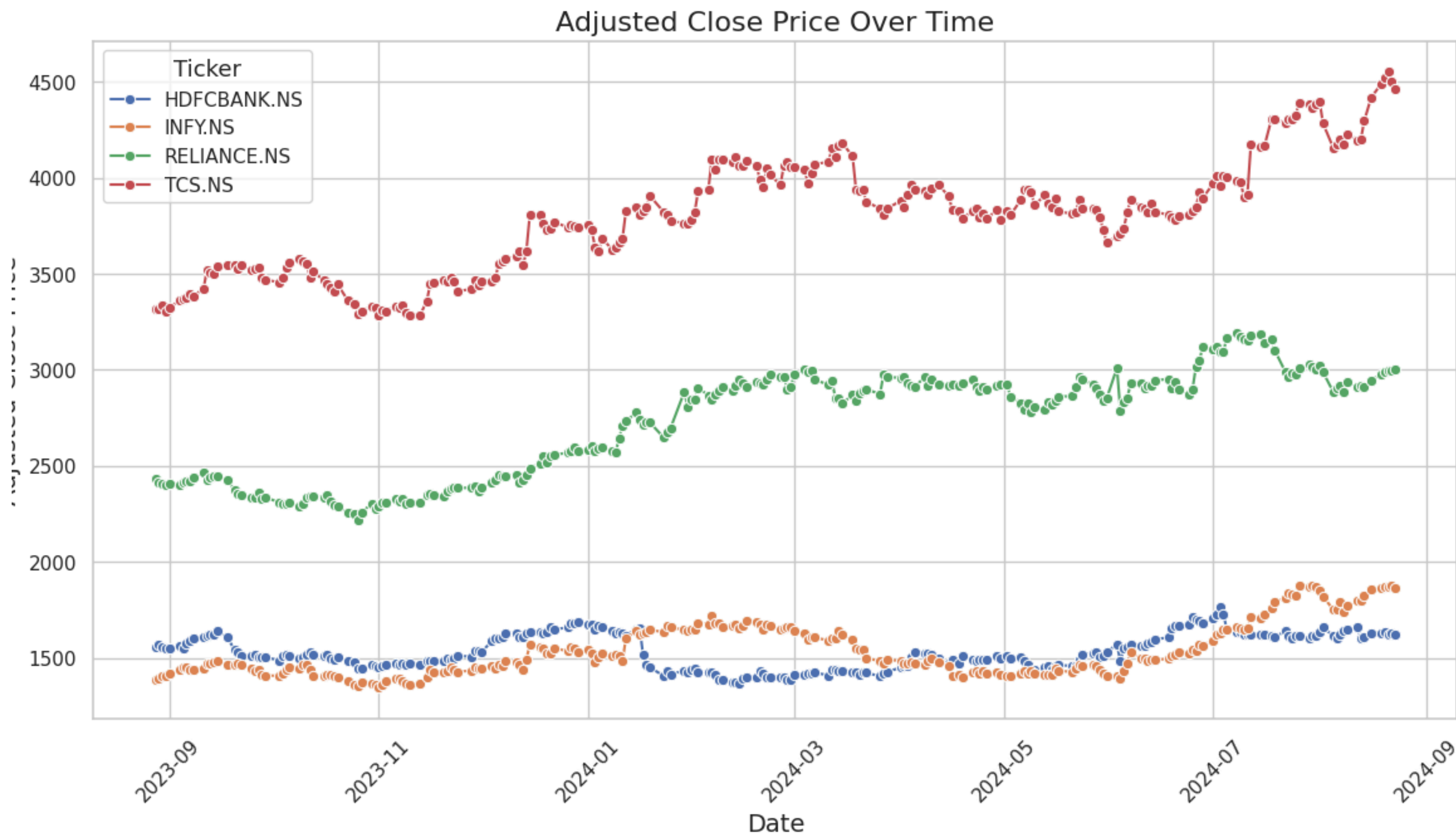


PYTHON PROJECT ON STOCK MARKET PORTFOLIO

