Capital Asset Pricing Model: 10 Risky Assets Infosys Pvt Ltd. **Reliance Industries TATA Motors Sun Pharma HDFC Bank Bharti Airtel** Date Price 1259.4500 12/29/2023 1542.9000 779.9500 1709.2500 2584.9500 1032.2000 12/28/2023 753.9000 1262.1500 1705.2500 2605.5500 1036.7000 1562.6500 12/27/2023 740.9000 1252.4500 1703.3000 2586.8500 1021.2000 1567.1000 12/26/2023 1543.9500 719.5500 1247.5000 1682.4500 2578.0500 999.8500 12/22/2023 724.7000 1243.6500 1670.8500 2565.0500 989.5500 1562.9000 12/21/2023 1536.0000 708.8500 1233.5000 1686.7000 2562.5500 977.9000 12/20/2023 1232.1500 1657.0000 971.5500 1536.4000 705.2500 2527.1500 12/19/2023 1558.3000 728.9500 1244.9500 1652.9000 2558.1000 988.4500 12/18/2023 1564.3500 730.8000 1252.7500 1655.7000 2521.0000 990.2500 12/15/2023 1235.7500 1656.5500 2495.6000 992.5500 1578.4000 732,4000 12/14/2023 1231.3000 2464.1500 1005.2000 1501.4500 719.7500 1650.1500 12/13/2023 1233.1000 1630.9000 2433.9500 999.9000 1449.0000 720.3000 12/12/2023 715.4000 1218.0000 1634.6000 2424.0500 995.2500 1476.0500 12/11/2023 1241.4000 1651.0000 2459.3500 1000.8500 1488.5000 720.8000 8/12/2023 714.5500 1235.8000 1653.2000 2455.7500 1000.2500 1491.1500 1239.3000 7/12/2023 1465.9000 721.9500 1630.4500 2457.0500 1000.0000 6/12/2023 1474.3000 722.4500 1240.3500 1627.8000 2461.1000 1024.4500 5/12/2023 1239.5500 1623,7000 2437.7500 1453.9500 708.9500 1031.1000 4/12/2023 1464.3500 705.6000 1231.1500 1609.4000 2420.2000 1032.9000 1/12/2023 1231.2500 1555.4000 1014.7000 1452.3000 705.4500 2394.3000 11/30/2023 1225.8500 1558.8000 1014.7000 1455.1500 706.4000 2377.4500 11/29/2023 1202.2000 1459.6000 712.3500 1559.1500 2400.7000 995.4000 11/28/2023 1191.3500 2394.4000 984.9000 1442.7000 697.5000 1528.6500 11/24/2023 1437.4000 673.7000 1195.4500 1532.1000 2393.9000 973.1500 11/23/2023 1449.2500 679.9500 1198.8000 1521.3000 2395.5000 976.6500

| | | | | Risk Free Asset | | |
|--------------------|------------|---------------|----------|-----------------|------------------|--------------|
| Hindustan Unilever | Tata Steel | Bajaj Finance | NTPC | India 10 | Infosys Pvt Ltd. | TATA Motors |
| | | .,,, | | | | |
| | | | | | | |
| 2663.9500 | 139.6000 | 7327.7500 | 311.1500 | 7.176 | -0.012638787 | 0.034553654 |
| 2633.8000 | 138.1500 | 7258.6500 | 313.9000 | 7.207 | -0.00283964 | 0.017546228 |
| 2608.3000 | 137.2000 | 7232.8000 | 306.0500 | 7.205 | 0.014994009 | 0.029671322 |
| 2584.7500 | 135.2000 | 7162.3000 | 309.6000 | 7.183 | -0.012124896 | -0.007106389 |
| 2575.6000 | 133.5500 | 7295.3000 | 302.8000 | 7.188 | 0.017513021 | 0.022360161 |
| 2553.2000 | 131.0000 | 7367.1500 | 301.9500 | 7.184 | -0.000260349 | 0.005104573 |
| 2557.5000 | 129.7500 | 7493.9500 | 297.6500 | 7.171 | -0.014053777 | -0.032512518 |
| 2560.7000 | 135.4000 | 7632.6500 | 309.6500 | 7.171 | -0.003867421 | -0.002531472 |
| 2535.5000 | 136.6000 | 7587.6000 | 303.2000 | 7.153 | -0.008901419 | -0.002184599 |
| 2522.9000 | 136.4500 | 7515.0500 | 305.1000 | 7.163 | 0.051250458 | 0.017575547 |
| 2516.3500 | 132.0000 | 7474.2000 | 295.4000 | 7.194 | 0.036197378 | -0.000763571 |
| 2511.9000 | 131.4000 | 7258.0000 | 294.0500 | 7.259 | -0.018325937 | 0.006849315 |
| 2502.7500 | 130.1000 | 7314.5500 | 283.4000 | 7.275 | -0.008364125 | -0.007491676 |
| 2503.6500 | 130.0500 | 7292.7500 | 287.3000 | 7.281 | -0.001777152 | 0.008746764 |
| 2522.3000 | 129.2000 | 7307.6000 | 285.0500 | 7.266 | 0.017224913 | -0.010250017 |
| 2518.2500 | 130.0000 | 7391.2000 | 283.8000 | 7.236 | -0.005697619 | -0.000692089 |
| 2567.6500 | 131.8500 | 7427.1000 | 281.1000 | 7.248 | 0.013996355 | 0.019042246 |
| 2563.2500 | 131.6000 | 7349.8000 | 285.4500 | 7.262 | -0.007102127 | 0.004747732 |
| 2602.3000 | 131.0000 | 7407.6500 | 274.8000 | 7.271 | 0.008297184 | 0.00021263 |
| 2563.6500 | 130.0000 | 7259.3500 | 268.9500 | 7.29 | -0.001958561 | -0.001344847 |
| 2545.5500 | 127.9000 | 7121.9000 | 261.3000 | 7.279 | -0.00304878 | -0.008352636 |
| 2525.0500 | 127.7500 | 7130.1000 | 258.4000 | 7.252 | 0.011714147 | 0.021290323 |
| 2510.5500 | 126.8500 | 7127.5500 | 257.5500 | 7.273 | 0.003687213 | 0.035327297 |
