

IRONHACK MID BOOTCAMP PROJECT

UNLOCKING INVESTMENT OPPORTUNITIES

DATA ANALYTICS ON STOCKS, SECTORS AND
THE NIFTY 50 INDEX

ABOUT THE PROJECT



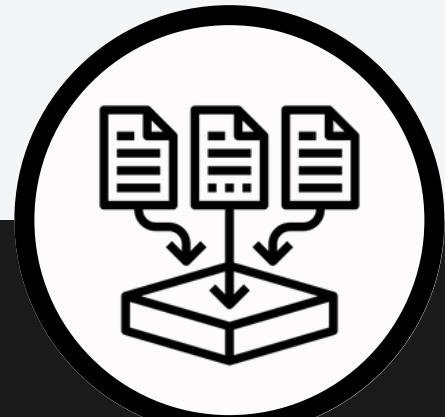
The Nifty 50 is a benchmark Indian stock market index that represents the weighted average of 50 of the largest Indian companies listed on the National Stock Exchange.



This project focuses on exploring the performance of 12 Nifty50 stocks from three sectors: Automotive Industry, Health Care, and Banking and Finance.



METHODOLOGY



Historical data with opening, and closing prices and the volume traded of 12 stocks for the last decade across three major sectors in India was collected from Yahoo Finance.

DATA COLLECTION



- The datasets were already clean and had to be merged on top of each other.
- Dropping columns like Adj. Close which wasn't required for the analysis.

DATA CLEANING



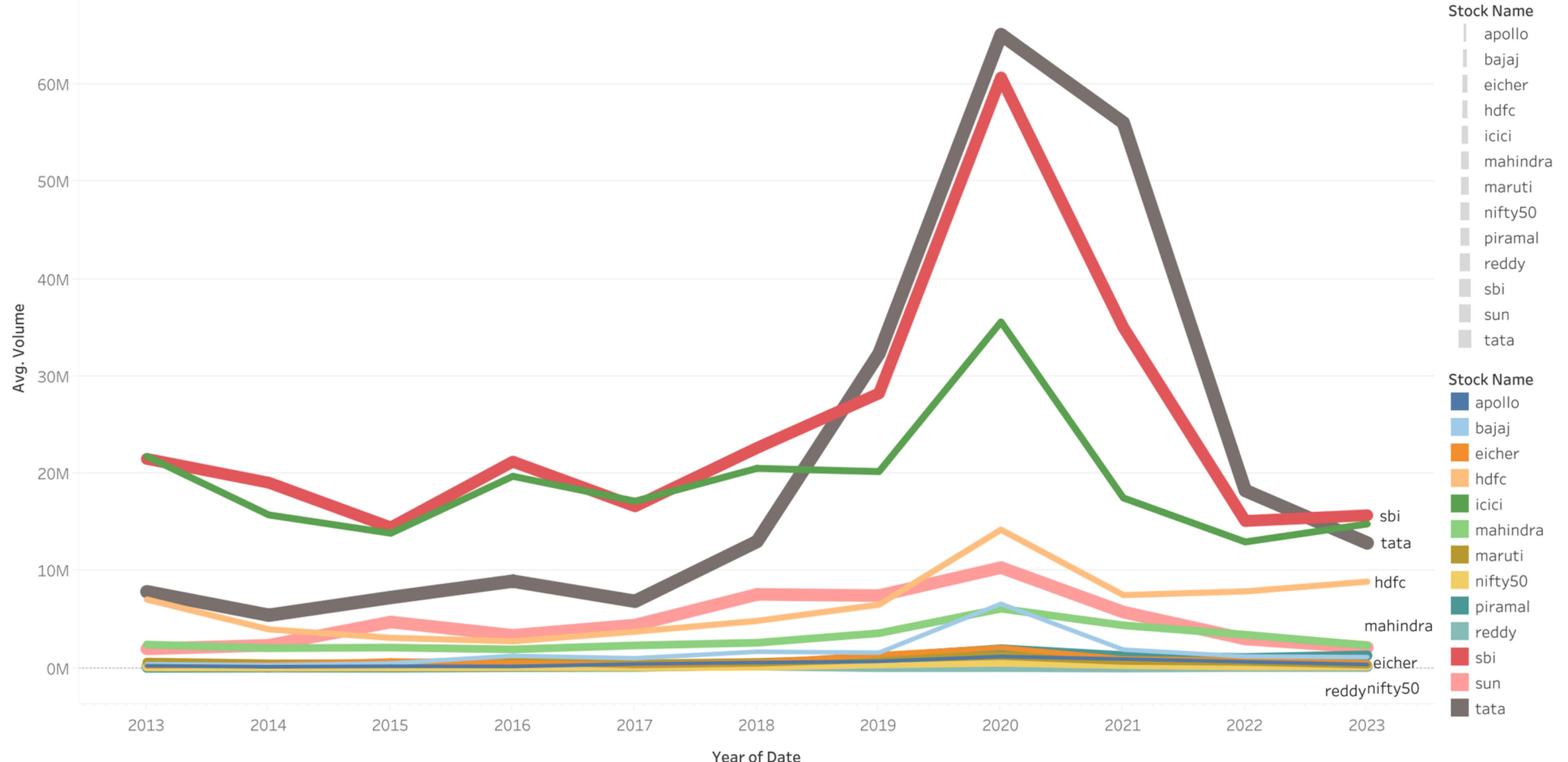
- Jupyter Notebook and Tableau were used to analyze the data.
- The analysis is used to solve our problem statement and improve decision-making.

