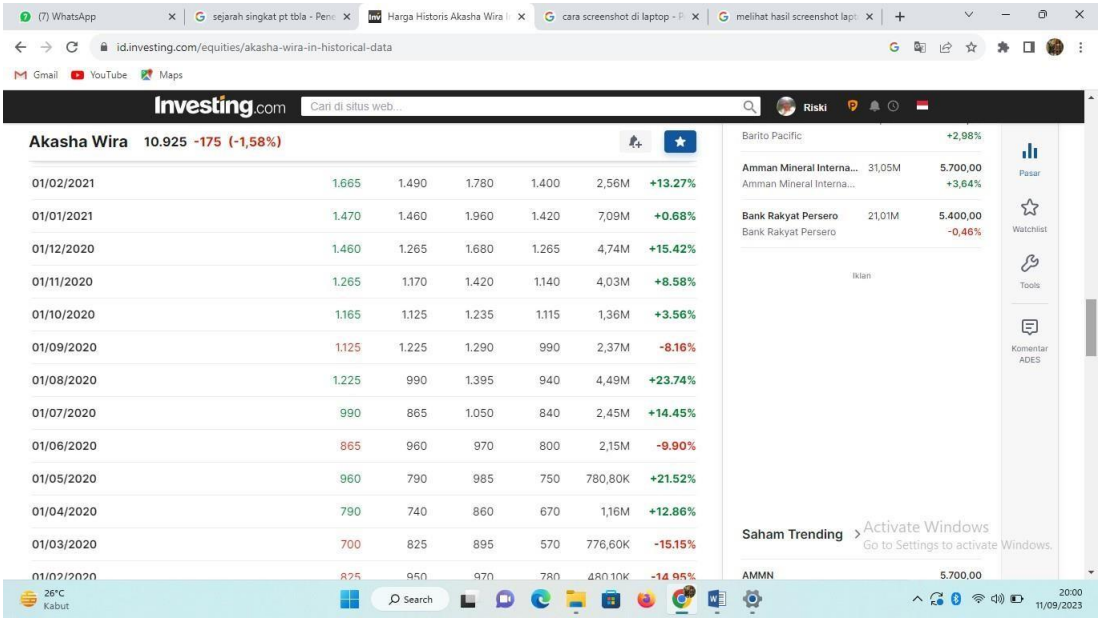
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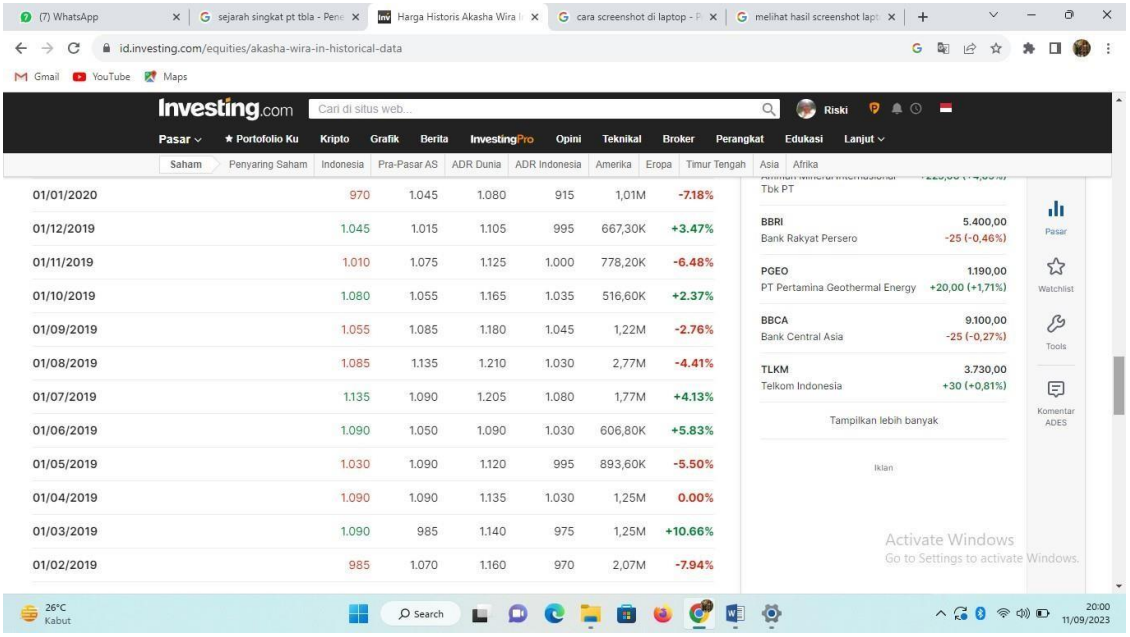
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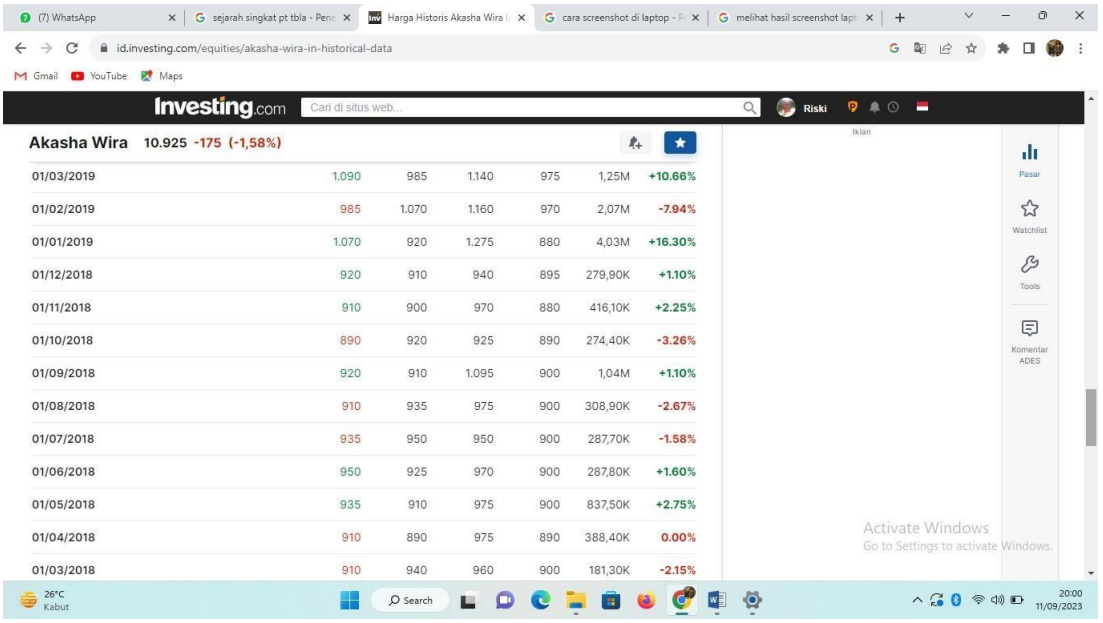