| 2515.2000 | 125.9500 | 7020.8000 | 253.9000 | 7.272 | -0.008176643 | -0.009191852 |
| 2519.9000 | 126.7000 | 7073.6500 | 252.7500 | 7.253 | -0.005865002 | -0.001834997 |

| Sun Pharma | HDFC Bank | Reliance Industries | Bharti Airtel | Hindustan Unilever | Tata Steel | Bajaj Finance | NTPC |
|--------------|--------------|---------------------|---------------|--------------------|--------------|---------------|--------------|
| | | Return | | | | .,,, | _ |
| | | | | | | | |
| -0.002139207 | 0.002345697 | -0.0079062 | -0.004340696 | 0.011447338 | 0.010495838 | 0.009519677 | -0.0088 |
| 0.00774482 | 0.001144836 | 0.007228869 | 0.015178222 | 0.009776483 | 0.006924198 | 0.003573996 | 0.025649404 |
| 0.003967936 | 0.012392642 | 0.003413433 | 0.021353203 | 0.009111133 | 0.014792899 | 0.009843207 | -0.011466408 |
| 0.003095726 | 0.006942574 | 0.005068127 | 0.010408772 | 0.00355257 | 0.012354923 | -0.018230916 | 0.022457067 |
| 0.008228618 | -0.009397047 | 0.000975591 | 0.011913284 | 0.008773304 | 0.019465649 | -0.009752754 | 0.002815036 |
| 0.001095646 | 0.017923959 | 0.014007874 | 0.006535948 | -0.001681329 | 0.009633911 | -0.016920316 | 0.014446498 |
| -0.010281537 | 0.002480489 | -0.012098823 | -0.017097476 | -0.001249658 | -0.041728213 | -0.018171932 | -0.038753431 |
| -0.006226302 | -0.001691128 | 0.014716382 | -0.001817723 | 0.009938868 | -0.008784773 | 0.005937319 | 0.021273087 |
| 0.013756828 | -0.000513115 | 0.010177913 | -0.002317264 | 0.004994253 | 0.001099304 | 0.009653961 | -0.006227466 |
| 0.003614066 | 0.003878435 | 0.012763022 | -0.01258456 | 0.002602977 | 0.033712121 | 0.005465468 | 0.032836831 |
| -0.001459736 | 0.011803299 | 0.012407814 | 0.00530053 | 0.001771567 | 0.00456621 | 0.02978782 | 0.004591056 |
| 0.012397373 | -0.002263551 | 0.004084074 | 0.004672193 | 0.003655978 | 0.009992314 | -0.007731166 | 0.037579393 |
| -0.018849686 | -0.009933374 | -0.014353386 | -0.005595244 | -0.000359475 | 0.000384468 | 0.00298927 | -0.013574661 |
| 0.004531478 | -0.001330752 | 0.001465947 | 0.00059985 | -0.007394045 | 0.006578947 | -0.002032131 | 0.007893352 |
| -0.002824175 | 0.013953203 | -0.00052909 | 0.00025 | 0.00160826 | -0.006153846 | -0.011310748 | 0.00440451 |
| -0.000846535 | 0.001627964 | -0.001645606 | -0.023866465 | -0.019239382 | -0.014031096 | -0.00483365 | 0.009605123 |
| 0.000645396 | 0.002525097 | 0.009578505 | -0.006449423 | 0.001716571 | 0.001899696 | 0.010517293 | -0.015239096 |
| 0.006822889 | 0.008885299 | 0.007251467 | -0.001742666 | -0.015005956 | 0.004580153 | -0.007809494 | 0.038755459 |
| -8.12183E-05 | 0.034717757 | 0.010817358 | 0.017936336 | 0.015076161 | 0.007692308 | 0.020428826 | 0.021751255 |
| 0.004405107 | -0.002181165 | 0.007087426 | 0 | 0.007110448 | 0.016419077 | 0.019299625 | 0.029276693 |
| 0.019672268 | -0.000224481 | -0.009684675 | 0.01938919 | 0.008118651 | 0.001174168 | -0.001150054 | 0.01122291 |
| 0.009107315 | 0.019952245 | 0.002631139 | 0.010660981 | 0.005775627 | 0.007094994 | 0.000357767 | 0.00330033 |
| -0.003429671 | -0.002251811 | 0.000208864 | 0.012074192 | -0.00184876 | 0.007145693 | 0.01520482 | 0.014375738 |
| -0.002794461 | 0.007099191 | -0.000667919 | -0.003583679 | -0.001865153 | -0.005919495 | -0.00747139 | 0.004549951 |
| -0.004401628 | 0.005784933 | 0.003056695 | 0.007115236 | -0.000793053 | 0.004758128 | -0.007673585 | -0.003548196 |

| | | Infosys Pvt Ltd. | TATA Motors |
|--------------|----------------------|---------------------|---------------------|
| | | | |
| | Beta= | -0.399421381 | -0.597272959 |
| India 10 | Expected Return = | 5.6349376377596100% | 6.4200293406045900% |
| | | | |
| | | | |
| -0.004301374 | | | |
| 0.000277585 | Risk free rate : | 4.05% | |
| 0.003062787 | Market Return : | 0.081916% | |
| -0.000695604 | | | |
| 0.000556793 | | | |
| 0.001812857 | Covariance Matrix = | 1 | 2 |
| 0 | 1 | 0.050653932 | 0.01674883 |
| 0.002516427 | 2 | 0.01674883 | 0.057947111 |
| -0.001396063 | 3 | 0.003591814 | 0.012571987 |
| -0.004309147 | 4 | 0.011233983 | 0.002952628 |
| -0.008954401 | 5 | 0.013609485 | 0.008339283 |
| -0.002199313 | 6 | 0.011340851 | 0.014467062 |
| -0.000824063 | 7 | 0.004989073 | 0.007386429 |