DATA ANALYSIS

1. STOCK MARKET TRENDS

Which stocks have been the most attractive for Indian investors/traders among all?

Average Annual Volume Traded of Stocks



STOCK MARKET TRENDS:INFERENCE

- SBI Bank, followed by ICICI bank are the most traded stocks in 2023.
- Tata Motors was in troublesome waters because of the global shortage of semiconductor chips that they use in their products. Tata Motors has reported a consolidated net loss of Rs 28,826.23 crore during the financial year 2018-19. We can observe a huge volume of Tata Motors was traded between 2018-2020.

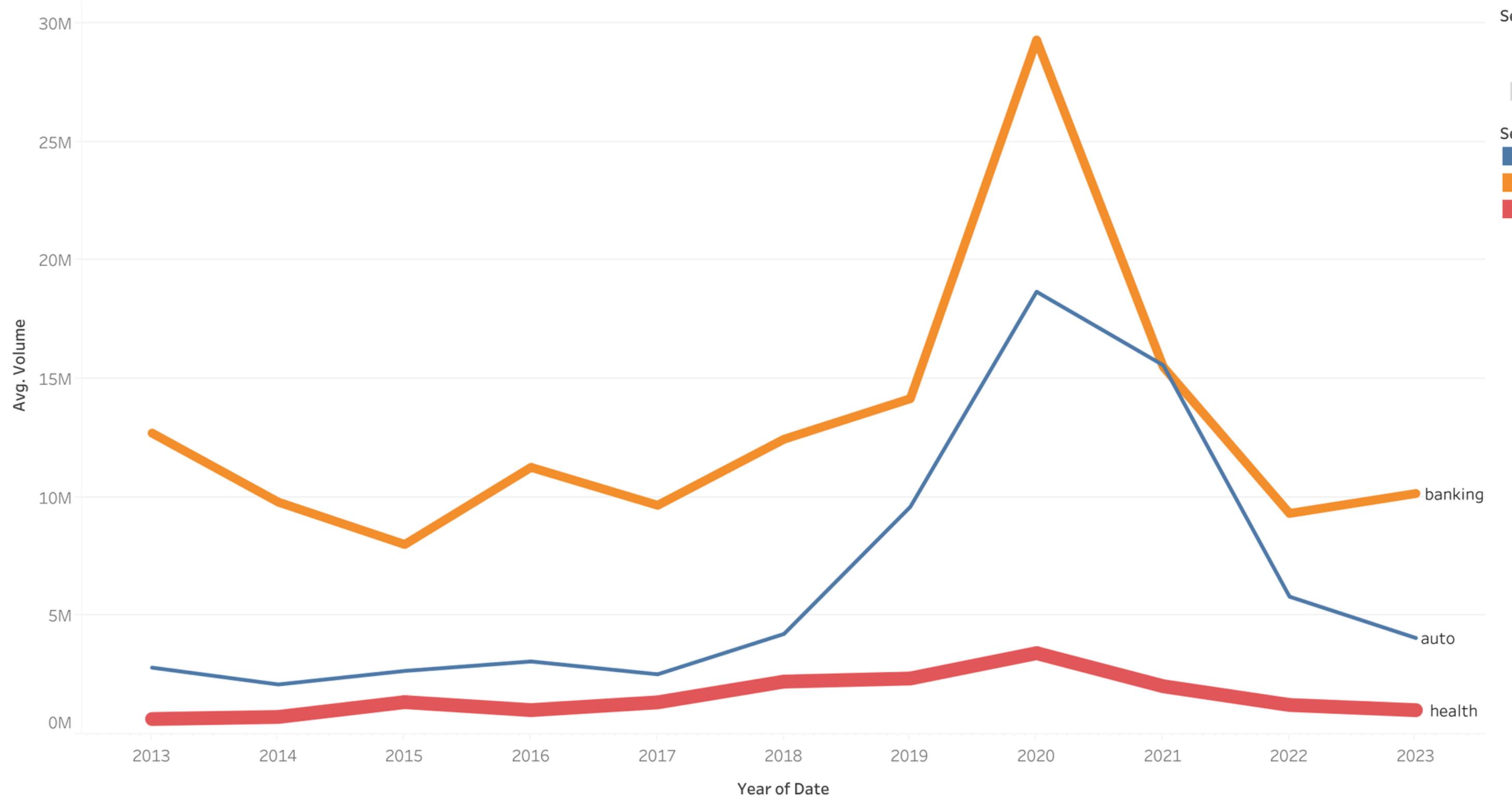


2. SECTOR TRENDS

Which sector has been the most attractive for Indian investors/traders among the three?

Which sectors or industries have shown the strongest performance?

Average Annual Volume Traded of Sectors



SECTOR TRENDS:INFERENCE

- Very evidently, the banking sector from our database has been the most popular sector for traders in India followed by Auto & Health
- SBI is a public sector bank and the largest bank in India with a 23% market share by assets and a 25% share of the total loan and deposits market. By merging all the associate entities, SBI observed high trading values during 2019-2020. ICICI Bank, another leading private bank in India also saw high trading volumes during the same time. Thus, we observe the jump in trading volume between 2019-2020.



3. SHORT TERM TRADING ANALYSIS

Is daily trading beneficial for me?

