

Date	RIL	HDFC	ICICI	TCS	ITC	NIFTY
1/1/2019						
2/1/2019	0.36%	-0.12%	-3.92%	-1.31%	-0.93%	-0.36%
3/1/2019	10.68%	11.62%	14.38%	0.92%	7.68%	7.70%
4/1/2019	2.11%	-0.06%	1.75%	12.92%	1.38%	1.07%
5/1/2019	-4.46%	4.66%	3.98%	-2.82%	-7.57%	1.49%
6/1/2019	-5.85%	0.76%	3.16%	1.40%	0.20%	-1.12%
7/1/2019	-6.87%	-7.29%	-2.86%	-0.16%	-1.33%	-5.69%
8/1/2019	7.06%	-1.05%	-3.05%	2.68%	-9.09%	-0.85%
9/1/2019	7.33%	10.43%	5.87%	-7.09%	5.78%	4.09%
10/1/2019	9.88%	0.24%	6.77%	8.11%	-0.85%	3.51%
11/1/2019	5.92%	3.62%	10.70%	-7.73%	-4.37%	1.50%
12/1/2019	-2.37%	-0.22%	5.13%	5.28%	-3.53%	0.93%
1/1/2020	-6.76%	-3.60%	-2.46%	-3.82%	-1.07%	-1.70%
2/1/2020	-6.77%	-3.97%	-5.40%	-3.58%	-15.99%	-6.36%
3/1/2020	-16.27%	-26.81%	-34.89%	-8.70%	-13.09%	-23.25%
4/1/2020	31.88%	16.23%	17.42%	11.12%	6.03%	14.68%
5/1/2020	0.82%	-5.01%	-12.68%	-2.09%	8.40%	-2.84%
6/1/2020	16.25%	12.00%	5.87%	5.57%	-1.37%	7.53%
7/1/2020	21.35%	-3.10%	-1.32%	9.89%	-0.26%	7.49%
8/1/2020	0.94%	8.04%	13.78%	-0.84%	3.49%	2.84%
9/1/2020	7.47%	-3.34%	-10.10%	10.41%	-10.15%	-1.23%
10/1/2020	-8.03%	9.73%	10.67%	6.92%	-3.76%	3.51%
11/1/2020	-6.06%	21.74%	20.57%	0.98%	17.19%	11.39%
12/1/2020	2.84%	-0.32%	13.03%	6.83%	7.93%	7.81%
1/1/2021	-7.13%	-3.19%	0.36%	8.68%	-2.75%	-2.48%
2/1/2021	13.06%	10.35%	11.31%	-6.80%	0.30%	6.56%
3/1/2021	-3.87%	-2.66%	-2.62%	9.80%	9.73%	1.11%
4/1/2021	-0.44%	-5.45%	3.16%	-4.47%	-7.28%	-0.41%
5/1/2021	8.32%	7.33%	10.37%	4.07%	6.91%	6.50%
6/1/2021	-2.29%	-1.18%	-4.81%	6.42%	-6.42%	0.89%
7/1/2021	-3.27%	-4.36%	8.18%	-5.33%	3.92%	0.26%
8/1/2021	11.00%	10.86%	5.66%	19.80%	3.10%	8.69%
9/1/2021	11.41%	0.86%	-2.53%	-0.29%	11.76%	2.84%
10/1/2021	0.82%	-0.76%	14.44%	-10.01%	-5.48%	0.30%
11/1/2021	-5.16%	-5.64%	-10.93%	4.07%	-0.92%	-3.90%
12/1/2021	-1.60%	-0.95%	3.61%	5.93%	-1.40%	2.18%
1/1/2022	0.77%	0.43%	6.57%	-0.06%	0.99%	-0.08%
2/1/2022	-1.14%	-4.00%	-5.84%	-4.71%	-1.98%	-3.15%
3/1/2022	11.65%	3.09%	-1.67%	5.23%	18.81%	3.99%
4/1/2022	5.95%	-5.83%	1.78%	-5.17%	3.55%	-2.07%
5/1/2022	-5.62%	0.31%	1.28%	-5.14%	4.28%	-3.03%
6/1/2022	-1.51%	-1.82%	-6.06%	-2.24%	3.42%	-4.85%
7/1/2022	-3.29%	6.39%	15.75%	1.07%	10.80%	8.73%
8/1/2022	5.20%	3.62%	8.39%	-2.49%	5.76%	3.50%
9/1/2022	-9.63%	-4.36%	-2.27%	-6.43%	3.65%	-3.74%
10/1/2022	7.23%	5.30%	5.42%	6.28%	4.97%	5.37%

11/1/2022	7.17%	7.47%	4.86%	6.46%	-2.49%	4.14%
12/1/2022	-3.02%	0.12%	-3.23%	-0.30%	0.03%	-1.05%
	2.04%	1.28%	2.50%	1.47%	1.02%	1.33%

Assumptions  
risk-free-rate 0.57%

	RIL	HDFC	ICICI	TCS	ITC	NIFTY
Expected Returns	1.34%	1.44%	1.59%	0.95%	1.06%	1.33%

#### Var-Covar Matrix

	RIL	HDFC	ICICI	TCS	ITC	NIFTY
RIL	0.007612	0.003334	0.003103	0.002132	0.001632	0.003436
HDFC	0.003334	0.005723	0.0058	0.001392	0.002459	0.003858
ICICI	0.003103	0.0058	0.008889	0.000727	0.002703	0.004555
TCS	0.002132	0.001392	0.000727	0.004166	0.000613	0.001716
ITC	0.001632	0.002459	0.002703	0.000613	0.004853	0.002175
NIFTY	0.003436	0.003858	0.004555	0.001716	0.002175	0.003381

Contribution to Variance	0	0	0.004384	0	0
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#### Beta

RIL	1.02
HDFC	1.14
ICICI	1.35
TCS	0.51
ITC	0.64

		RIL	HDFC	ICICI	TCS	ITC	NIFTY
	Weights	0	0	1	0	0	
RIL	0.004037	0.007612	0.003334	0.003103	0.002132	0.001632	0.003436
HDFC	0.005085	0.003334	0.005723	0.0058	0.001392	0.002459	0.003858
ICICI	0.006302	0.003103	0.0058	0.008889	0.000727	0.002703	0.004555
TCS	0.002095	0.002132	0.001392	0.000727	0.004166	0.000613	0.001716
ITC	0.000728	0.001632	0.002459	0.002703	0.000613	0.004853	0.002175
NIFTY	0.981754	0.003436	0.003858	0.004555	0.001716	0.002175	0.003381

	RIL	HDFC	ICICI	TCS	ITC	NIFTY
RIL	1					
HDFC	0.505145	1				
ICICI	0.377202	0.813292	1			
TCS	0.378503	0.285128	0.119467	1		
ITC	0.268465	0.466683	0.411603	0.136433	1	
NIFTY	0.677292	0.877116	0.830865	0.457101	0.537105	1



	RIL	HDFC
Expected Returns	0.013419	0.014371

Sum of Weights	0.999999985	
Portfolio Expected Returns	1.33%	
Portfolio VAR/ SD	0.34%	0.058242669
Expected Sharpe Ratio	13.04558832809770%	

Optimal Weights	SHARPE MAX	MINIMUM VAR
RIL	0.200842428	0
HDFC	0	0
ICICI	0.440178601	0
TCS	0.358978971	0.397033309
ITC	0	0.299887964
NIFTY	0	0.303078728
	1	1.000000001

Yearly Returns	15.96%
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ICICI	TCS	ITC
0.015943	0.009538	0.010576