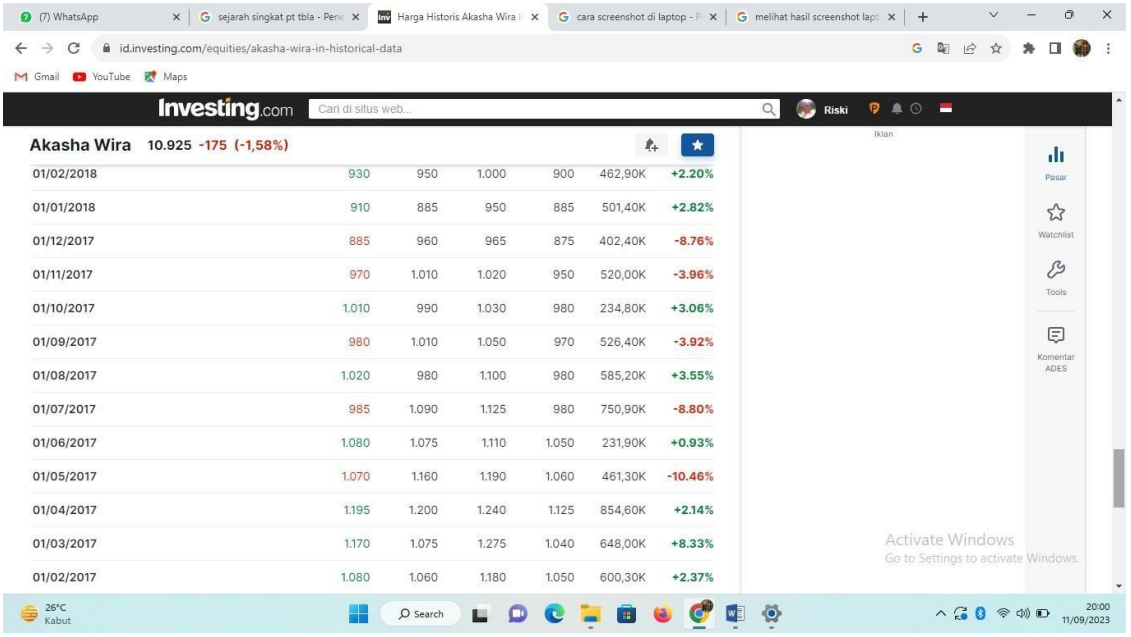



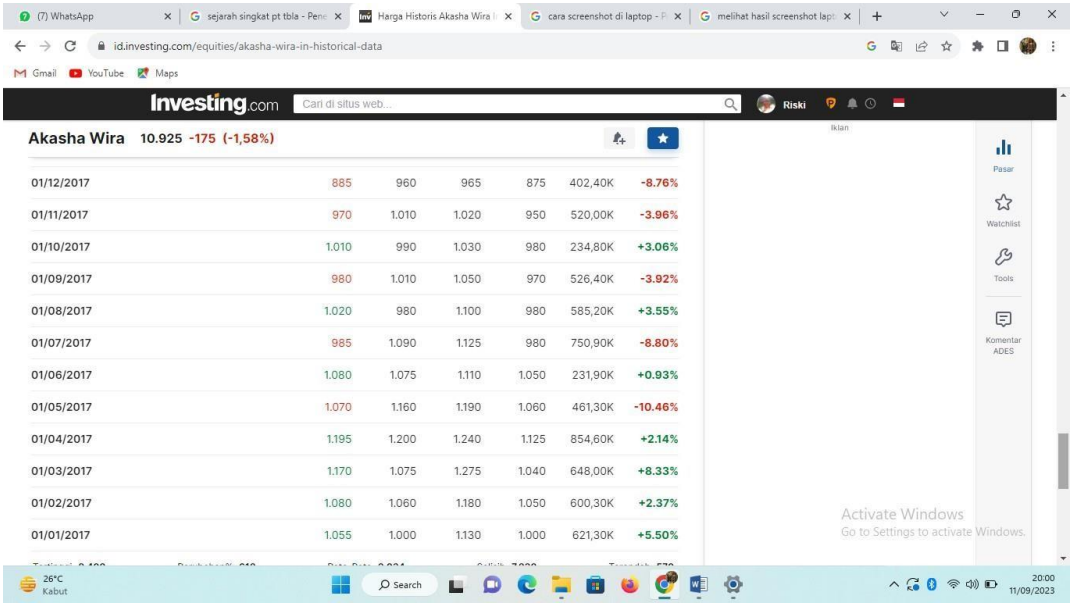

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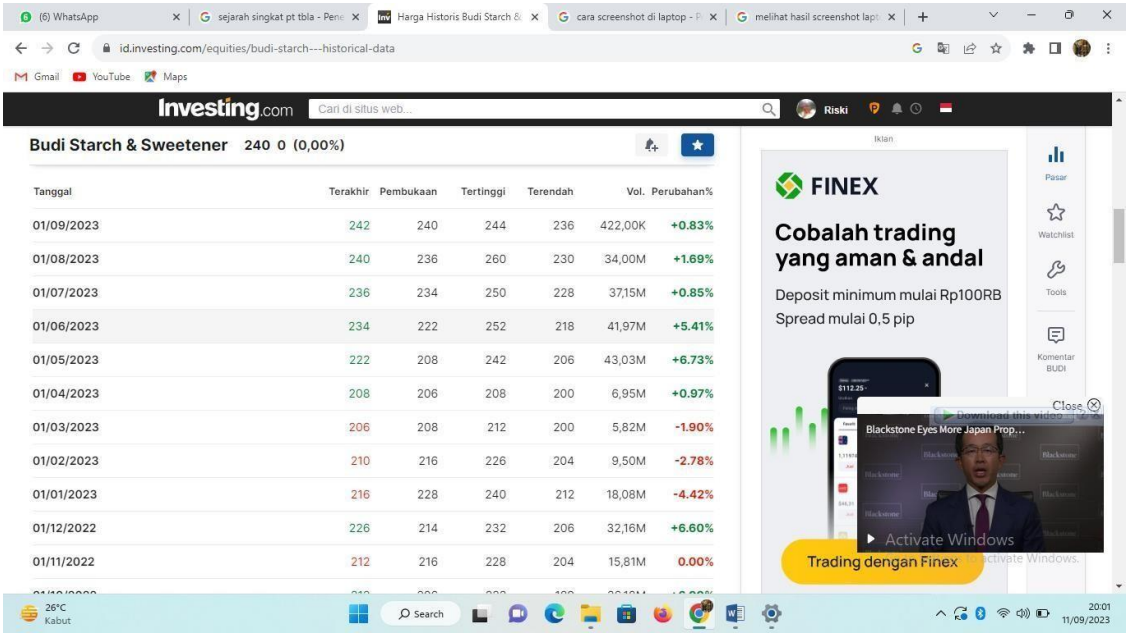

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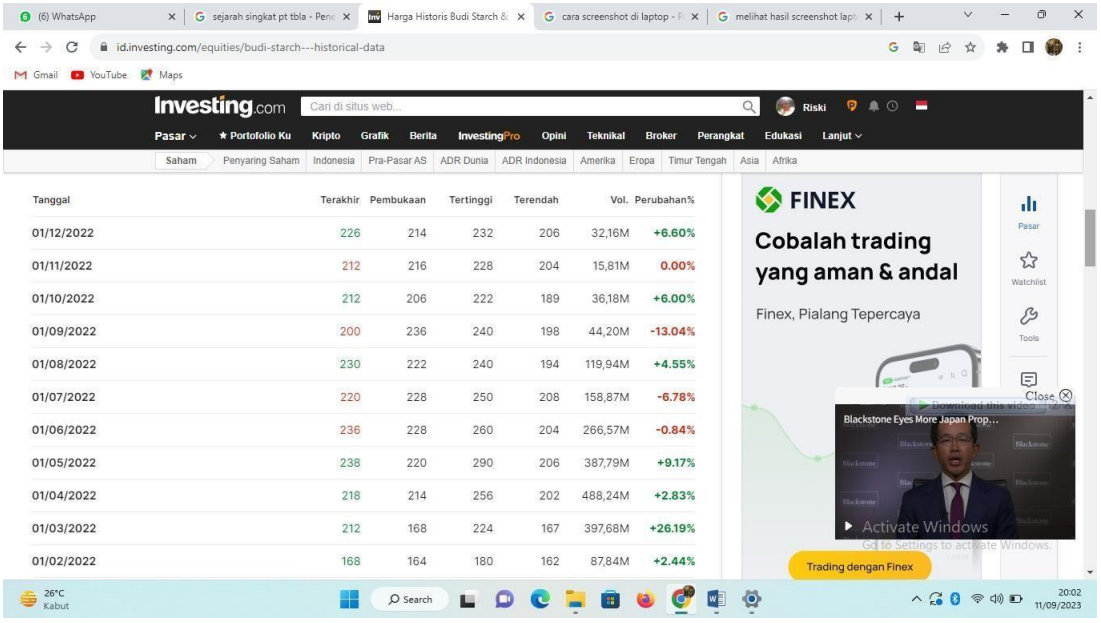