Description of Sector: banking					
	count	mean	std	min	\
Open	9868.0	1.075409e+03	1.548153e+03	98.000000	
High	9868.0	1.088947e+03	1.567815e+03	100.889999	
Low	9868.0	1.060312e+03	1.525821e+03	96.529999	
Close	9868.0	1.074578e+03	1.546224e+03	98.425003	
Volume	9868.0	1.318337e+07	1.625557e+07	0.000000	
IntraDay_Variation	9868.0	-8.311628e-01	3.665103e+01	-433.700195	
		25%	50%	75%	max
Open		2.753000e+02	4.756250e+02	1.070887e+03	8.050000e+03
High		2.790625e+02	4.817500e+02	1.085000e+03	8.050000e+03
Low		2.716500e+02	4.709750e+02	1.057069e+03	7.861300e+03
Close		2.749068e+02	4.759625e+02	1.071013e+03	7.929300e+03
Volume		2.336871e+06	9.299924e+06	1.755076e+07	2.868577e+08
IntraDay_Variation		-4.909088e+00	-4.025115e-01	4.349975e+00	5.546001e+02

Description of Sector: banking					
	count	mean	std	min	\
Open	9920.0	1.036972e+03	1.041086e+03	28.160000	
High	9920.0	1.053099e+03	1.056789e+03	28.879999	
Low	9920.0	1.019792e+03	1.023491e+03	28.129999	
Close	9920.0	1.035424e+03	1.039268e+03	28.490000	
Volume	9920.0	1.644833e+06	4.297917e+06	0.000000	
IntraDay_Variation	9920.0	-1.548650e+00	3.193026e+01	-424.300293	
		25%	50%	75%	max
Open		72.070000	829.596802	1.359000e+03	5.770000e+03
High		72.439999	839.799988	1.379862e+03	5.935400e+03
Low		71.642502	818.074982	1.339700e+03	5.629600e+03
Close		72.087497	828.625000	1.357975e+03	5.733950e+03
Volume		174482.500000	407530.500000	1.754418e+06	2.657094e+08
IntraDay_Variation		-8.650024	-0.110001	4.803726e+00	6.539502e+02