| 0.00206441 | 8 | 0.019292941 | 0.024363027 |
| 0.004145937 | 9 | 0.018288486 | 0.013293163 |
| -0.001655629 | 10 | 0.012775893 | 0.012701683 |
| -0.001927844 | | | |
| -0.001237794 | | | |
| -0.00260631 | | | |
| 0.001511197 | Inverse Covariance = | 1 | 2 |
| 0.003723111 | 1 | 29.44390261 | -2.98718587 |
| -0.002887392 | 2 | -2.98718587 | 27.97450169 |
| 0.000137514 | 3 | 5.815942425 | -9.782374621 |
| 0.002619606 | 4 | -4.673799094 | 7.735943971 |
| 0.000827929 | 5 | -9.670208034 | 3.741475783 |

| Sun Pharma | HDFC Bank | Reliance Industries | Bharti Airtel | Hindustan Unilever |
|---------------------|---------------------|---------------------|---------------------|---------------------|
| | | | | |
| -0.303814927 | -0.339999137 | -0.434396695 | 0.332298627 | -0.162452426 |
| 5.2555631865967400% | 5.3991451749854000% | 5.7737226261621600% | 2.7314110971449400% | 4.6946248926002700% |
| | • | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| 3 | 4 | 5 | 6 | 7 |
| 0.003591814 | 0.011233983 | 0.013609485 | 0.011340851 | 0.004989073 |
| 0.012571987 | 0.002952628 | 0.008339283 | 0.014467062 | 0.007386429 |
| 0.020855934 | 0.00331661 | 0.007449503 | 0.009627062 | 0.002149797 |
| 0.00331661 | 0.019964076 | 0.012073134 | 0.011025646 | 0.00299043 |
| 0.007449503 | 0.012073134 | 0.019405481 | 0.010223739 | 0.004421311 |
| 0.009627062 | 0.011025646 | 0.010223739 | 0.026187557 | 0.006886948 |
| 0.002149797 | 0.00299043 | 0.004421311 | 0.006886948 | 0.014609485 |
| 0.007843305 | 0.006987811 | 0.012221651 | 0.011576414 | 0.005943951 |
| 0.003835969 | 0.009558397 | 0.011281057 | 0.007849923 | 0.004230815 |
| 0.00853153 | 0.008125095 | 0.013971755 | 0.009102368 | 0.00148732 |
| | | | | |
| | | | | |
| 3 | 4 | 5 | 6 | 7 |
| 5.815942425 | -4.673799094 | -9.670208034 | -2.658197509 | 0.678001589 |
| -9.782374621 | 7.735943971 | 3.741475783 | -7.48111721 | -4.440211519 |
| 68.27578339 | 10.78978463 | -23.46839537 | -19.05503542 | 6.278252956 |
| 10.78978463 | 95.69705298 | -48.65833838 | -28.49235651 | 5.262244546 |
| -23.46839537 | -48.65833838 | 118.5412002 | -0.772295576 | -13.21607003 |

| | <u> </u> | | | : | <u> </u> |
|--------------------|---------------------|---------------------|--------------|---|----------|
| | i • | | | | |
| Tata Steel | Paini Finance | NTPC | | | |
| Tata Steel | Bajaj Finance | NIPC | <u>.</u> | | |
| | 0.4422224 | 0.240222502 | | | |
| -0.549744864 | -0.413223124 | -0.218222593 | ļ | | |
| .2314338600585600% | 5.6897041124621500% | 4.9159256050332800% | ļ | | |
| | : : | | | | |
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| | | | ļ | | |
| | | | ļ | | |
| | <u>i</u> | 40 | | | |
| 8 | 9 | 10 | ļ | | |
| 0.019292941 | 0.018288486 | 0.012775893 | | | |
| 0.024363027 | 0.013293163 | 0.012701683 | | | |
| 0.007843305 | 0.003835969 | 0.00853153 | | | |
| 0.006987811 | 0.009558397 | 0.008125095 | | | |
| 0.012221651 | 0.011281057 | 0.013971755 | | | |
| 0.011576414 | 0.007849923 | 0.009102368 | | | |
| 0.005943951 | 0.004230815 | 0.00148732 | | | |
| 0.038861267 | 0.011143784 | 0.022231885 | | | |
| 0.011143784 | 0.047096073 | 0.01185424 | | | |
| 0.022231885 | 0.01185424 | 0.054738229 | | | |
| | | | | | |
| | | | ļ | | |
| | | | | | |
| 8 | 9 | 10 | ļļ. | | |
| -8.355663733 | -5.725492108 | 1.133706566 | | | |
| -13.3354433 | -3.92068317 | 1.257215458 | ļ | | |
| 0.927760513 | 1.533791781 | -3.051269484 | | | |
| 2.233092525 | -5.44147012 | 0.695560591 | | | |
| -10.29643128 | -7.196064152 | -11.76018953 | | | |

| 11/22/2023 | 1457.8000 | 681.2000 | 1204.1000 | 1512.5500 | 2388.2000 | 969.7500 |
|------------|-----------|----------|-----------|-----------|-----------|----------|
| 11/21/2023 | 1439.0000 | 681.7000 | 1201.4000 | 1517.9500 | 2378.9000 | 970.8500 |
| 11/20/2023 | 1436.6000 | 674.3000 | 1188.0000 | 1505.2000 | 2349.3500 | 961.4000 |
| 11/17/2023 | 1437.5500 | 681.5500 | 1194.6000 | 1505.1000 | 2355.5500 | 947.3000 |
| 11/16/2023 | 1444.9000 | 680.4000 | 1189.5500 | 1508.3500 | 2360.7000 | 949.5500 |
| 11/15/2023 | 1410.5000 | 671.5500 | 1180.9000 | 1504.4000 | 2356.4500 | 950.0000 |