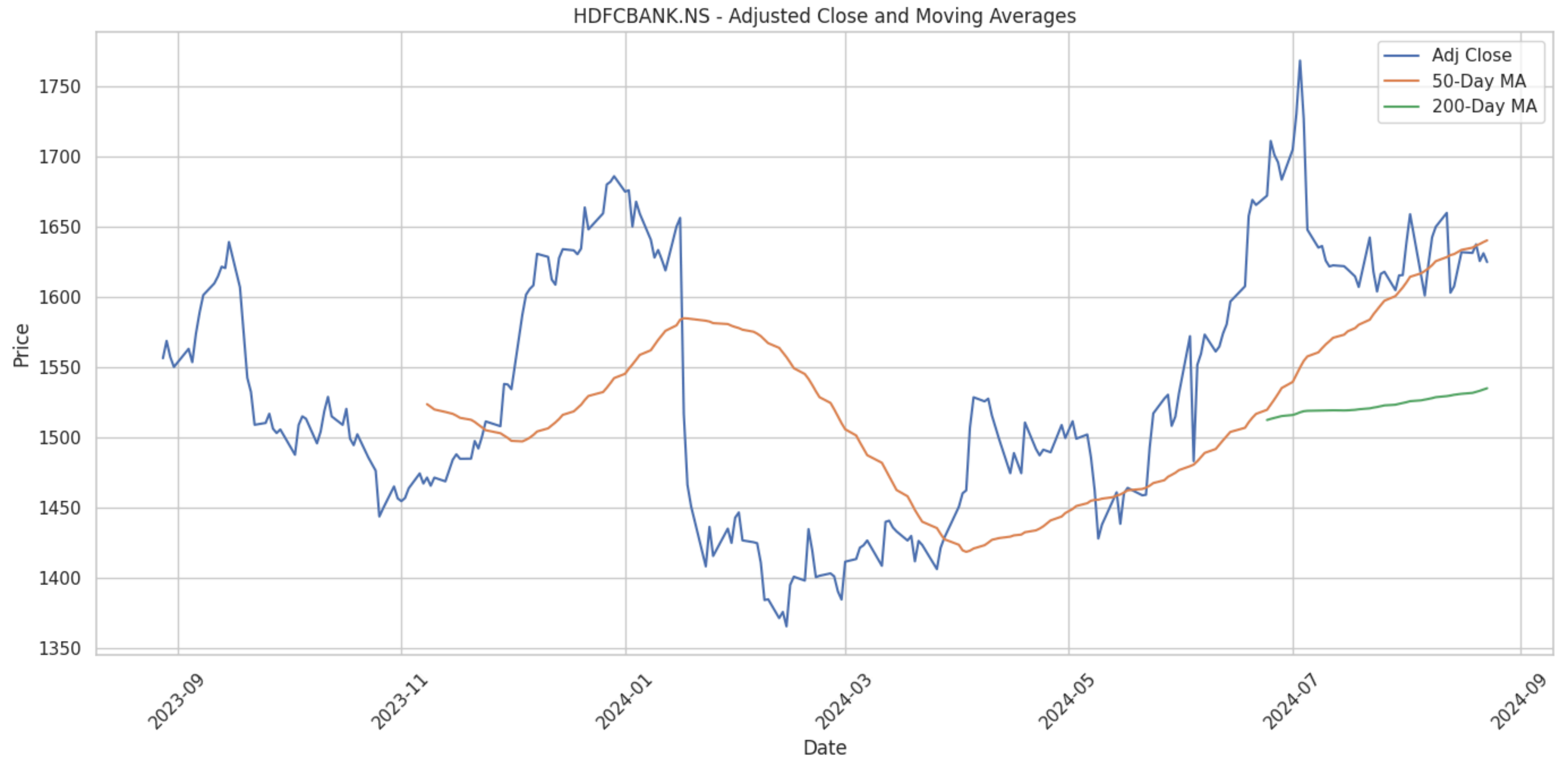


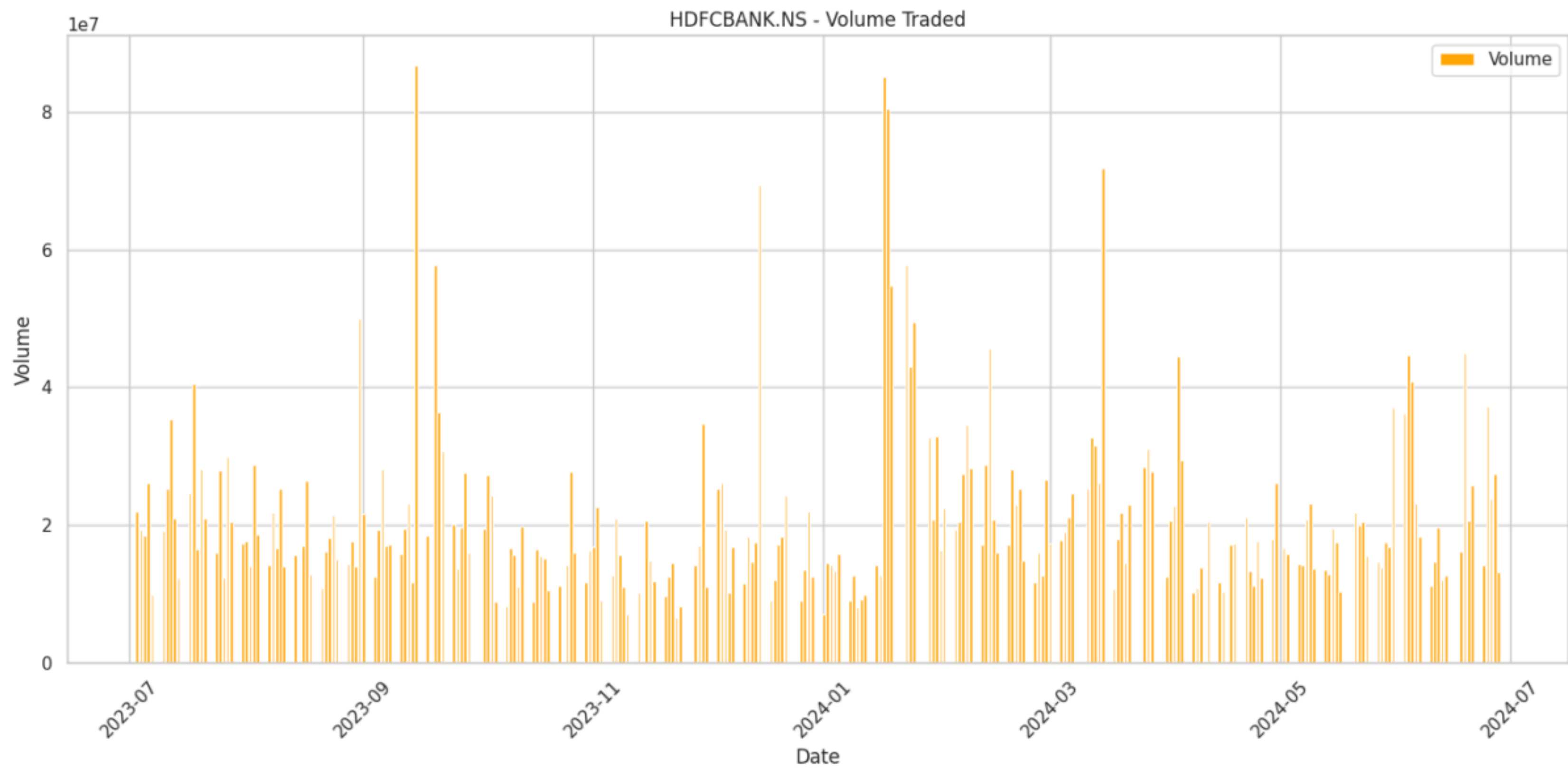
DISHANT SALUNKE