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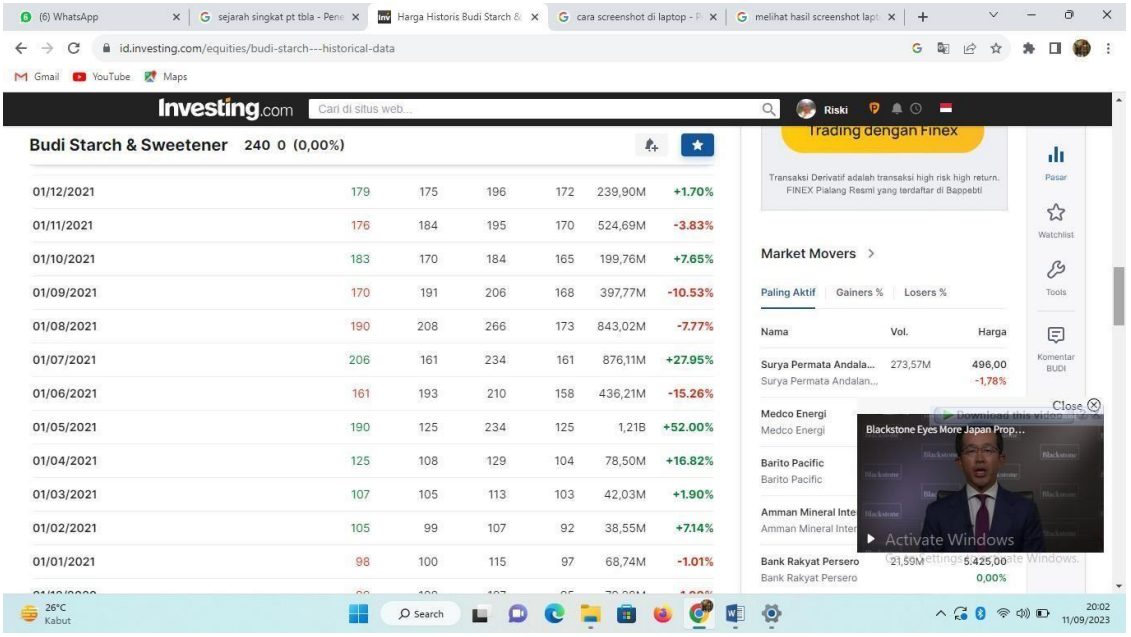

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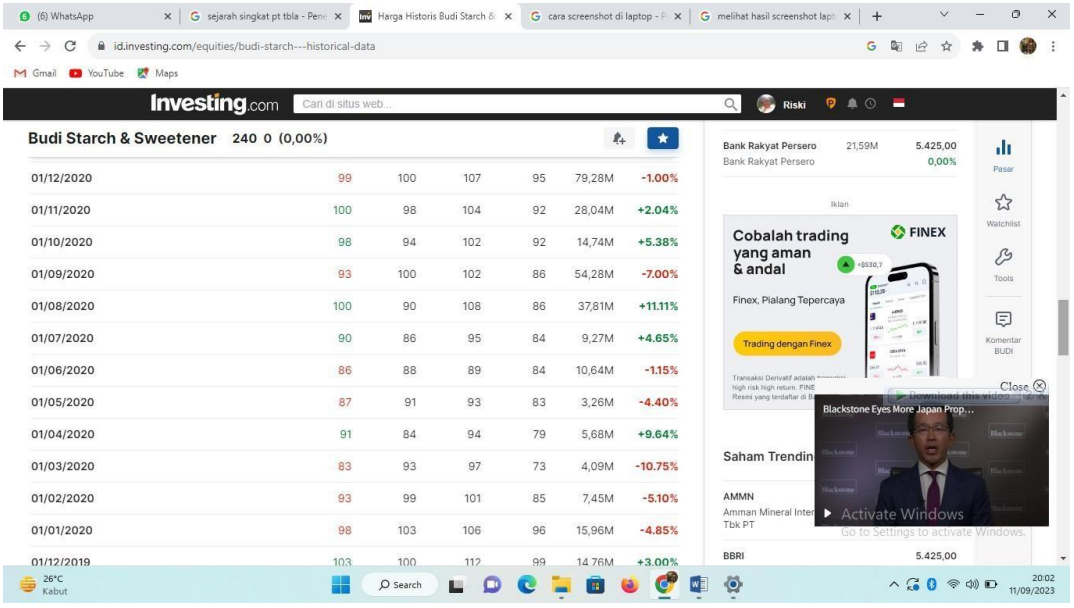