| 11/13/2023 | 1373.5500 | 653.2500 | 1177.8000 | 1488.8000 | 2314.6000 | 935.0000 |
| 11/12/2023 | 1388.2000 | 653.5500 | 1178.0000 | 1499.0000 | 2330.6500 | 938.0000 |
| 11/10/2023 | 1368.8500 | 651.0500 | 1179.3500 | 1491.5000 | 2314.9000 | 935.5000 |
| 9/11/2023 | 1374.8000 | 649.3500 | 1176.2000 | 1485.6500 | 2310.5500 | 932.3500 |
| 8/11/2023 | 1391.0000 | 642.5500 | 1176.7000 | 1491.5500 | 2335.9000 | 936.7500 |
| 7/11/2023 | 1404.3000 | 645.0000 | 1170.9500 | 1487.2500 | 2323.8000 | 937.1500 |
| 6/11/2023 | 1403.3000 | 646.0500 | 1150.0000 | 1494.5000 | 2339.0000 | 939.2000 |
| 3/11/2023 | 1389.0500 | 647.5000 | 1141.1000 | 1483.7500 | 2319.7000 | 930.7500 |
| 2/11/2023 | 1370.1500 | 636.4500 | 1132.8500 | 1476.7500 | 2320.2000 | 923.8500 |
| 1/11/2023 | 1354.1500 | 627.7000 | 1116.2000 | 1474.5000 | 2297.4000 | 913.4500 |
| 10/31/2023 | 1368.4000 | 628.6500 | 1088.6000 | 1476.5000 | 2287.9000 | 914.4000 |
| 10/30/2023 | 1377.0500 | 628.5000 | 1115.2000 | 1485.1000 | 2312.5000 | 926.2500 |
| 10/27/2023 | 1380.3500 | 641.0500 | 1111.3000 | 1469.1500 | 2265.8000 | 914.6000 |
| 10/26/2023 | 1359.4500 | 626.5500 | 1103.7000 | 1463.4000 | 2226.5000 | 905.5000 |
| 10/25/2023 | 1370.0500 | 637.8500 | 1120.3000 | 1496.5000 | 2257.9500 | 922.6000 |
| 10/23/2023 | 1408.6500 | 647.3500 | 1122.4500 | 1506.0500 | 2263.2000 | 939.3000 |
| 10/20/2023 | 1427.2500 | 663.2000 | 1142.2000 | 1522.8000 | 2299.1000 | 945.2000 |
| 10/19/2023 | 1433.6500 | 668.8000 | 1141.5000 | 1514.9500 | 2306.1500 | 942.9500 |
| 10/18/2023 | 1440.5500 | 668.5000 | 1153.4000 | 1519.7500 | 2324.0000 | 952.8500 |
| 10/17/2023 | 1442.4500 | 655.7000 | 1136.8000 | 1541.2000 | 2355.2500 | 953.6500 |
| 10/16/2023 | 1434.1500 | 666.2000 | 1135.3000 | 1529.6000 | 2344.0500 | 946.5500 |
| 10/13/2023 | 1431.1500 | 667.1000 | 1145.3000 | 1535.7500 | 2349.3000 | 954.2000 |
| 10/12/2023 | 1465.5000 | 636.9500 | 1130.4000 | 1549.8500 | 2349.4000 | 950.3500 |
| 10/11/2023 | 1494.4000 | 634.0000 | 1128.7500 | 1539.6000 | 2345.0500 | 955.6000 |
| 10/10/2023 | 1495.1500 | 630.5500 | 1126.5000 | 1524.8500 | 2308.4000 | 948.3500 |
| 9/10/2023 | 1475.4500 | 617.3500 | 1123.0500 | 1516.2500 | 2298.2500 | 924.5500 |
| 6/10/2023 | 1478.7000 | 622.4500 | 1127.3000 | 1534.0500 | 2318.0000 | 926.0500 |

| 2521.9000 | 126.1000 | 7128.3500 | 253.6500 | 7.247 | 0.013064628 | -0.00073346 |
|-----------|----------|-----------|----------|-------|--------------|--------------|
| 2505.2500 | 126.2500 | 7103.1500 | 250.0000 | 7.269 | 0.001670611 | 0.010974344 |
| 2506.4500 | 124.3500 | 7068.6000 | 251.0500 | 7.252 | -0.000660847 | -0.010637517 |
| 2528.8000 | 125.2000 | 7221.0000 | 251.6000 | 7.212 | -0.005086857 | 0.001690182 |
| 2491.2000 | 124.7000 | 7362.4500 | 252.3500 | 7.232 | 0.024388515 | 0.013178468 |
| 2486.4000 | 124.0500 | 7224.3000 | 247.3000 | 7.225 | 0.026901096 | 0.028013777 |
| 2478.1500 | 121.0000 | 7360.8500 | 245.7000 | 7.283 | -0.010553234 | -0.000459031 |
| 2491.5500 | 120.8500 | 7456.9000 | 244.5500 | 7.3 | 0.014135954 | 0.003839951 |
| 2486.5500 | 120.0500 | 7444.8000 | 242.7500 | 7.269 | -0.004327902 | 0.002618003 |
| 2476.7000 | 119.6500 | 7386.7000 | 237.9500 | 7.266 | -0.011646298 | 0.010582834 |
| 2519.3500 | 119.0500 | 7459.9500 | 236.7000 | 7.28 | -0.009470911 | -0.00379845 |
| 2496.4500 | 119.6500 | 7495.6000 | 239.1500 | 7.305 | 0.000712606 | -0.001625261 |
| 2497.4000 | 119.4000 | 7562.0500 | 235.8500 | 7.317 | 0.01025881 | -0.002239382 |
| 2509.2500 | 117.3000 | 7411.5000 | 234.3500 | 7.322 | 0.01379411 | 0.017361929 |
| 2486.8000 | 118.1000 | 7449.1000 | 235.2500 | 7.358 | 0.01181553 | 0.01393978 |
| 2472.2500 | 116.6000 | 7471.9000 | 232.6000 | 7.351 | -0.010413622 | -0.001511175 |
| 2484.0000 | 118.7500 | 7492.6500 | 235.8000 | 7.369 | -0.006281544 | 0.000238663 |
| 2478.9000 | 119.1500 | 7503.0500 | 234.6000 | 7.351 | -0.002390698 | -0.019577256 |
| 2482.0500 | 119.9000 | 7507.2000 | 236.6000 | 7.366 | 0.015373864 | 0.023142606 |
| 2476.4000 | 119.9000 | 7421.8000 | 231.6500 | 7.343 | -0.007736944 | -0.017715764 |
| 2477.3000 | 121.3500 | 7694.4500 | 232.0500 | 7.382 | -0.027402123 | -0.014675214 |