HAVE A LOOK AT THE STOCK MARKET PERFORMANCE OF THESE COMPANIES IN THE STOCK MARKET OVER TIME

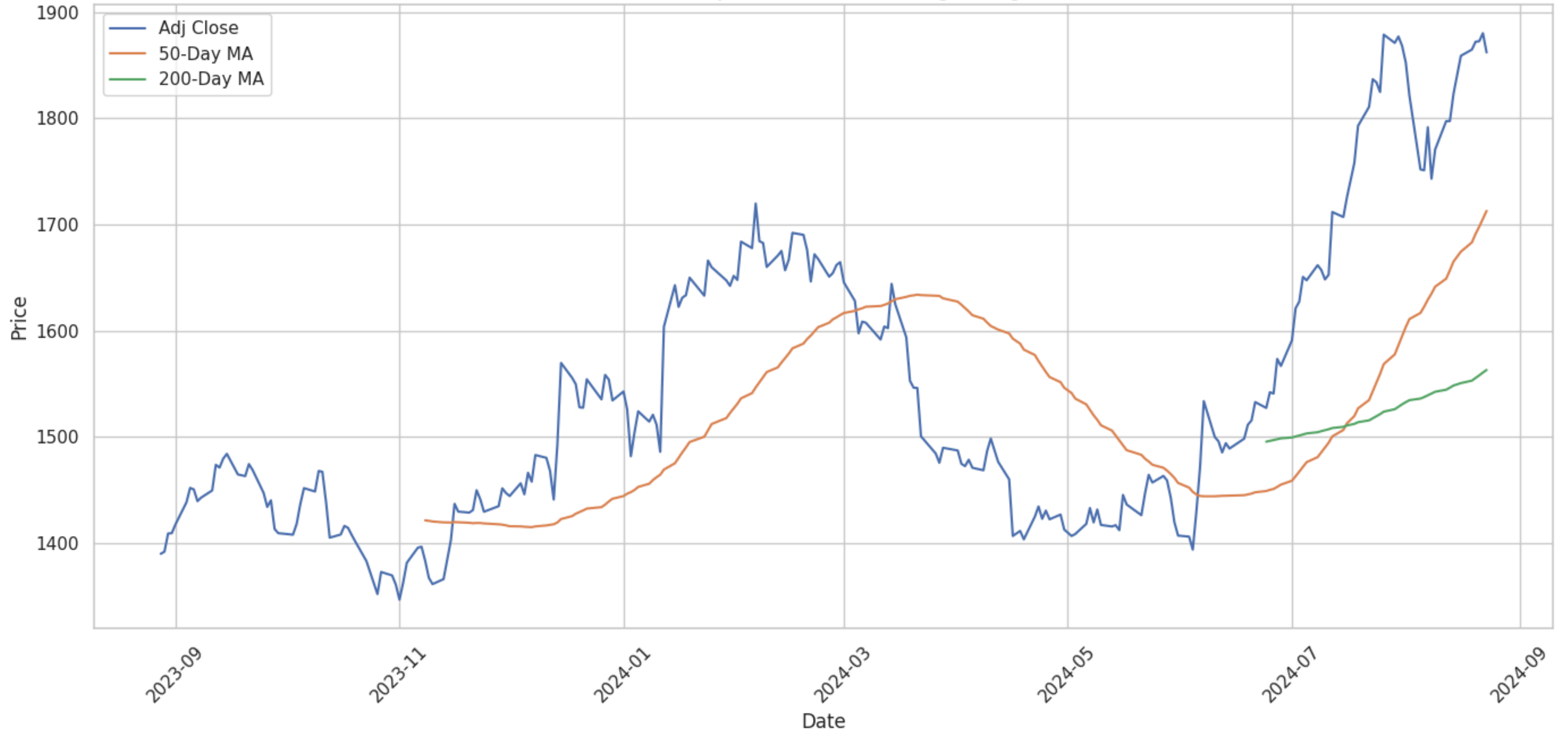


ADJUSTED CLOSE PRICE FOR EACH STOCK WITH THE 50-DAY AND 200-DAY MOVING AVERAGES