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Harga Historis Budi Starch &
cara screenshot di laptop - P
melihat hasil screenshot lapt
id.investing.com/equities/budi-starch---historical-data
Gmail
YouTube
Maps
Investing.com
Cari di situs web...
Riski
Budi Starch & Sweetener 240 0 (0,00%)
Tanggal Terakhir Pembukaan Tertinggi Terendah Vol. Perubahan%
01/09/2023 242 240 244 236 422,00K +0.83%
01/08/2023 240 236 260 230 34,00M +1.69%
01/07/2023 236 234 250 228 37,15M +0.85%
01/06/2023 234 222 252 218 41,97M +5.41%
01/05/2023 222 208 242 206 43,03M +6.73%
01/04/2023 208 206 208 200 6,95M +0.97%
01/03/2023 206 208 212 200 5,82M -1.90%
01/02/2023 210 216 226 204 9,50M -2.78%
01/01/2023 216 228 240 212 18,08M -4.42%
01/12/2022 226 214 232 206 32,16M +6.60%
01/11/2022 212 216 228 204 15,81M 0.00%
Iklan
FINEX
Cobalah trading yang aman & andal
Deposit minimum mulai Rp100RB
Spread mulai 0,5 pip
Blackstone Eyes More Japan Prop...
Activate Windows
Trading dengan Finex
Pasar
Watchlist
Tools
Komentar BUDI
Close
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(6) WhatsApp
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Gmail
YouTube
Maps
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Cari di situs web...
Riski
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Portofolio Ku
Kripto
Grafik
Berita
InvestingPro
Opini
Teknikal
Broker
Perangkat
Edukasi
Lanjut
Saham
Penyaring Saham
Indonesia
Pra-Pasar AS
ADR Dunia
ADR Indonesia
Amerika
Eropa
Timur Tengah
Asia
Afrika
Tanggal Terakhir Pembukaan Tertinggi Terendah Vol. Perubahan%
01/12/2022 226 214 232 206 32,16M +6.60%
01/11/2022 212 216 228 204 15,81M 0.00%
01/10/2022 212 206 222 189 36,18M +6.00%
01/09/2022 200 236 240 198 44,20M -13.04%
01/08/2022 230 222 240 194 119,94M +4.55%
01/07/2022 220 228 250 208 158,87M -6.78%
01/06/2022 236 228 260 204 266,57M -0.84%
01/05/2022 238 220 290 206 387,79M +9.17%
01/04/2022 218 214 256 202 488,24M +2.83%
01/03/2022 212 168 224 167 397,68M +26.19%
01/02/2022 168 164 180 162 87,84M +2.44%
FINEX
Cobalah trading yang aman & andal
Finex, Pialang Tepercaya
Blackstone Eyes More Japan Prop...
Activate Windows
Trading dengan Finex
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Watchlist
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Gmail
YouTube
Maps
Investing.com
Cari di situs web...
Riski
Budi Starch & Sweetener 240 0 (0,00%)
01/12/2021 179 175 196 172 239,90M +1.70%
01/11/2021 176 184 195 170 524,69M -3.83%
01/10/2021 183 170 184 165 199,76M +7.65%
01/09/2021 170 191 206 168 397,77M -10.53%
01/08/2021 190 208 266 173 843,02M -7.77%
01/07/2021 206 161 234 161 876,11M +27.95%
01/06/2021 161 193 210 158 436,21M -15.26%
01/05/2021 190 125 234 125 1,21B +52.00%
01/04/2021 125 108 129 104 78,50M +16.82%
01/03/2021 107 105 113 103 42,03M +1.90%
01/02/2021 105 99 107 92 38,55M +7.14%
01/01/2021 98 100 115 97 68,74M -1.01%
Trading dengan Finex
Transaksi Derivatif adalah transaksi high risk high return. FINEX Pialang Resmi yang terdaftar di Bappebti
Market Movers
Paling Aktif
Gainers %
Losers %
Nama
Vol.
Harga
Surya Permata Andala...
273,57M
496,00
-1,78%
Medco Energi
Barito Pacific
Amman Mineral Inte
Bank Rakyat Persero
21,59M
5.425,00
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Pasar
Watchlist
Tools
Komentar BUDI
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Blackstone Eyes More Japan Prop...
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sejarah singkat pt tbla - Pene
Harga Historis Budi Starch &
cara screenshot di laptop - P
melihat hasil screenshot lapt
id.investing.com/equities/budi-starch---historical-data
Gmail
YouTube
Maps
Investing.com
Cari di situs web...
Riski
Budi Starch & Sweetener 240 0 (0,00%)
01/12/2020 99 100 107 95 79,28M -1.00%
01/11/2020 100 98 104 92 28,04M +2.04%
01/10/2020 98 94 102 92 14,74M +5.38%
01/09/2020 93 100 102 86 54,28M -7.00%
01/08/2020 100 90 108 86 37,81M +11.11%
01/07/2020 90 86 95 84 9,27M +4.65%
01/06/2020 86 88 89 84 10,64M -1.15%
01/05/2020 87 91 93 83 3,26M -4.40%
01/04/2020 91 84 94 79 5,68M +9.64%
01/03/2020 83 93 97 73 4,09M -10.75%
01/02/2020 93 99 101 85 7,45M -5.10%
01/01/2020 98 103 106 96 15,96M -4.85%
01/12/2019 103 100 112 99 14,76M +3.00%
Bank Rakyat Persero
21,59M
5.425,00
0,00%
Iklan
Cobalah trading yang aman & andal
FINEX
Finex, Pialang Tepercaya
Trading dengan Finex
Saham Trendin
AMMN
Amman Mineral Inter
Tbk PT
BBRI
5.425,00
Pasar
Watchlist
Tools
Komentar BUDI
Close
Blackstone Eyes More Japan Prop...
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Search
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| TAHUN | EMITEN | HARGA SAHAM | RETURN SAHAM |
|---|---|---|---|
| 2018 | | 919,17 | (11,76) |
| 2019 | | 1.063,75 | 15,73 |
| 2020 | | 1.028,33 | (3,33) |
| 2021 | | 2.292,50 | 122,93 |
| 2022 | ADES | 5.858,75 | 155,56 |
| 2018 | | 108,75 | 12,31 |
| 2019 | | 101,92 | (6,28) |
| 2020 | | 93,17 | (8,59) |
| 2021 | | 157,50 | 69,05 |
| 2022 | BUDI | 211,33 | 34,18 |
| 2018 | | 1.165,4 | (23,16) |
| 2019 | | 1.384,17 | 18,77 |
| 2020 | | 1.684,17 | 21,67 |
| 2021 | | 1.839,17 | 9,20 |
| 2022 | CEKA | 2.069,75 | 12,54 |
| 2018 | | 5.400,00 | 16,87 |
| 2019 | | 6.839,58 | 26,66 |
| 2020 | | 4.823,75 | (29,47) |
| 2021 | | 3.803,33 | (21,15) |
| 2022 | DLTA | 3.845 | 1,10 |
| 2018 | | 8.970,8 | 4,41 |
| 2019 | | 10.739,58 | 19,72 |
| 2020 | | 9.882,92 | (8,54) |
| 2021 | | 8.564,58 | (12,81) |
| 2022 | ICBP | 8.827,08 | 3,06 |
| 2018 | | 2.743,3 | 35,67 |
| 2019 | | 2.406,67 | (12,27) |
| 2020 | | 3.870,08 | 59,44 |
| 2021 | | 2.393,33 | (37,63) |
| 2022 | MYOR | 1.981,25 | (17,22) |
| 2018 | | 1.118,7 | (18,88) |
| 2019 | | 1.281,25 | 14,53 |
| 2020 | | 1.250,00 | (2,44) |
| 2021 | | 1.362,93 | 9,03 |
| 2022 | ROTI | 1.291,67 | (5,23) |
| 2018 | | 1.081,3 | (26,16) |
| 2019 | | 1.302,08 | 27,86 |
| 2020 | | 1.562,50 | 20,00 |
| 2021 | | 2.176,67 | 39,31 |
| 2022 | SKLT | 2.098,33 | (3,60) |
| 2018 | | 3.973,3 | 84,84 |
| 2019 | | 3.531,67 | (11,12) |
| 2020 | | 7.742,92 | 119,24 |
| 2021 | | 7.606,25 | (1,77) |
| 2022 | STTP | 7.633,33 | 0,36 |
| 2018 | | 1.329,5 | 10,40 |
| 2019 | | 1.432,92 | 7,77 |
| 2020 | | 1,616,67 | 12,82 |
| 2021 | | 1.553,75 | (3,89) |
| 2022 | ULTJ | 1.475,42 | (5,04) |

**LAMPIRAN II IHSG**

| TAHUN | HARGA TERAKHIR | HARGA SAHAM PERTAHUN |
|---|---|---|
| **2018** | Rp 6,605.63 | Rp 6,098.58 |
| | Rp 6,597.22 | |
| | Rp 6,188.99 | |
| | Rp 5,994.60 | |
| | Rp 5,983.59 | |
| | Rp 5,799.24 | |
| | Rp 5,936.44 | |
| | Rp 6,018.46 | |
| | Rp 5,976.55 | |
| | Rp 5,831.65 | |
| | Rp 6,056.12 | |
| | Rp 6,194.50 | |
| **2019** | Rp 6,532.97 | Rp 6,324.66 |
| | Rp 6,443.35 | |
| | Rp 6,468.75 | |
| | Rp 6,455.35 | |
| | Rp 6,209.12 | |
| | Rp 6,358.63 | |
| | Rp 6,390.50 | |
| | Rp 6,328.47 | |
| | Rp 6,169.10 | |
| | Rp 6,228.32 | |
| | Rp 6,011.83 | |
| | Rp 6,299.54 | |
| **2020** | Rp 5,940.05 | Rp 5,190.41 |
| | Rp 5,452.70 | |
| | Rp 4,538.93 | |
| | Rp 4,716.40 | |
| | Rp 4,753.61 | |
| | Rp 4,905.39 | |
| | Rp 5,149.63 | |
| | Rp 5,238.49 | |
| | Rp 4,870.04 | |
| | Rp 5,128.23 | |
| | Rp 5,612.42 | |
| | Rp 5,979.07 | |
| **2021** | Rp 5,862.35 | Rp 6,186.02 |
| | Rp 6,241.80 | |
| | Rp 5,985.52 | |
| | Rp 5,995.62 | |
| | Rp 5,947.46 | |
| | Rp 5,985.49 | |
| | Rp 6,070.04 | |
| | Rp 6,150.30 | |
| | Rp 6,286.94 | |
| | Rp 6,591.35 | |
| | Rp 6,533.93 | |
| | Rp 6,581.48 | |
| **2022** | Rp 6,631.15 | Rp 7,006.80 |
| | Rp 6,888.17 | |
| | Rp 7,071.44 | |
| | Rp 7,228.91 | |
| | Rp 7,148.97 | |
| | Rp 6,911.58 | |
| | Rp 6,951.12 | |
| | Rp 7,178.59 | |
| | Rp 7,040.80 | |
| | Rp 7,098.89 | |
| | Rp 7,081.31 | |
| | Rp 6,850.62 | |