| 2483.5000 | 120.0000 | 7798.9000 | 236.5500 | 7.365 | -0.013032055 | -0.023899276 |
| 2495.1500 | 123.1000 | 7769.2000 | 241.0000 | 7.369 | -0.00446413 | -0.008373206 |
| 2548.1000 | 126.0000 | 7841.5500 | 239.5000 | 7.353 | -0.004789837 | 0.000448766 |
| 2548.2500 | 127.1000 | 7866.5500 | 242.0000 | 7.328 | -0.001317203 | 0.019521122 |
| 2556.1500 | 127.4000 | 8093.0000 | 245.9500 | 7.333 | 0.0057874 | -0.015761033 |
| 2558.3000 | 127.0000 | 8036.0000 | 243.4500 | 7.32 | 0.002096216 | -0.001349123 |
| 2569.4500 | 125.0500 | 8051.6500 | 242.0500 | 7.302 | -0.023439099 | 0.047334956 |
| 2557.0000 | 125.9000 | 8014.3000 | 241.6000 | 7.307 | -0.019338865 | 0.004652997 |
| 2556.4000 | 124.9500 | 8101.9500 | 238.7000 | 7.351 | -0.000501622 | 0.005471414 |
| 2516.2000 | 125.3000 | 8083.6000 | 235.9000 | 7.386 | 0.013351859 | 0.021381712 |
| 2511.3000 | 123.8500 | 8027.7000 | 234.7000 | 7.339 | -0.002197877 | -0.008193429 |
| 2499.4000 | 125.9000 | 8168.5500 | 235.5500 | 7.214 | 0.010420582 | 0.004599742 |

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| 0.002247378 | -0.003557429 | 0.00390937 | -0.001133028 | 0.006646043 | -0.001188119 | 0.003547722 | 0.0146 |
| 0.011279461 | 0.008470635 | 0.012577947 | 0.009829415 | -0.000478765 | 0.015279453 | 0.004887814 | -0.004182434 |
| -0.005524862 | 6.64408E-05 | -0.002632082 | 0.014884408 | -0.008838184 | -0.006789137 | -0.02110511 | -0.00218601 |
| 0.004245303 | -0.002154672 | -0.002181556 | -0.002369543 | 0.015093128 | 0.004009623 | -0.019212355 | -0.002972063 |
| 0.007324922 | 0.002625631 | 0.00180356 | -0.000473684 | 0.001930502 | 0.005239823 | 0.01912296 | 0.020420542 |
| 0.002632026 | 0.010478238 | 0.018080878 | 0.016042781 | 0.003329096 | 0.025206612 | -0.018550847 | 0.006512007 |
| -0.000169779 | -0.006804536 | -0.006886491 | -0.003198294 | -0.005378178 | 0.001241208 | -0.012880688 | 0.004702515 |
| -0.001144698 | 0.005028495 | 0.00680375 | 0.002672368 | 0.002010818 | 0.00666389 | 0.001625296 | 0.007415036 |
| 0.002678116 | 0.00393767 | 0.001882669 | 0.00337856 | 0.003977066 | 0.003343084 | 0.007865488 | 0.020172305 |
| -0.000424917 | -0.003955617 | -0.010852348 | -0.004697091 | -0.01692897 | 0.005039899 | -0.009819101 | 0.005280946 |
| 0.004910543 | 0.002891242 | 0.005206989 | -0.000426826 | 0.009173026 | -0.005014626 | -0.004756124 | -0.010244616 |
| 0.018217391 | -0.004851121 | -0.006498504 | -0.002182709 | -0.000380396 | 0.002093802 | -0.0087873 | 0.013991944 |
| 0.007799492 | 0.007245156 | 0.008320041 | 0.0090787 | -0.004722527 | 0.017902813 | 0.020313027 | 0.006400683 |
| 0.007282518 | 0.004740139 | -0.000215499 | 0.007468745 | 0.009027666 | -0.00677392 | -0.00504759 | -0.003825717 |
| 0.014916682 | 0.001525941 | 0.009924262 | 0.011385407 | 0.005885327 | 0.012864494 | -0.003051433 | 0.011392949 |
| 0.025353665 | -0.001354555 | 0.004152279 | -0.001038933 | -0.004730274 | -0.018105263 | -0.002769381 | -0.013570823 |
| -0.023852224 | -0.005790856 | -0.010637838 | -0.012793522 | 0.002057364 | -0.003357113 | -0.001386103 | 0.00511509 |
| 0.003509403 | 0.010856618 | 0.020610822 | 0.012737809 | -0.001269112 | -0.006255213 | -0.000552803 | -0.008453085 |
| 0.006885929 | 0.003929206 | 0.017651022 | 0.010049696 | 0.002281538 | 0 | 0.011506643 | 0.021368444 |
| -0.01481746 | -0.022118276 | -0.013928564 | -0.018534576 | -0.000363299 | -0.011948908 | -0.035434631 | -0.001723766 |
| -0.001915453 | -0.006341091 | -0.002319724 | -0.017779197 | -0.002496477 | 0.01125 | -0.013392914 | -0.019023462 |
| -0.017291192 | -0.010999475 | -0.015614806 | -0.006242065 | -0.004669058 | -0.025182778 | 0.003822787 | -0.01846473 |
| 0.000613228 | 0.005181689 | -0.003057043 | 0.002386129 | -0.020780189 | -0.023015873 | -0.009226492 | 0.006263048 |
| -0.010317323 | -0.003158414 | -0.007680723 | -0.010389883 | -5.88639E-05 | -0.008654603 | -0.003178013 | -0.010330579 |
| 0.014602393 | -0.013917726 | -0.013268231 | -0.000838882 | -0.003090585 | -0.002354788 | -0.027980971 | -0.016060175 |
| 0.001321237 | 0.007583682 | 0.004778055 | 0.007500924 | -0.000840402 | 0.003149606 | 0.007093081 | 0.010269049 |