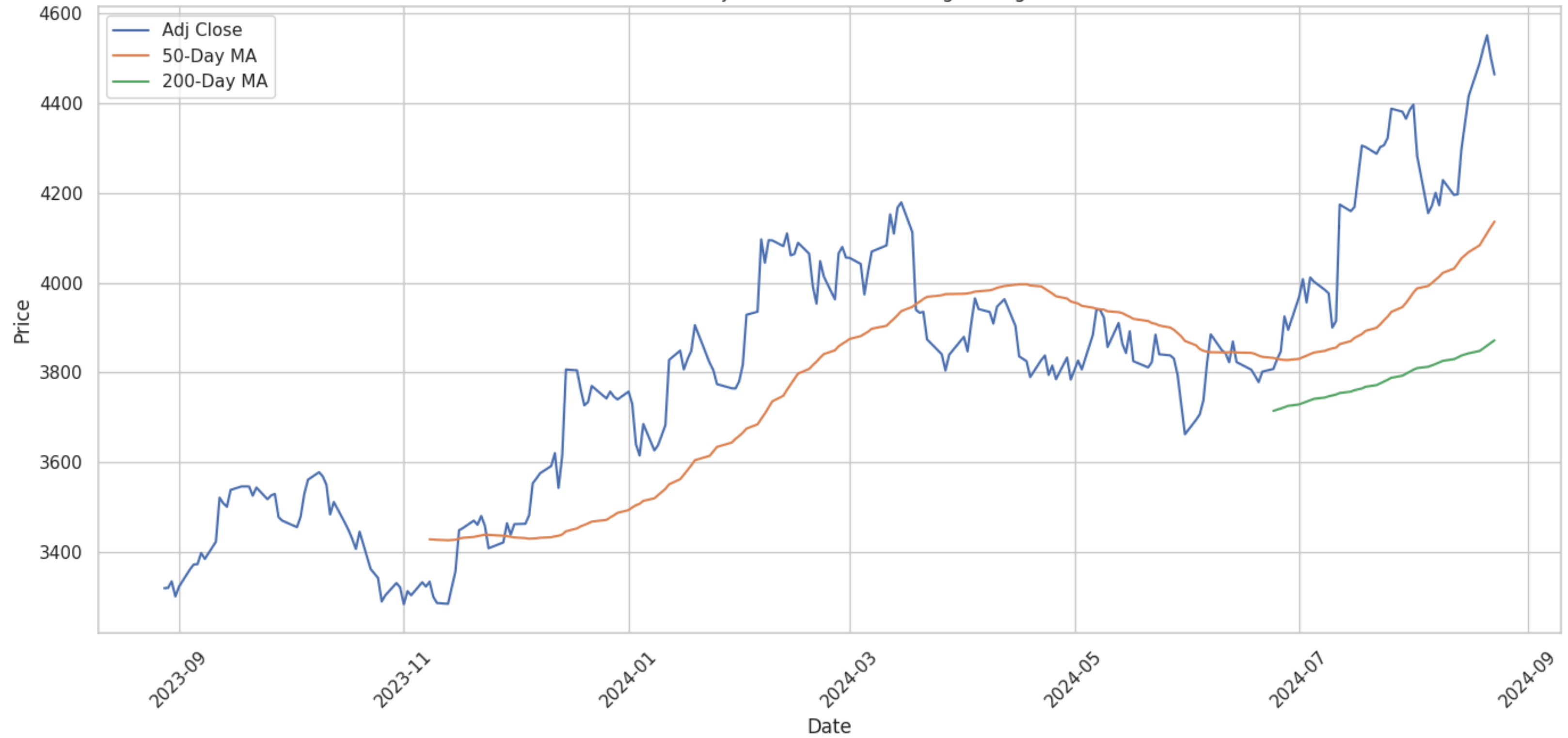
INFY.NS - Adjusted Close and Moving Averages