**LAMPIRAN III RISK FREE**

| TAHUN | RISK FREE PERBULAN (%) | RISK FREE PERTAHUN (%) |
|---|---|---|
| **2018** | 4,25 | 5,10 |
| | 4,25 | |
| | 4,25 | |
| | 4,25 | |
| | 4,75 | |
| | 5,25 | |
| | 5,25 | |
| | 5,50 | |
| | 5,75 | |
| | 5,75 | |
| | 6,00 | |
| | 6,00 | |
| **2019** | 6,00 | 5,63 |
| | 6,00 | |
| | 6,00 | |
| | 6,00 | |
| | 6,00 | |
| | 6,00 | |
| | 5,75 | |
| | 5,50 | |
| | 5,25 | |
| | 5,00 | |
| | 5,00 | |
| | 5,00 | |
| **2020** | 5,00 | 4,25 |
| | 4,75 | |
| | 4,50 | |
| | 4,50 | |
| | 4,50 | |
| | 4,25 | |
| | 4,00 | |
| | 4,00 | |
| | 4,00 | |
| | 4,00 | |
| | 3,75 | |
| | 3,75 | |
| **2021** | 3,75 | 3,52 |
| | 3,50 | |
| | 3,50 | |
| | 3,50 | |
| | 3,50 | |
| | 3,50 | |
| | 3,50 | |
| | 3,50 | |
| | 3,50 | |
| | 3,50 | |
| | 3,50 | |
| | 3,50 | |
| **2022** | 3,50 | 4,00 |
| | 3,50 | |
| | 3,50 | |
| | 3,50 | |
| | 3,50 | |
| | 3,50 | |
| | 3,50 | |
| | 3,75 | |
| | 4,25 | |
| | 4,75 | |
| | 5,25 | |
| | 5,50 | |

## LAMPIRAN IV HASIL MODEL SHARPE, TREYNOR DAN JENSEN

| Tahun | Return Ades | Return IHSG | Risk Free | Beta Ades | Std Ades | Ann Risk | Std IHSG | Ann Risk |
|---|---|---|---|---|---|---|---|---|
| 2018 | -11.76 | 5.42 | 5.1 | 0.279 | 0.022206 | 0.08 | 0.03 | 0.109686 |
| 2019 | 15.73 | 3.71 | 5.62 | 1.939 | 0.069376 | 0.24 | 0.03 | 0.100573 |
| 2020 | -3.33 | -17.93 | 4.25 | 1.224 | 0.137121 | 0.47 | 0.08 | 0.287875 |
| 2021 | 122.93 | 19.18 | 3.52 | -0.300 | 0.119993 | 0.42 | 0.03 | 0.095942 |
| 2022 | 155.56 | 13.27 | 4 | 0.403 | 0.103097 | 0.36 | 0.02 | 0.083642 |

| Tahun | Sharpe Ades | Treynor Ades | Return SML | Alpha SML | Return CML | Alpha CML |
|---|---|---|---|---|---|---|
| 2018 | -219.18 | -60.41 | 6.83 | -18.594 | 5.32 | -17.08 |
| 2019 | 42.07 | 5.22 | -1.47 | 17.196 | 1.06 | 14.67 |
| 2020 | -15.96 | -6.19 | 401.94 | -405.267 | -32.35 | 29.02 |
| 2021 | 287.27 | -397.43 | 303.88 | -180.949 | 71.37 | 51.56 |
| 2022 | 424.37 | 375.62 | 127.01 | 28.547 | 43.58 | 111.98 |

| Tahun | Return Budi | Return IHSG | Risk Free | Beta Budi | Std Budi | Ann Risk | Std IHSG | Ann Risk |
|---|---|---|---|---|---|---|---|---|
| 2018 | 12.31 | 5.42 | 5.1 | -0.702 | 0.069113 | 0.24 | 0.031664 | 0.109686 |
| 2019 | -6.28 | 3.71 | 5.62 | 0.675 | 0.035402 | 0.12 | 0.029033 | 0.100573 |
| 2020 | -8.59 | -17.93 | 4.25 | 0.624 | 0.067677 | 0.23 | 0.083102 | 0.287875 |
| 2021 | 69.05 | 19.18 | 3.52 | -0.249 | 0.145888 | 0.51 | 0.027696 | 0.095942 |
| 2022 | 34.18 | 13.27 | 4 | 1.131 | 0.092369 | 0.32 | 0.024145 | 0.083642 |

| Tahun | Sharpe Budi | Treynor Budi | Return SML | Alpha SML | Return CML | Alpha CML |
|---|---|---|---|---|---|---|
| 2018 | 30.12 | -10.28 | 6.83 | 5.476 | 5.80 | 6.51 |
| 2019 | -97.04 | -17.64 | -1.47 | -4.814 | 3.29 | -9.57 |
| 2020 | -54.77 | -20.56 | 401.94 | -410.527 | -13.81 | 5.22 |
| 2021 | 129.67 | -263.54 | 303.88 | -234.829 | 86.01 | -16.96 |
| 2022 | 94.32 | 26.69 | 127.01 | -92.833 | 39.46 | -5.28 |

| Tahun | Return CEKA | Return IHSG | Risk Free | Beta CEKA | Std CEKA | Ann Risk | Std IHSG | Ann Risk |
|---|---|---|---|---|---|---|---|---|
| 2018 | -23.16 | 5.42 | 5.1 | 1.628 | 0.127151 | 0.44 | 0.031664 | 0.109686 |
| 2019 | 18.77 | 3.71 | 5.62 | -0.449 | 0.127995 | 0.44 | 0.029033 | 0.100573 |
| 2020 | 21.67 | -17.93 | 4.25 | 1.092 | 0.133875 | 0.46 | 0.083102 | 0.287875 |
| 2021 | 9.2 | 19.18 | 3.52 | 0.502 | 0.048175 | 0.17 | 0.027696 | 0.095942 |
| 2022 | 12.54 | 13.27 | 4 | -1.509 | 0.290625 | 1.01 | 0.024145 | 0.083642 |

| Tahun | Sharpe CEKA | Treynor CEKA | Return SML | Alpha SML | Return CML | Alpha CML |
|---|---|---|---|---|---|---|
| 2018 | -892.51 | -17.35 | 6.83 | -29.994 | 6.39 | -29.55 |
| 2019 | 452.93 | -29.28 | -1.47 | 20.236 | -2.80 | 21.57 |
| 2020 | 209.62 | 15.95 | 401.94 | -380.267 | -31.48 | 53.15 |
| 2021 | 205.08 | 11.31 | 303.88 | -294.679 | 30.76 | -21.56 |
| 2022 | 353.69 | -5.66 | 127.01 | -114.473 | 115.58 | -103.04 |

| Tahun | Return DLTA | Return IHSG | Risk Free | Beta DLTA | Std Budi | Ann Risk | Std IHSG | Ann Risk |
|---|---|---|---|---|---|---|---|---|
| 2018 | 16.87 | 5.42 | 5.1 | 0.301 | 0.055246 | 0.19 | 0.031664 | 0.109686 |
| 2019 | 26.66 | 3.71 | 5.62 | 0.474 | 0.047775 | 0.17 | 0.029033 | 0.100573 |
| 2020 | -29.47 | -17.93 | 4.25 | 1.054 | 0.114706 | 0.40 | 0.083102 | 0.287875 |
| 2021 | -21.15 | 19.18 | 3.52 | -0.083 | 0.055130 | 0.19 | 0.027696 | 0.095942 |
| 2022 | 1.1 | 13.27 | 4 | 0.487 | 0.032065 | 0.11 | 0.024145 | 0.083642 |

| Tahun | Sharpe DLTA | Treynor DLTA | Return SML | Alpha SML | Return CML | Alpha CML |
|---|---|---|---|---|---|---|
| 2018 | 371.72 | 39.10 | 6.83 | 10.036 | 5.66 | 11.21 |
| 2019 | 724.69 | 44.43 | -1.47 | 28.126 | 2.48 | 24.18 |
| 2020 | -405.76 | -31.99 | 401.94 | -431.407 | -26.36 | -3.11 |
| 2021 | -890.74 | 296.30 | 303.88 | -325.029 | 34.69 | -55.84 |
| 2022 | -120.11 | -5.95 | 127.01 | -125.913 | 16.31 | -15.21 |