| -0.008731337 | -0.004004558 | -0.002234708 | -0.008017187 | -0.00433945 | 0.015593762 | -0.001943701 | 0.005783929 |
| 0.013181175 | -0.009097655 | -4.25641E-05 | 0.004051139 | 0.004868987 | -0.00675139 | 0.00466042 | 0.001862583 |
| 0.001461794 | 0.006657573 | 0.001854971 | -0.005493931 | 0.000234705 | 0.007603041 | -0.010818383 | 0.012149141 |
| 0.001997337 | 0.009673083 | 0.015876798 | 0.007644857 | 0.015976472 | -0.002793296 | 0.002270028 | 0.011869436 |
| 0.003071991 | 0.005671888 | 0.004416404 | 0.025742253 | 0.001951181 | 0.011707711 | 0.006963389 | 0.00511291 |
| -0.00377007 | -0.011603272 | -0.008520276 | -0.001619783 | 0.004761143 | -0.016282764 | -0.017242962 | -0.003608576 |
| 0.007327317 | -0.001106951 | 0.00168532 | -0.00301448 | -0.00799746 | 0.005189621 | 0.040460329 | 0.007269617 |

| -0.003026551 | | 6 | -2.658197509 | -7.48111721 |
|--------------|------------------------------|--|-------------------------|---------------------|
| 0.002344181 | | 7 | 0.678001589 | -4.440211519 |
| 0.005546312 | | 8 | -8.355663733 | -13.3354433 |
| -0.002765487 | | 9 | -5.725492108 | -3.92068317 |
| 0.000968858 | | 10 | 1.133706566 | 1.257215458 |
| -0.007963751 | | | | |
| -0.002328767 | | | | |
| 0.004264686 | | | | |
| 0.000412882 | Unit Vector | e = | 1 | 1 |
| -0.001923077 | Vector for respective return | r = | 5.6349% | 6.4200% |
| -0.003422313 | | | | |
| -0.001640016 | Risk minimizing Vector | h = e * C^-1 | 3.001006839 | -1.237878788 |
| -0.000682874 | Return maximizing Vector | g = r * C^-1 | 0.130865964 | 0.342171391 |
| -0.004892634 | | ······································ | | |
| 0.000952251 | | | | |
| -0.002442665 | | alpha = | e * h | 133.1242112 |
| 0.002448646 | | beta = | e * g | 6.958296466 |
| -0.002036383 | | gamma = | r*g | 0.423073589 |
| 0.003132235 | | delta = | alpha * gamma - beta ^2 | 7.903448097 |
| -0.005283121 | | | | |
| 0.002308215 | | | | |
| -0.000542814 | | | Infosys Pvt Ltd. | TATA Motors |
| 0.002175983 | | | | |
| 0.003411572 | | Tangent Portfolio | 0.00595187 | 0.250391892 |
| -0.000681849 | | | | |
| 0.001775956 | | | | |
| 0.002465078 | | Efficient Portfolio Frontier | | Capital Market Line |
| -0.000684275 | | Risk | Return | Risk |
| -0.00598558 | | 0.231366062 | 0.00% | 0.00% |
| -0.004738695 | | 0.227565975 | 0.10% | 0.30% |
| 0.006404142 | | 0.223776627 | 0.20% | 0.60% |
| 0.017327419 | | 0.219998574 | 0.30% | 0.90% |
| -0.003315833 | | 0.216232407 | 0.40% | 1.20% |

| 4.3968% | | 12.00% | | |
|--------------|--------------|------------------------|---------------|--|
| 4.3101% | | 14.00% | | |
| 4.2234% | : | 16.00% | | |
| 4.1367% | : | 18.00% | | |
| 4.0500% | | 40.000/ | | |
| Return | | | CI | ML |
| | | | | |
| 0.469231939 | 0.680914514 | 0.331818345 | -1.211224816 | 0.312769204 |
| | | | | |
| Sun Pharma | HDFC Bank | Reliance Industries | Bharti Airtel | Hindustan Unilever |
| | | Mu = | 0.638257439 | |
| | | Lambda = | -0.025849426 | $\lambda = \frac{\gamma - \beta \times R^*}{\delta}$ |
| | | Slope of CML = | 0.012138842 | ~_ R v D* |
| | | Tangency Risk = | 409.12% | $\beta - \alpha \times rJ$ |
| | | Tangency Return (R*) = | 9.02% | $\mathbf{R}^* = \frac{\gamma - \beta \times rf}{\beta - \alpha \times rf}$ |
| | \$ | | | |
| 2.2040/0301 | 2.490310114 | 0.406291301 | -2.204303340 | 2.03912212 |
| 2.284878361 | 2.490316114 | 0.408291361 | -2.284569346 | 2.83912212 |
| 38.2642408 | 35.14771514 | -2.755316342 | -9.552187399 | 58.00212326 |
| 5.2556% | 5.3991% | 5.7737% | 2.7314% | 4.6946% |
| 1 | 1 | 1 | 1 | 1 |
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| -3.051269484 | 0.695560591 | -11.76018953 | -0.411137359 | 6.037422428 |
| 1.533791781 | -5.44147012 | -7.196064152 | 1.613503318 | -2.039504575 |
| 0.927760513 | 2.233092525 | -10.29643128 | -2.602262431 | -5.855757916 |
| 6.278252956 | 5.262244546 | -13.21607003 | -18.0125834 | 83.31032918 |
| -19.05503542 | -28.49235651 | -0.772295576 | 68.3192947 | -18.0125834 |

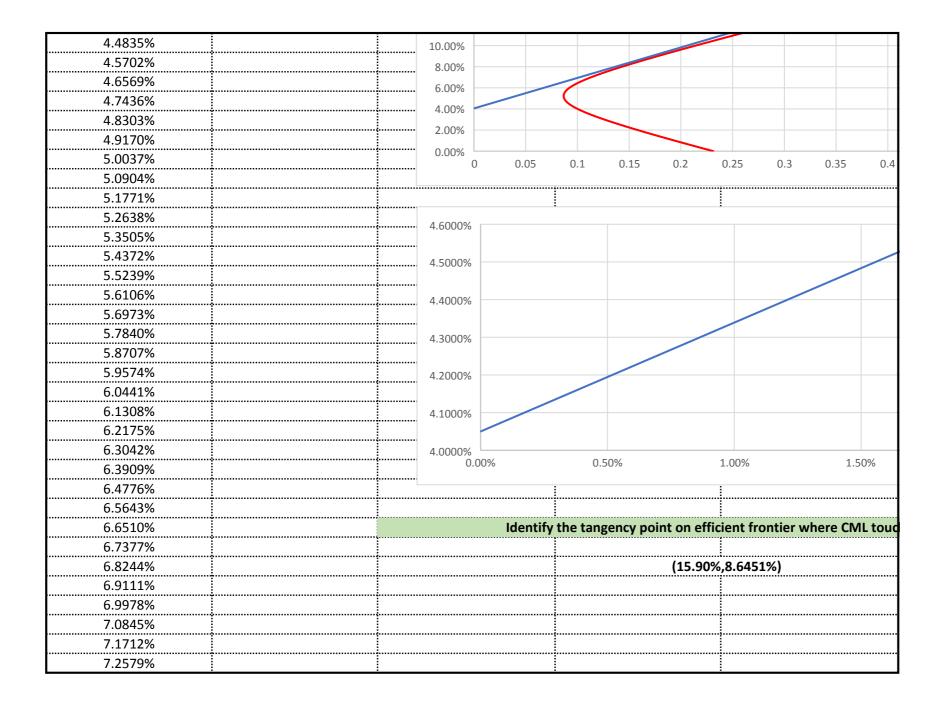
| -2.602262431 | 1.613503318 | -0.411137359 | | | 1 | |
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| -5.855757916 | -2.039504575 | 6.037422428 | | | | |