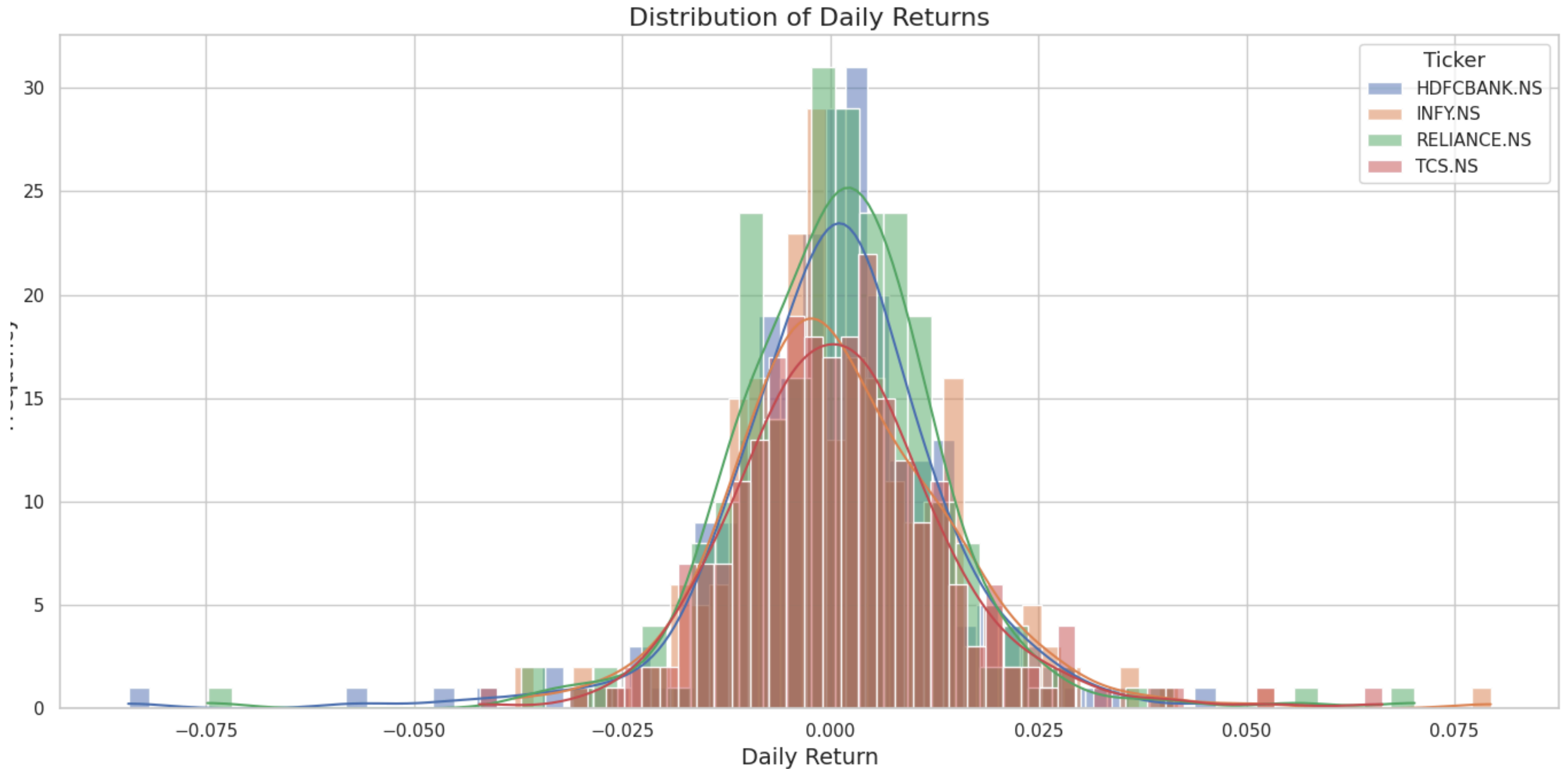
RELIANCE.NS - Adjusted Close and Moving Averages