| Tahun | Return ICBP | Return IHSG | Risk Free | Beta Budi | Std ICBP | Ann Risk | Std IHSG | Ann Risk |
|---|---|---|---|---|---|---|---|---|
| 2018 | 4.41 | 5.42 | 5.1 | 0.643 | 0.076865 | 0.27 | 0.031664 | 0.109686 |
| 2019 | 19.72 | 3.71 | 5.62 | 0.154 | 0.054935 | 0.19 | 0.029033 | 0.100573 |
| 2020 | -8.54 | -17.93 | 4.25 | 0.116 | 0.088170 | 0.31 | 0.083102 | 0.287875 |
| 2021 | -12.81 | 19.18 | 3.52 | -0.335 | 0.046405 | 0.16 | 0.027696 | 0.095942 |
| 2022 | 3.06 | 13.27 | 4 | -1.779 | 0.082248 | 0.28 | 0.024145 | 0.083642 |

| Tahun | Sharpe ICBP | Treynor ICBP | Return SML | Alpha SML | Return CML | Alpha CML |
|---|---|---|---|---|---|---|
| 2018 | -21.79 | -1.07 | 6.83 | -2.424 | 5.88 | -1.47 |
| 2019 | 485.66 | 91.60 | -1.47 | 21.186 | 2.01 | 17.71 |
| 2020 | -153.91 | -109.91 | 401.94 | -410.477 | -19.28 | 10.74 |
| 2021 | -589.61 | 48.79 | 303.88 | -316.689 | 29.76 | -42.57 |
| 2022 | -38.93 | 0.53 | 127.01 | -123.953 | 35.58 | -32.52 |

| Tahun | Return MYOR | Return IHSG | Risk Free | Beta MYOR | Std Budi | Ann Risk | Std IHSG | Ann Risk |
|---|---|---|---|---|---|---|---|---|
| 2018 | 35.67 | 5.42 | 5.1 | -0.463 | 0.073581 | 0.25 | 0.031664 | 0.109686 |
| 2019 | -12.27 | 3.71 | 5.62 | 0.286 | 0.036621 | 0.13 | 0.029033 | 0.100573 |
| 2020 | 59.44 | -17.93 | 4.25 | -1.020 | 2.572564 | 8.91 | 0.083102 | 0.287875 |
| 2021 | -37.63 | 19.18 | 3.52 | 0.379 | 0.053985 | 0.19 | 0.027696 | 0.095942 |
| 2022 | -17.22 | 13.27 | 4 | -1.244 | 0.110464 | 0.38 | 0.024145 | 0.083642 |

| Tahun | Sharpe MYOR | Treynor MYOR | Return SML | Alpha SML | Return CML | Alpha CML |
|---|---|---|---|---|---|---|
| 2018 | 965.46 | -66.07 | 6.83 | 28.836 | 5.84 | 29.83 |
| 2019 | -616.20 | -62.53 | -1.47 | -10.804 | 3.21 | -15.48 |
| 2020 | 664.12 | -54.10 | 401.94 | -342.497 | -682.37 | 741.81 |
| 2021 | -1485.76 | -108.53 | 303.88 | -341.509 | 34.04 | -71.67 |
| 2022 | -878.85 | 17.06 | 127.01 | -144.233 | 46.41 | -63.63 |

| Tahun | Return ROTI | Return IHSG | Risk Free | Beta ROTI | Std Budi | Ann Risk | Std IHSG | Ann Risk |
|---|---|---|---|---|---|---|---|---|
| 2018 | -18.88 | 5.42 | 5.1 | 0.962 | 0.084589 | 0.29 | 0.031664 | 0.109686 |
| 2019 | 14.53 | 3.71 | 5.62 | 0.272 | 0.041549 | 0.14 | 0.029033 | 0.100573 |
| 2020 | -2.44 | -17.93 | 4.25 | 0.247 | 0.044015 | 0.15 | 0.083102 | 0.287875 |
| 2021 | 9.03 | 19.18 | 3.52 | 0.039 | 0.036112 | 0.13 | 0.027696 | 0.095942 |
| 2022 | -5.23 | 13.27 | 4 | -0.146 | 0.018868 | 0.07 | 0.024145 | 0.083642 |

| Tahun | Sharpe ROTI | Treynor ROTI | Return SML | Alpha SML | Return CML | Alpha CML |
|---|---|---|---|---|---|---|
| 2018 | -757.34 | -24.92 | 6.83 | -25.714 | 5.95 | -24.83 |
| 2019 | 306.89 | 32.82 | -1.47 | 15.996 | 2.89 | 11.64 |
| 2020 | -80.50 | -27.05 | 401.94 | -404.377 | -7.50 | 5.06 |
| 2021 | 198.94 | 140.38 | 303.88 | -294.849 | 23.94 | -14.91 |
| 2022 | -382.27 | 63.16 | 127.01 | -132.243 | 11.24 | -16.47 |

| Tahun | Return STTP | Return IHSG | Risk Free | Beta STTP | Std Budi | Ann Risk | Std IHSG | Ann Risk |
|---|---|---|---|---|---|---|---|---|
| 2018 | 84.49 | 5.42 | 5.1 | 1.506 | 0.336218 | 1.16 | 0.031517 | 0.109178 |
| 2019 | -10.95 | 3.71 | 5.62 | 0.005 | 0.122123 | 0.42 | 0.029033 | 0.100573 |
| 2020 | 119.24 | -17.93 | 4.25 | -1.477 | 0.270260 | 0.94 | 0.083102 | 0.287875 |
| 2021 | -1.77 | 19.18 | 3.52 | -1.039 | 0.099413 | 0.34 | 0.027696 | 0.095942 |
| 2022 | 0.36 | 13.27 | 4 | -0.110 | 0.072843 | 0.25 | 0.022227 | 0.076996 |

| Tahun | Sharpe STTP | Treynor STTP | Return SML | Alpha SML | Return CML | Alpha CML |
|---|---|---|---|---|---|---|
| 2018 | 2518.96 | 52.72 | 6.83 | 77.656 | 8.51 | 75.98 |
| 2019 | -570.73 | -3329.83 | -1.47 | -9.484 | -2.41 | -8.54 |
| 2020 | 1383.71 | -77.83 | 401.94 | -282.697 | -67.88 | 187.12 |
| 2021 | -191.00 | 5.09 | 303.88 | -305.649 | 59.73 | -61.50 |
| 2022 | -163.77 | 32.95 | 127.01 | -126.653 | 34.38 | -34.02 |

| Tahun | Return ULTJ | Return IHSG | Risk Free | Beta ULTJ | Std ULTJ | Ann Risk | Std IHSG | Ann Risk |
|---|---|---|---|---|---|---|---|---|
| 2018 | 10.4 | 5.42 | 5.1 | -0.844 | 0.104978 | 0.36 | 0.031664 | 0.109686 |
| 2019 | 7.77 | 3.71 | 5.62 | -1.232 | 0.056385 | 0.20 | 0.029033 | 0.100573 |
| 2020 | 12.82 | -17.93 | 4.25 | 0.044 | 0.068932 | 0.24 | 0.083102 | 0.287875 |
| 2021 | -3.89 | 19.18 | 3.52 | 0.402 | 0.038944 | 0.13 | 0.027696 | 0.095942 |
| 2022 | -5.04 | 13.27 | 4 | 0.008 | 0.040935 | 0.14 | 0.024145 | 0.083642 |

| Tahun | Sharpe ULTJ | Treynor ULTJ | Return SML | Alpha SML | Return CML | Alpha CML |
|---|---|---|---|---|---|---|
| 2018 | 14.57 | -6.28 | 6.834 | 3.57 | 6.16 | 4.24 |
| 2019 | 11.01 | -1.74 | -1.466 | 9.24 | 1.91 | 5.86 |
| 2020 | 35.89 | 192.93 | 401.937 | -389.12 | -14.15 | 26.97 |
| 2021 | -54.93 | -18.43 | 303.879 | -307.77 | 25.54 | -29.43 |
| 2022 | -63.75 | -1081.61 | 127.013 | -132.05 | 19.72 | -24.76 |