Description of Sector: auto					
	count	mean	std	min	\
Open	9868.0	2.259729e+03	2.531321e+03	66.500000	
High	9868.0	2.286355e+03	2.556882e+03	66.900002	
Low	9868.0	2.230355e+03	2.502070e+03	63.500000	
Close	9868.0	2.257372e+03	2.528114e+03	65.300003	
Volume	9868.0	6.762115e+06	1.769156e+07	0.000000	
IntraDay_Variation	9868.0	-2.356949e+00	5.537947e+01	-540.600098	
		25%	50%	75%	max
Open	474.075004	8.928250e+02	2.920325e+03	9.966000e+03	
High	480.683044	9.077000e+02	2.948288e+03	9.996400e+03	
Low	467.950004	8.809000e+02	2.883100e+03	9.725000e+03	
Close	473.612496	8.931000e+02	2.916950e+03	9.832450e+03	
Volume	571353.750000	1.535108e+06	4.992328e+06	3.905778e+08	
IntraDay_Variation	-12.050048	-1.149994e+00	8.549851e+00	6.125996e+02	

Description of Sector: index					
	count	mean	std	min	\
Open	2455.0	10904.277538	3643.218745	5233.450195	
High	2455.0	10957.695157	3658.016813	5317.700195	
Low	2455.0	10831.020888	3619.578698	5118.850098	
Close	2455.0	10895.594685	3640.145956	5285.000000	
Volume	2455.0	300413.523422	201050.793506	0.000000	
IntraDay_Variation	2455.0	-8.682853	96.003977	-619.650390	
		25%	50%	75%	max
Open		8172.850098	10322.750000	12196.149903	1.887195e+04
High		8213.399902	10361.799805	12230.899903	1.888760e+04
Low		8123.300049	10254.099609	12142.049805	1.877820e+04
Close		8170.500000	10305.299805	12181.424805	1.881250e+04
Volume		166500.000000	231600.000000	363750.000000	1.811000e+06
IntraDay_Variation		-52.874512	-5.299804	42.024414	8.476006e+02