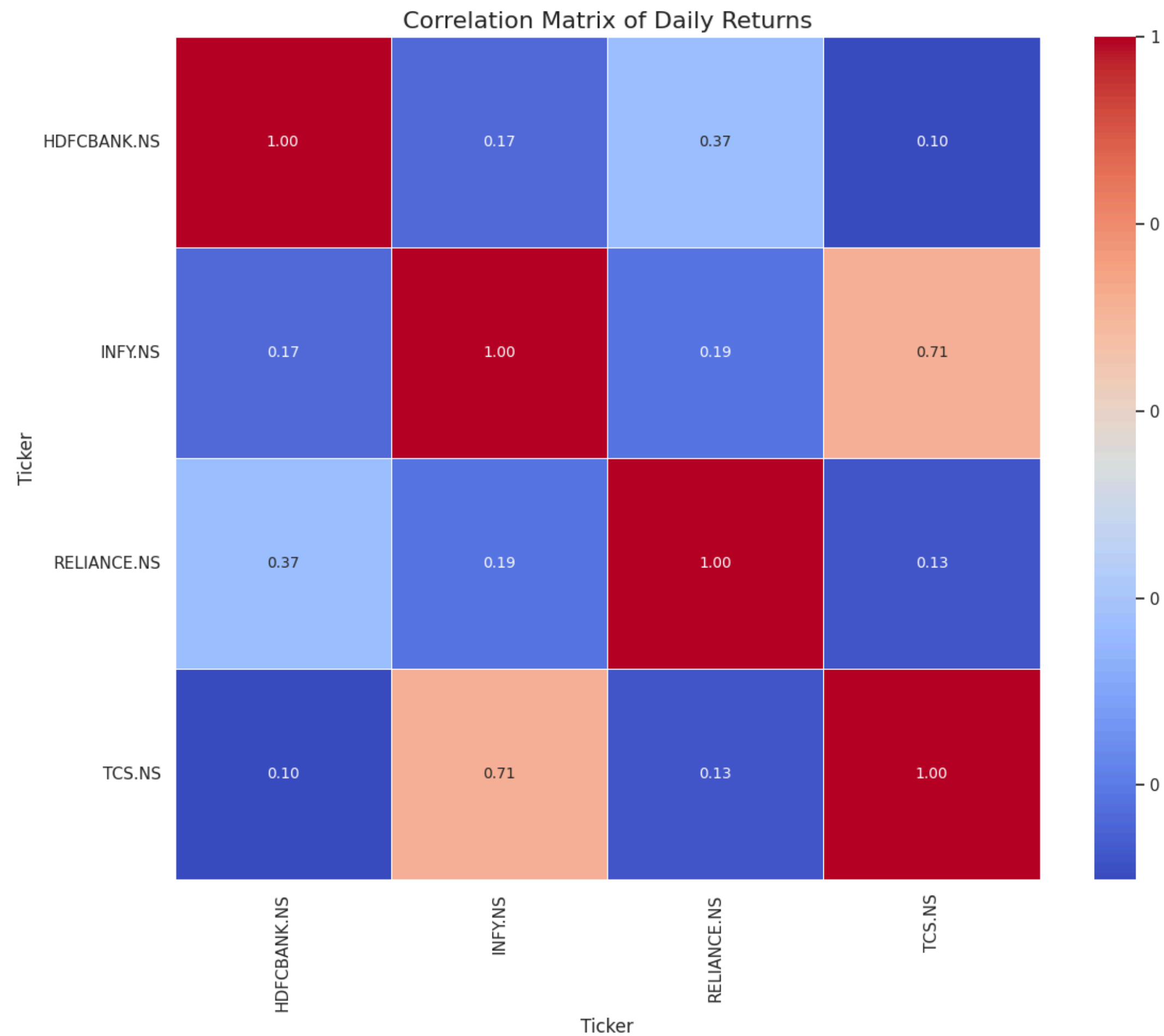


TCS.NS - Adjusted Close and Moving Averages

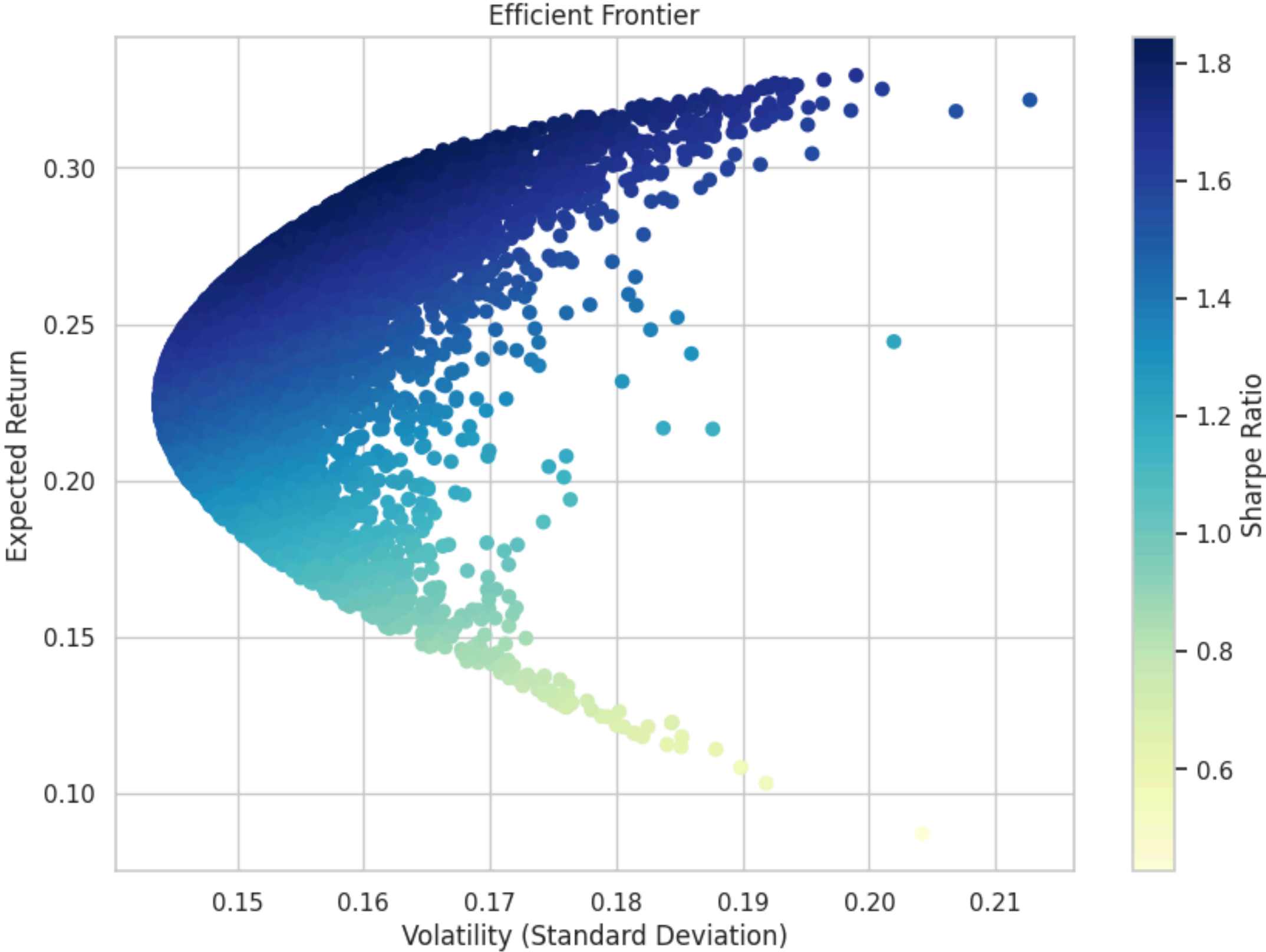


THE DISTRIBUTIONS ARE APPROXIMATELY NORMAL, CENTRED AROUND ZERO, WHICH INDICATES THAT MOST DAILY RETURNS ARE CLOSE TO THE AVERAGE RETURN. HOWEVER, THERE ARE TAILS ON BOTH SIDES, WHICH REFLECT OCCASIONAL SIGNIFICANT GAINS OR LOSSES. INFY AND RELIANCE APPEAR TO HAVE SLIGHTLY WIDER DISTRIBUTIONS, WHICH SUGGESTS HIGHER VOLATILITY COMPARED TO HDFCBANK AND TCS





EACH DOT REPRESENTS A PORTFOLIO, WITH THE COLOUR INDICATING THE SHARPE RATIO, A MEASURE OF RISK-ADJUSTED RETURN. PORTFOLIOS ON THE LEFTMOST EDGE OF THE FRONTIER (CLOSER TO THE Y-AXIS) OFFER THE HIGHEST EXPECTED RETURNS FOR A GIVEN LEVEL OF VOLATILITY, WHICH REPRESENT OPTIMAL PORTFOLIOS. THE GRADIENT SHOWS THAT PORTFOLIOS WITH HIGHER SHARPE RATIOS (DARKER BLUE) PROVIDE BETTER RISK-ADJUSTED RETURNS.