| Tahun | Return INDF | Return IHSG | Risk Free | Beta INDF | Std Budi | Ann Risk | Std IHSG | Ann Risk |
|---|---|---|---|---|---|---|---|---|
| 2018 | -16.54 | 5.42 | 5.1 | 1.114 | 0.059958 | 0.21 | 0.031664 | 0.109686 |
| 2019 | 7.54 | 3.71 | 5.62 | 0.505 | 0.066924 | 0.23 | 0.029033 | 0.100573 |
| 2020 | -7.27 | -17.93 | 4.25 | 0.407 | 0.096441 | 0.33 | 0.083102 | 0.287875 |
| 2021 | -7.75 | 19.18 | 3.52 | -0.429 | 0.049337 | 0.17 | 0.027696 | 0.095942 |
| 2022 | 2.36 | 13.27 | 4 | -1.060 | 0.050644 | 0.18 | 0.024145 | 0.083642 |

| Tahun | Sharpe INDF | Treynor INDF | Return SML | Alpha SML | Return CML | Alpha CML |
|---|---|---|---|---|---|---|
| 2018 | -104.19 | -19.42 | 6.83 | -23.374 | 5.71 | -22.25 |
| 2019 | 8.28 | 3.80 | -1.47 | 9.006 | 1.22 | 6.32 |
| 2020 | -34.48 | -28.31 | 401.94 | -409.207 | -21.49 | 14.22 |
| 2021 | -65.94 | 26.30 | 303.88 | -311.629 | 31.42 | -39.17 |
| 2022 | -9.35 | 1.55 | 127.01 | -124.653 | 23.44 | -21.08 |

| Tahun | Return ALTO | Return IHSG | Risk Free | Beta ALTO | Std ALTO | Ann Risk | Std IHSG | Ann Risk |
|---|---|---|---|---|---|---|---|---|
| 2018 | 11.55 | 5.42 | 5.1 | -0.488 | 0.045496 | 0.16 | 0.031664 | 0.109686 |
| 2019 | -0.21 | 3.71 | 5.62 | -0.174 | 0.026393 | 0.09 | 0.029033 | 0.100573 |
| 2020 | -8.22 | -17.93 | 4.25 | 0.029 | 0.062012 | 0.21 | 0.083102 | 0.287875 |
| 2021 | -7.69 | 19.18 | 3.52 | -0.565 | 0.073784 | 0.26 | 0.027696 | 0.095942 |
| 2022 | -42.78 | 13.27 | 4 | 6.751 | 0.352888 | 1.22 | 0.024145 | 0.083642 |

| Tahun | Sharpe ALTO | Treynor ALTO | Return SML | Alpha SML | Return CML | Alpha CML |
|---|---|---|---|---|---|---|
| 2018 | 40.93 | -13.22 | 6.83 | 4.716 | 5.56 | 5.99 |
| 2019 | -63.77 | 33.53 | -1.47 | 1.256 | 3.88 | -4.09 |
| 2020 | -58.05 | -423.51 | 401.94 | -410.157 | -12.30 | 4.08 |
| 2021 | -43.86 | 19.83 | 303.88 | -311.569 | 45.24 | -52.93 |
| 2022 | -38.27 | -6.93 | 127.01 | -169.793 | 139.48 | -182.26 |

| Tahun | Return MLBI | Return IHSG | Risk Free | Beta MLBI | Std MLBI | Ann Risk | Std IHSG | Ann Risk |
|---|---|---|---|---|---|---|---|---|
| 2018 | 26.58 | 5.42 | 5.1 | -0.135 | 0.035625 | 0.12 | 0.031664 | 0.109686 |
| 2019 | 12.38 | 3.71 | 5.62 | -0.122 | 0.052343 | 0.18 | 0.029033 | 0.100573 |
| 2020 | -40.84 | -17.93 | 4.25 | 1.093 | 0.106736 | 0.37 | 0.083102 | 0.287875 |
| 2021 | -22.53 | 19.18 | 3.52 | 0.799 | 0.064209 | 0.22 | 0.027696 | 0.095942 |
| 2022 | 9.55 | 13.27 | 4 | 1.480 | 0.085827 | 0.30 | 0.024145 | 0.083642 |

| Tahun | Sharpe MLBI | Treynor MLBI | Return SML | Alpha SML | Return CML | Alpha CML |
|---|---|---|---|---|---|---|
| 2018 | 174.06 | -159.62 | 6.83 | 19.746 | 5.46 | 21.12 |
| 2019 | 37.28 | -55.42 | -1.47 | 13.846 | 2.18 | 10.20 |
| 2020 | -121.95 | -41.26 | 401.94 | -442.777 | -24.24 | -16.60 |
| 2021 | -117.12 | -32.62 | 303.88 | -326.409 | 39.83 | -62.36 |
| 2022 | 18.67 | 3.75 | 127.01 | -117.463 | 36.95 | -27.40 |

| Tahun | Return PSDN | Return IHSG | Risk Free | Beta PSDN | Std PSDN | Ann Risk | Std IHSG | Ann Risk |
|---|---|---|---|---|---|---|---|---|
| 2018 | 60.88 | 5.42 | 5.1 | 2.400 | 0.211184 | 0.73 | 0.031664 | 0.109686 |
| 2019 | -35.55 | 3.71 | 5.62 | 0.336 | 0.180126 | 0.62 | 0.029033 | 0.100573 |
| 2020 | -36.76 | -17.93 | 4.25 | 0.875 | 0.180212 | 0.62 | 0.083102 | 0.287875 |
| 2021 | 35.99 | 19.18 | 3.52 | -1.426 | 0.187658 | 0.65 | 0.027696 | 0.095942 |
| 2022 | -22.97 | 13.27 | 4 | 1.499 | 0.145829 | 0.51 | 0.024145 | 0.083642 |

| Tahun | Sharpe PSDN | Treynor PSDN | Return SML | Alpha SML | Return CML | Alpha CML |
|---|---|---|---|---|---|---|
| 2018 | 76.25 | 23.24 | 6.83 | 54.046 | 7.23 | 53.65 |
| 2019 | -65.98 | -122.53 | -1.47 | -34.084 | -6.23 | -29.32 |
| 2020 | -65.69 | -46.87 | 401.94 | -438.697 | -43.85 | 7.09 |
| 2021 | 49.95 | -22.77 | 303.88 | -267.889 | 109.63 | -73.64 |
| 2022 | -53.39 | -17.99 | 127.01 | -149.983 | 59.99 | -82.96 |

| Tahun | Return SKBM | Return IHSG | Risk Free | Beta SKBM | Std SKBM | Ann Risk | Std IHSG | Ann Risk |
|---|---|---|---|---|---|---|---|---|
| 2018 | -6.94 | 5.42 | 5.1 | 0.271 | 0.170448 | 0.59 | 0.031664 | 0.109686 |
| 2019 | -12.54 | 3.71 | 5.62 | -4.034 | 0.224357 | 0.78 | 0.029033 | 0.100573 |
| 2020 | -28.87 | -17.93 | 4.25 | -0.485 | 0.205794 | 0.71 | 0.083102 | 0.287875 |
| 2021 | 12.62 | 19.18 | 3.52 | 2.030 | 0.151491 | 0.52 | 0.027696 | 0.095942 |
| 2022 | 5.19 | 13.27 | 4 | 1.086 | 0.053471 | 0.19 | 0.024145 | 0.083642 |

| Tahun | Sharpe SKBM | Treynor SKBM | Return SML | Alpha SML | Return CML | Alpha CML |
|---|---|---|---|---|---|---|
| 2018 | -20.39 | -44.47 | 6.83 | -13.774 | 6.82 | -13.76 |
| 2019 | -23.37 | 4.50 | -1.47 | -11.074 | -9.14 | -3.40 |
| 2020 | -46.46 | 68.32 | 401.94 | -430.807 | -50.68 | 21.81 |
| 2021 | 17.34 | 4.48 | 303.88 | -291.259 | 89.18 | -76.56 |
| 2022 | 6.42 | 1.10 | 127.01 | -121.823 | 24.53 | -19.34 |