| 49.34448693 | 1.390064125 | -12.5537391 | _ | | | |
| 1.390064125 | 27.36840094 | -2.052908716 | | | | |
| -12.5537391 | -2.052908716 | 26.53410312 | | | | |
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| 6.2314% | 5.6897% | 4.9159% | | | | |
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| 0.896106343 | 5.529637323 | 5.828763974 | | | | |
| 0.438706526 | 0.288205635 | 0.020308339 | | | | |
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| $\mu = rac{lpha R^* - eta}{\delta}$ | | | | | | |
| 0 | | Sharpe Ratio | | | | |
| | | 4.5220E + 00 | | | | |
| $\mu = \frac{tangency\ return - rf}{tangencyrisk}$ | | | | | | |
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| Tata Steel | Bajaj Finance | NTPC | | | | |
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| 0.256843869 | 0.041011438 | -0.137708256 | 1 | | | |
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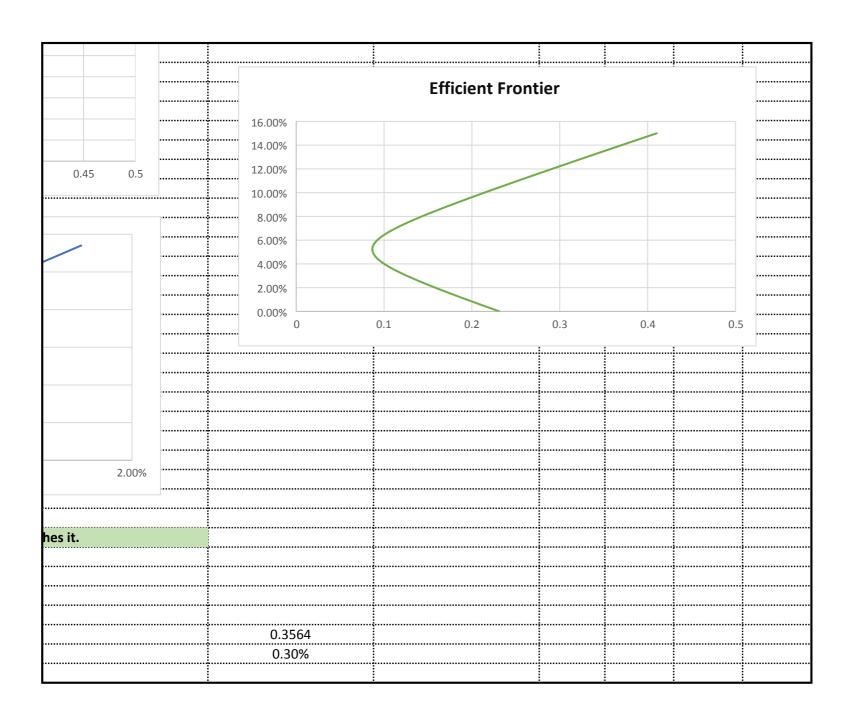
| 5/10/2023 | 1463.4500 | 619.6000 | 1119.1000 | 1535.7500 | 2314.1000 | 928.8500 |
|-----------|-----------|----------|-----------|-----------|-----------|----------|
| 4/10/2023 | 1444.3500 | 613.6000 | 1123.8000 | 1529.5500 | 2314.1500 | 924.2500 |
| 3/10/2023 | 1434.0000 | 620.4500 | 1141.4500 | 1508.0500 | 2318.1500 | 925.3000 |
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| 2519.5500 | | 7850.9000 | 233.8500 | 7.238 | | | 0.013223942 | 0.009778357 |
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| 2507.8500 | | 7854.0500 | 235.1500 | 7.235 | | | 0.007217573 | -0.011040374 |
| 2468.9000 | 128.0000 | 7967.6000 | 241.2000 | | | | - | - |
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| -0.004182239 | 0.00405348 | -2.16062E-05 | 0.004977008 | 0.004665351 | -0.000399042 | -0.000401067 | -0.005528386 |
|--------------|-------------|--------------|--------------|-------------|--------------|--------------|--------------|
| -0.015462789 | 0.014256822 | -0.001725514 | -0.001134767 | 0.015776257 | -0.02109375 | -0.014251468 | -0.025082919 |
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| 0.000414651 | 0.212478758 | 0.50% | 1.50% |
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| - | 0.208738303 | 0.60% | 1.80% |
| - | 0.205011763 | 0.70% | 2.10% |
| | 0.201299912 | 0.80% | 2.40% |
| | 0.197603578 | 0.90% | 2.70% |
| | 0.193923648 | 1.00% | 3.00% |
| | 0.190261072 | 1.10% | 3.30% |
| | 0.186616875 | 1.20% | 3.60% |
| | 0.182992152 | 1.30% | 3.90% |
| | 0.179388086 | 1.40% | 4.20% |
| | 0.175805945 | 1.50% | 4.50% |
| | 0.172247099 | 1.60% | 4.80% |
| | 0.168713021 | 1.70% | 5.10% |
| | 0.165205301 | 1.80% | 5.40% |
| | 0.161725654 | 1.90% | 5.70% |
| | 0.158275931 | 2.00% | 6.00% |
| | 0.154858133 | 2.10% | 6.30% |
| | 0.151474419 | 2.20% | 6.60% |
| | 0.148127127 | 2.30% | 6.90% |
| | 0.144818782 | 2.40% | 7.20% |
| | 0.141552114 | 2.50% | 7.50% |
| | 0.138330077 | 2.60% | 7.80% |
| | 0.135155861 | 2.70% | 8.10% |
| | 0.132032916 | 2.80% | 8.40% |
| | 0.128964968 | 2.90% | 8.70% |
| | 0.125956034 | 3.00% | 9.00% |
| | 0.123010445 | 3.10% | 9.30% |
| | 0.120132862 | 3.20% | 9.60% |
| | 0.117328287 | 3.30% | 9.90% |
| | 0.114602081 | 3.40% | 10.20% |
| | 0.111959969 | 3.50% | 10.50% |
| | 0.109408043 | 3.60% | 10.80% |
| | 0.10695276 | 3.70% | 11.10% |





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| | | 0.104600924 | 3.80% | 11.40% |
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| | | 0.102359668 | 3.90% | 11.70% |
| | | 0.100236408 | 4.00% | 12.00% |
| | | 0.098238795 | 4.10% | 12.300% |
| | <u> </u> | 0.096374644 | 4.20% | 12.60% |
| | | 0.094651839 | 4.30% | 12.90% |
| | | 0.09307823 | 4.40% | 13.20% |
| | | 0.091661502 | 4.50% | 13.50% |
| | | 0.090409029 | 4.60% | 13.80% |
| | | 0.089327721 | 4.70% | |
| | | 0.088423858 | 4.80% | 14.10% 14.40% |
| | | 0.087702925 | 4.90% | 14.70% |
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| | | 0.087109402 | 5.10% | 15.00% 15.30% |
| | | 0.086677577 | 5.20% | 15.60% |
| | | 0.086722415 | 5.30% | 15.90% |
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| | | 0.087392163 0.088012658 | 5.60% | |
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| | 0.127337336 | 7.50% | 22.50% |