THE OUTPUT SHOWS A DIVERSIFIED PORTFOLIO WITH THE FOLLOWING ALLOCATIONS:

HDFCBANK (30.85%)
INFY (10.59%)
RELIANCE (18.02%)
AND TCS (40.53%).

TCS HAS THE HIGHEST ALLOCATION, WHICH INDICATES ITS SIGNIFICANT CONTRIBUTION TO THE PORTFOLIO’S PERFORMANCE, WHILE INFY HAS THE SMALLEST ALLOCATION. THIS BALANCED ALLOCATION AIMS TO MAXIMIZE RETURNS WHILE MINIMIZING RISK BY LEVERAGING INDIVIDUAL STOCK PERFORMANCES AND THEIR CORRELATIONS.

	Ticker	Weight
0	HDFCBANK.NS	0.308527
1	INFY.NS	0.105945
2	RELIANCE.NS	0.180185
3	TCS.NS	0.405343

SUMMARY

THIS IS HOW STOCK MARKET PORTFOLIO OPTIMIZATION WORKS. STOCK MARKET PORTFOLIO OPTIMIZATION INVOLVES ANALYZING PRICE TRENDS, CALCULATING EXPECTED RETURNS AND VOLATILITIES, AND DETERMINING THE CORRELATIONS BETWEEN DIFFERENT STOCKS TO ACHIEVE DIVERSIFICATION.