| Tahun | Return TBLA | Return TBLA | Risk Free | Beta Budi | Std TBLA | Ann Risk | Std IHSG | Ann Risk |
|---|---|---|---|---|---|---|---|---|
| 2018 | -22.51 | 5.42 | 5.1 | 1.304 | 0.126681 | 0.44 | 0.031664 | 0.109686 |
| 2019 | -15.87 | 3.71 | 5.62 | 1.867 | 0.089384 | 0.31 | 0.029033 | 0.100573 |
| 2020 | -21.75 | -17.93 | 4.25 | 1.782 | 0.177429 | 0.61 | 0.083102 | 0.287875 |
| 2021 | 22.75 | 19.18 | 3.52 | 1.355 | 0.045604 | 0.16 | 0.027696 | 0.095942 |
| 2022 | -9.66 | 13.27 | 4 | 0.349 | 0.026716 | 0.09 | 0.024145 | 0.083642 |

| Tahun | Sharpe TBLA | Treynor TBLA | Return SML | Alpha SML | Return CML | Alpha CML |
|---|---|---|---|---|---|---|
| 2018 | -62.92 | -21.18 | 6.834 | -29.34 | 6.38 | -28.89 |
| 2019 | -69.40 | -11.51 | -1.466 | -14.40 | -0.26 | -15.61 |
| 2020 | -42.30 | -14.59 | 401.937 | -423.69 | -43.11 | 21.36 |
| 2021 | 121.73 | 14.19 | 303.879 | -281.13 | 29.31 | -6.56 |
| 2022 | -147.60 | -39.16 | 127.013 | -136.67 | 14.26 | -23.92 |

## LAMPIRAN V Z-SCORE

| Tahun | Emiten | ZSharpe | ZTreynor | ZJensen |
|---|---|---|---|---|
| 2018 | ADES | (0.4597) | (0.76746) | (0.84957) |
| | BUDI | (0.14144) | 0.232836 | (0.0407) |
| | CEKA | (1.31928) | 0.091762 | (1.23267) |
| | DLTA | 0.294646 | 1.218163 | 0.112541 |
| | ICBP | (0.20771) | 0.416612 | (0.30618) |
| | MYOR | 1.05262 | (0.8804) | 0.744319 |
| | ROTI | (1.14672) | (0.05929) | (1.08884) |
| | STTP | 3.035832 | 1.489936 | 2.384923 |
| | ULTJ | (0.1613) | 0.312652 | 0.004938 |
| | INDF | (0.31291) | 0.050457 | (1.01021) |
| | ALTO | (0.12764) | 0.174172 | (0.06624) |
| | MLBI | 0.042311 | (2.74709) | 0.438848 |
| | PSDN | (0.08255) | 0.901693 | 1.591505 |
| | SKBM | (0.20593) | (0.44939) | (0.6876) |
| | TBLA | (0.26022) | 0.015338 | 0.004938 |
| 2019 | ADES | 0.012882 | 0.27087 | 0.826426 |
| | BUDI | (0.37821) | 0.244279 | (0.50919) |
| | CEKA | 1.16797 | 0.230739 | 1.010899 |
| | DLTA | 1.931994 | 0.316481 | 1.489681 |
| | ICBP | 1.259987 | 0.371351 | 1.068547 |
| | MYOR | (1.83777) | 0.192061 | (0.87267) |
| | ROTI | 0.757395 | 0.302976 | 0.753607 |
| | STTP | (1.70994) | (3.60859) | (0.79257) |
| | ULTJ | (0.07444) | 0.262774 | (0.30602) |
| | INDF | (0.08212) | 0.269219 | 0.329439 |
| | ALTO | (0.28468) | 0.303802 | (0.14085) |
| | MLBI | (0.00058) | 0.200332 | 0.623141 |
| | PSDN | (0.29089) | 0.122267 | (2.28535) |
| | SKBM | (0.1711) | 0.270033 | (0.88906) |
| | TBLA | (0.3005) | 0.251409 | (0.30602) |
| 2020 | ADES | (0.22792) | 0.148891 | (0.39376) |
| | BUDI | (0.31924) | 0.039095 | (0.41221) |
| | CEKA | 0.302883 | 0.318055 | (0.30606) |
| | DLTA | (1.14514) | (0.04824) | (0.48545) |
| | ICBP | (0.55252) | 1.035972 | (0.41203) |
| | MYOR | 1.372343 | (0.21717) | (0.17356) |
| | ROTI | (0.37978) | (0.01049) | (0.39063) |
| | STTP | 3.065572 | (0.39849) | 0.036209 |
| | ULTJ | (0.10591) | 1.670299 | 2.437846 |
| | INDF | (0.2715) | (0.02012) | (0.40758) |
| | ALTO | (0.32696) | (3.03971) | (0.41091) |
| | MLBI | (0.47732) | (0.11907) | (0.52534) |
| | PSDN | (0.34493) | (0.16193) | (0.51103) |
| | SKBM | (0.29969) | 0.718197 | (0.48335) |
| | TBLA | (0.2899) | 0.084709 | 2.437846 |
| 2021 | ADES | 0.937629 | (2.40607) | 0.150073 |
| | BUDI | 0.608667 | (1.55604) | (0.10212) |
| | CEKA | 0.766072 | 0.188895 | (0.38225) |
| | DLTA | (1.52126) | 1.99821 | (0.5243) |
| | ICBP | (0.8927) | 0.426844 | (0.48527) |
| | MYOR | (2.76325) | (0.57193) | (0.60144) |
| | ROTI | 0.753256 | 1.008321 | (0.38304) |

| | | | | |
|---|---|---|---|---|
| | STTP | (0.06067) | 0.149406 | (0.43359) |
| | ULTJ | 0.223348 | 8.46E-05 | 2.419342 |
| | INDF | 0.200366 | 0.284062 | (0.46158) |
| | ALTO | 0.246454 | 0.242986 | (0.4613) |
| | MLBI | 0.093537 | (0.09000) | (0.53076) |
| | PSDN | 0.442266 | (0.02747) | (0.25686) |
| | SKBM | 0.374198 | 0.145533 | (0.36624) |
| | TBLA | 0.592094 | 0.207179 | 2.419342 |
| 2022 | ADES | 1.650014 | 1.374925 | 1.170218 |
| | BUDI | 0.54078 | 0.226494 | (0.09076) |
| | CEKA | 1.412472 | 0.12002 | (0.31552) |
| | DLTA | (0.17988) | 0.12894 | (0.43434) |
| | ICBP | 0.092953 | 0.140393 | (0.41399) |
| | MYOR | (2.72985) | 0.194798 | (0.62462) |
| | ROTI | (1.06095) | 0.346527 | (0.50009) |
| | STTP | (0.32661) | 0.247097 | (0.44203) |
| | ULTJ | 0.009538 | (3.42125) | 2.192645 |
| | INDF | 0.192366 | 0.143751 | (0.42126) |
| | ALTO | 0.095171 | 0.11584 | (0.8901) |
| | MLBI | 0.286535 | 0.150991 | (0.34658) |
| | PSDN | 0.044356 | 0.079439 | (0.68434) |
| | SKBM | 0.245366 | 0.142269 | (0.39186) |
| | TBLA | (0.27227) | 0.009762 | 2.192645 |

# LAMPIRAN VI HASIL KRUSKAL WALLISH

**Descriptive Statistics**

| | N | Mean | Std. Deviation | Minimum | Maximum |
|---|---|---|---|---|---|
| Zscore | 75 | .0000 | .97260 | -2.76 | 3.07 |
| Metode | 75 | 2.0000 | .82199 | 1.00 | 3.00 |

**Test Statistics[a,b]**

| | ZScore |
|---|---|
| Kruskal-Wallis H | 4.628 |
| Df | 2 |
| Asymp. Sig. | .099 |

a. Kruskal Wallis Test

b. Grouping Variable: Metode

**Ranks**

| | Metode | N | Mean Rank |
|---|---|---|---|
| ZScore | ZSharpe | 25 | 37.56 |
| | ZTreynor | 25 | 31.60 |
| | ZJensen | 25 | 44.84 |
| | Total | 75 | |