| | 0.130374029 | 7.60% | 22.80% |
| | 0.133467845 | 7.70% | 23.10% |
| | 0.136614901 | 7.80% | 23.40% |
| | 0.139811604 | 7.90% | 23.70% |
| | 0.143054624 | 8.00% | 24.00% |
| | 0.146340883 | 8.10% | 24.30% |
| | 0.149667533 | 8.20% | 24.60% |
| | 0.153031938 | 8.30% | 24.90% |
| | 0.157800934 | 8.44% | 25.20% |
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| | 0.163328232 | 8.60% | 25.80% |
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| 0.23693849 | 10.60% | 31.80% |
| 0.24076286 | 10.70% | 32.10% |
| 0.244596299 | 10.80% | 32.40% |
| 0.248438386 | 10.90% | 32.70% |
| 0.252288726 | 11.00% | 33.00% |
| 0.256146948 | 11.10% | 33.30% |
| 0.2600127 | 11.20% | 33.60% |
| 0.263885651 | 11.30% | 33.90% |
| 0.267765489 | 11.40% | 34.20% |
| 0.271651919 | 11.50% | 34.50% |
| 0.275544662 | 11.60% | 34.80% |
| 0.279443454 | 11.70% | 35.10% |
| 0.283348045 | 11.80% | 35.40% |
| 0.287258199 | 11.90% | 35.70% |
| 0.291173692 | 12.00% | 36.00% |
| 0.295094312 | 12.10% | 36.30% |
| 0.299019856 | 12.20% | 36.60% |
| 0.299019856 | 12.20% | 36.90% |
| 0.306884962 | 12.40% | 37.20% |
| 0.310824169 | 12.50% | 37.50% |
| 0.31476759 | 12.60% | 37.80% |
| 0.318715069 | 12.70% | 38.10% |
| 0.322666457 | 12.80% | 38.40% |
| 0.326621612 | 12.90% | 38.70% |
| 0.330580398 | 13.00% | 39.00% |
| 0.334542687 | 13.10% | 39.30% |
| 0.338508356 | 13.20% | 39.60% |
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| 0.358383468 | 13.70% | 41.10% |
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| 0.362367125 | 13.80% | 41.40% |
| 0.366353442 | 13.90% | 41.70% |
| 0.370342332 | 14.00% | 42.00% |
| 0.374333714 | 14.10% | 42.30% |
| 0.378327508 | 14.20% | 42.60% |
| 0.382323639 | 14.30% | 42.90% |
| 0.386322034 | 14.40% | 43.20% |
| 0.390322624 | 14.50% | 43.50% |
| 0.394325342 | 14.60% | 43.80% |
| 0.398330123 | 14.70% | 44.10% |
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| Market index | Market Index | | | | | | |
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| 21,731.40 | 0.009952732 | | | | | | |
| 21,778.70 | 0.004306913 | Market Index | 0.009952732 | -0.012638787 | 0.034553654 | -0.002139207 | |
| 21,654.75 | 0.004438945 | 0.009952732 | 0.000044258 | | | | |
| 21,441.35 | 0.004959776 | -0.012638787 | -1.66953E-05 | 0.000194844 | | | |
| 21,349.40 | -0.014121502 | 0.034553654 | 8.63812E-06 | 7.11803E-05 | 0.000213754 | | |
| 21,255.05 | 0.001608411 | -0.002139207 | 1.49902E-06 | 1.13483E-05 | 5.54859E-05 | 8.61744E-05 | |
| 21,150.15 | -0.001771013 | | | | | | |
| 21,453.10 | 0.012932723 | | | | | | |
| 21,418.65 | 0.012250106 | beta | capm ret | actual ret | alpha | | |
| 21,456.65 | 0.000954253 | 0 | 0 | 0 | | | |
| 21,182.70 | -0.004319644 | -0.377227268 | -0.00086 | 0.001317234 | 0.002179072 | | |
| 20,926.35 | 0.001320972 | 0.195176411 | 0.000257093 | 0.00393253 | 0.003675437 | | |
| 20,906.40 | 0.003265371 | 0.033870114 | -6.56278E-05 | 0.001683438 | 0.001749066 | | |
| 20,997.10 | -0.001745655 | | | | | | |
| 20,969.40 | 0.003960662 | Data (CA) | DM 1) | | | 0.22 | |
| 20,901.15 | 0.008135623 | Beta (CA) | PM - V.1 | R. = | $= R_f + \beta(R)$ | $R_{\rm m} - R_{\rm f}$ | |
| 20,937.70 | 0.02066815 | | | 14 | rel . b(r | m 14) | |
| 20,855.10 | 0.006692942 | | - | | | | |
| 20,686.80 | 0.001818716 | 0 | o_{im} | | | | |
| 20,267.90 | 0.010402369 | $\beta_i =$ | -2 | Wh | ere: | | |
| 20,133.15 | 0.004799264 | , , | σ_m^2 | | | | |
| 20,096.60 | -0.00036865 | | 116 | R c = | Risk free | e rate | |
| 19,889.70 | -0.000497177 | | | | | | |
| 19,794.70 | 0.001438074 | $\beta_i = Be$ | | B = | Beta of the | ne securit | V |
| 19,802.00 | 0.004539454 | $\sigma_{im} = Covariance \ of \ s$ | | Ket | | | * |
| 19,811.85 | -0.001915689 | $\sigma_i = Standard de$ | | R = | = Expecte | d Market | Retu |
| 19,783.40 | -0.001689839 | $\sigma_m = Standard devi$ | ation of the mark | et 1cm | LAPCCIC | d William | LUCU |
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| Annual Return | 0.00181 | | | 0.001683438 | | | | | <u>.</u> |
| Beta | 1 | | | 0.033870114 | | | <u>.</u> | | <u>.</u> |
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