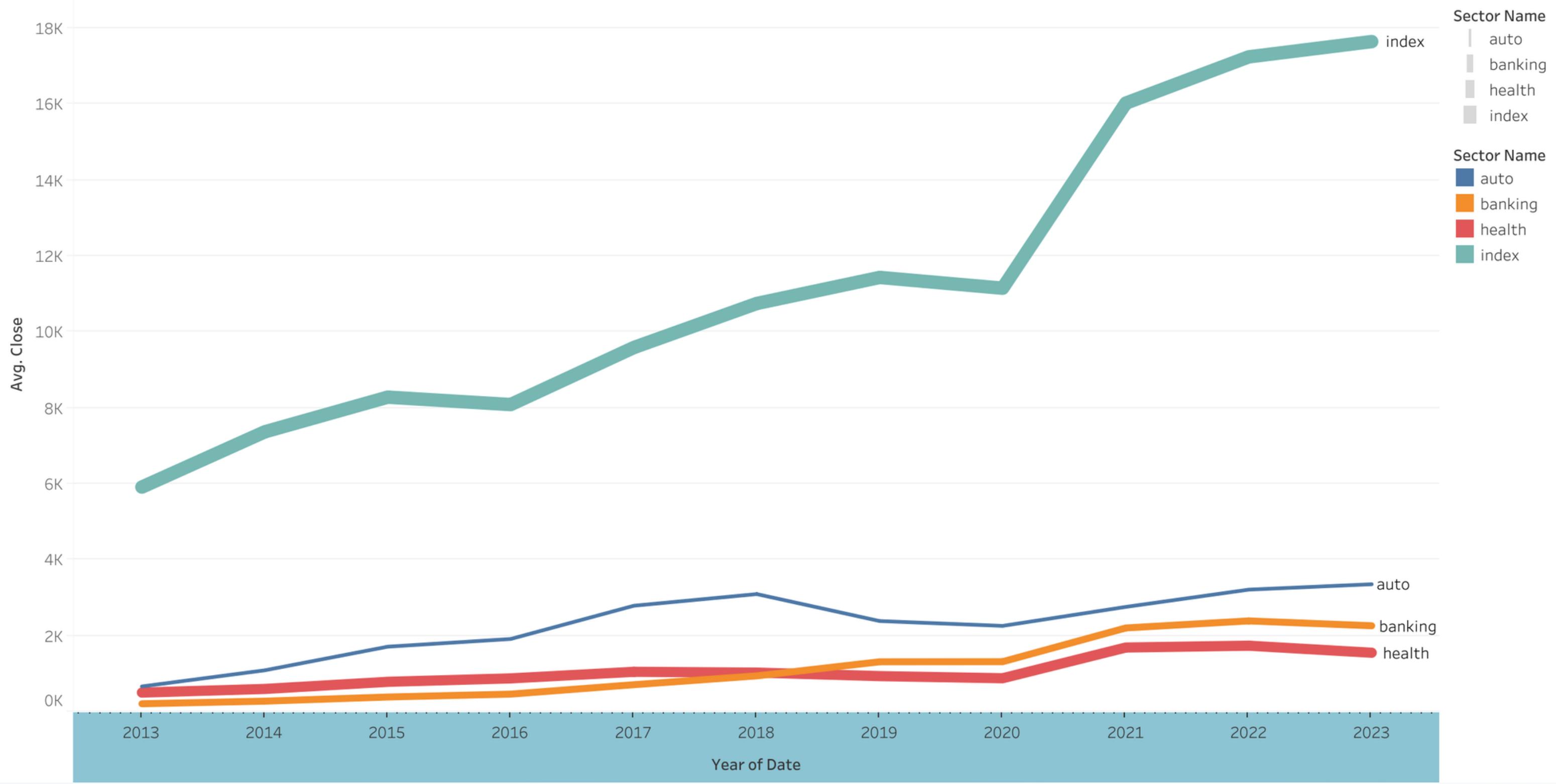
SHORT TERM TRADING ANALYSIS: INFERENCE

- The stock market is very dynamic and volatile. We observe that average Intra day variation between the opening and closing stock prices is always negative, meaning the closing price of stocks in our sample are always lower than the opening price.
- For a trader, we can conclude that daily trading is a risky task and mostly leads to losses. It is preferable for investors to invest in the long terms over short terms.

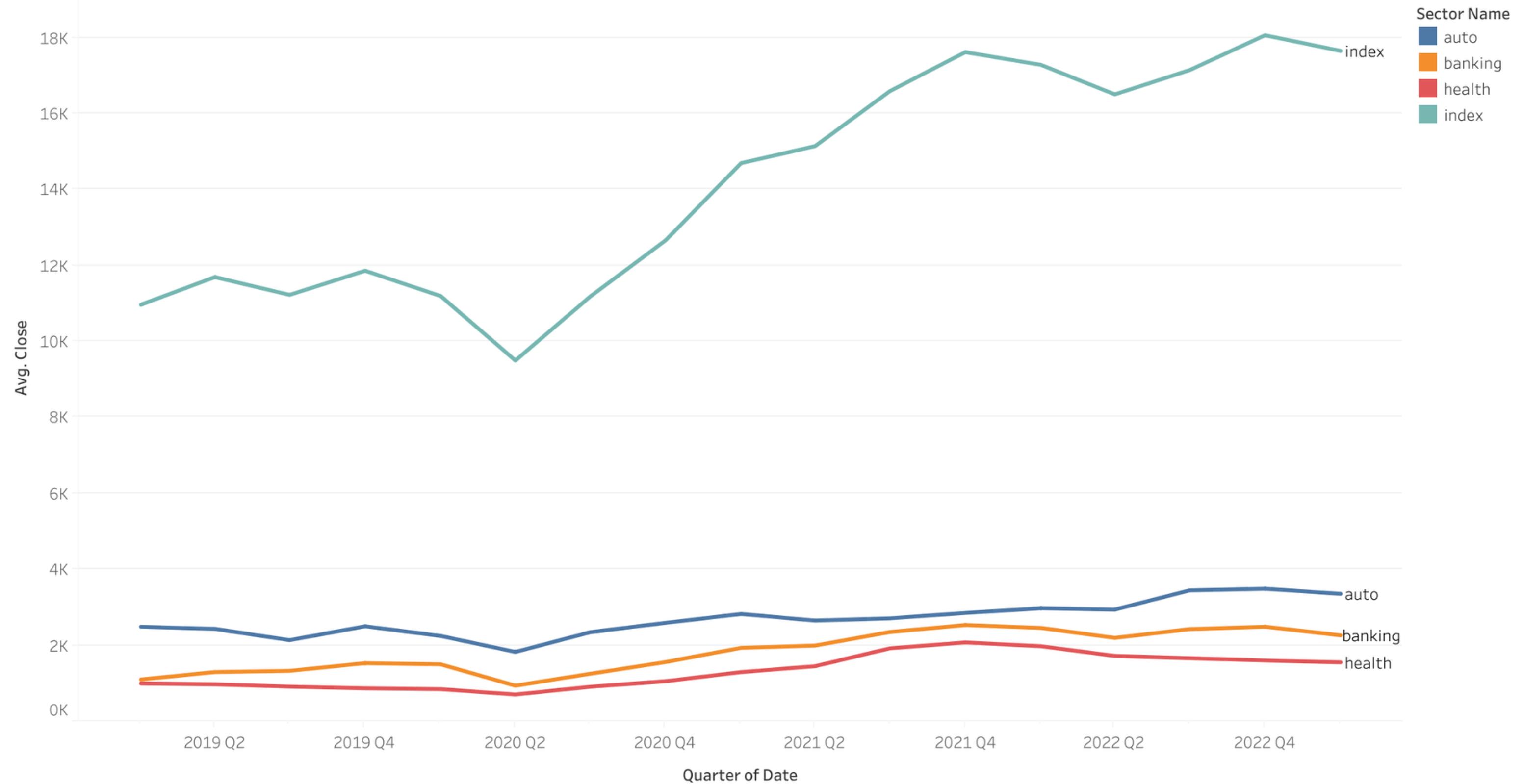
4. EVENT ANALYSIS

How did the pandemic impact the index and individual stocks?

Closing Prices Movement Across Sectors



Closing Prices Movement Across Sectors



EVENT ANALYSIS: INFERENCE

- The effect of Covid-19 can be observed since 2020. We see that once Covid-19 hit India in early 2020, there was an increase in the share prices of stocks in the Healthcare and banking sector. People found these sectors to be most needed during times of pandemic.
- On the other hand, we can see that the auto industry remained unaffected during this time.



5. HISTORICAL PERFORMANCE ANALYSIS

Which stocks had the highest percentage increase
in value over the last ten years?

% Increase in Stock Price Since 2013

Stock Name	Year of Date										Avg. PercentageChang.
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
apollo	8%	22%	59%	61%	42%	32%	59%	105%	358%	423%	423%
bajaj	12%	88%	308%	607%	1148%	1761%	2765%	2885%	5212%	5673%	5039%
eicher	44%	241%	582%	704%	1001%	967%	678%	671%	936%	1072%	1136%
hdfc	5%	29%	68%	86%	161%	221%	273%	261%	385%	369%	417%
icici	-2%	33%	44%	16%	46%	64%	120%	116%	246%	322%	348%
mahindra	5%	34%	46%	53%	57%	93%	43%	27%	90%	150%	199%
maruti	18%	92%	214%	251%	464%	566%	429%	398%	463%	551%	567%
nifty50	4%	29%	45%	42%	68%	88%	100%	96%	181%	202%	209%
piramal	-7%	9%	51%	132%	309%	317%	237%	118%	273%	179%	34%
reddy	14%	41%	71%	40%	18%	2%	17%	67%	100%	65%	63%
sbi	-11%	11%	28%	5%	37%	32%	48%	7%	98%	150%	164%
sun	32%	74%	119%	91%	42%	34%	5%	17%	73%	124%	145%
tata	22%	70%	70%	69%	69%	8%	-38%	-51%	32%	67%	61%

HISTORICAL PERFORMANCE ANALYSIS: INFERENCE

- Bajaj Auto shares have seen a 5000% uptrend since 2013 clearly making it the top-performing stock in our sample. Bajaj Auto's share price recently hit a lifetime high as it reported a 29% rise in May 2023 in auto sales, with domestic two-wheeler sales up over 100%. The key valuation ratios of Bajaj Auto Ltd's currently when compared to its past seem to suggest it is in the Overvalued zone. However, it remains a promising stocks to watch in the future for Indian investors.
- The top three stocks showing a high percentage increase are all from the Automotive sector indicating that the automotive sector is booming in India and will hopefully continue to fetch profits for shareholders in this sector.

THANKS FOR LISTENING

Open to questions now.

PRESENTATION BY SIMRAN AGARWAL

