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A Contrastive Investigation of Performance Analysis between Sensex (BSE) India and MSM 30 Equity Index Oman

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Abstract

Investment is a blend of art & science, which enables investors to accelerate their growth driven by returns with apt risk mitigation practices from time to time. India is one of the robust developing economies across the world; similarly, Oman is one of the vital gulf-country with well-planned economic policies. Investing in stock markets would be one of the most exciting investment alternates for the investors. Investors need to take informed decisions, with regard to their investments in stock markets. As stock markets are subject to market risk, which is driven by many internal and external factors, investors need to understand these factors and their value proposition for their investment decisions. Before studying the individual stocks performance, if an investor understands the performance of the benchmark stock market indices for their investments, it would be portraying the overall picture of the market in nutshell; which will in turn enable the investors to make their investment decision, from time to time in the preferred, performing stocks and sectors. This research paper studies the contrastive investigation of performance analysis of Sensex (BSE, India) with MSM 30 Equity Index (Oman); in simple terms through this research paper the investigators (authors) have studied the performance of indices of two countries, using descriptive statistical models during the period Jan.2017 till Dec. 2019.

Keywords: Investment, Risk-Mitigation, Market Risk, Stock Performance, Investment Decision

JEL Classification: G-10 (General Financial Markets), C-10 (Statistical Methods)

Introduction

Investment is all about commitment of funds, for an optimal return by minimized risk exposure for the investors. Stock market investments are all-time subject to market risk, with variety of external factors aggregating the whole-sum market risk factor. Investment is a blend of art & science, which enables investors to accelerate their growth driven by returns with apt risk mitigation practices from time to time. To study the economic progression of any developing / developed countries, stock market indices play a vital role. Along with other major macro-economic indicators, it would be inevitable to analyze the stock market indices.

Investing in stock markets would be one of the most exciting investment alternates for the investors. Investors need to take informed decisions, with regard to their investments in stock markets. As stock markets are subject to market risk, which is driven by many internal and external factors, investors need to understand these factors and their value proposition for their investment decisions. India is one of the robust developing economies across the world; similarly, Oman is one of the vital gulf-country with well-planned economic policies.

Review of Literature

Debijan Mukherji (2007), "As for the existence of any signals or patterns among the stock exchanges, it can safely be said that the markets do react to global cues and any happening in the global scenario be it macro-economic or country specific (foreign trade channel) affect the various markets." Sumangala Pujari & Dr. Javed Akhtar (2012) "Domestic spillovers in returns exist from the Indian stock markets to the currency markets and cause the latter to appreciate in response to higher returns on the Indian stock markets." Mihajat (2016) outlines that "the banking stocks has enhanced liquidity in the MSM market. The ability to execute timely orders is an advantage for the banking stocks. The trading volumes of the banking stock is high in the MSM market and therefore reduced bid ask spread is apparent in the market." Sharma & Sharma (2017) states that "the Arab emerging market exchanges have grown with the help of cross border consolidations. However, there is weak regulatory framework and macroeconomic instability for the international investors. The researcher adds that this is the reason why the Arab exchanges are limited in size and liquidity. In UAE, there are three stock exchanges and they are the mirrors for the regional US

exchanges. ADX and DFM are monitored by the Securities and Commodities Authority whereas the NASDAQ Dubai is regulated by the Dubai Financial Services Authority (Mihajat, 2016).”

Objective of the Paper

- i. To make a contrastive investigative performance analytical study of the major stock market indices - Sensex, BSE India and MSM, Oman during the period January 2017 till December 2019.
 - o Hypothesis Study to testify the Objective # (i)
 - **H0:** There are no significant relevance and relationship between Indian Stock Markets (Sensex) and Oman Stock Markets (MSM 30)
 - **H1:** There are significant relevance and relationship between Indian Stock Markets (Sensex) and Oman stock Markets (MSM 30)
- ii. To make investment related suggestions to naïve investors in India and Oman, based on the data analysis and findings.

Research Methodology Framework

This research paper is based on authentic secondary data sources like BSE official website and MSM website for the stock market indices related datasets. The following statistical tools are being used for making data analysis (through MS-Excel applications):

- Log-Natural Returns Analysis
- Correlation Study
- Mean-Variance (SD) Study
- Co-Efficient of Variations Study
- Descriptive Statistics Study
- Frequency Distributions Analytical Study
- Paired t-test Study
- F-test (two samples) Study
- Scatter Plot Graphical Study

Limitations to the Study

The period of study pertains to 3 years from Jan-2017 till Dec-2019, which may not be enough to make a detailed contrastive investigative performance analytical study. The author(s) have

cognitively chosen few statistical tools, which may not be sufficient to do an exhaustive performance analytical study. The author(s) have chosen only two major indices for the study namely, Sensex (India) and MSM (Oman), which may not be a conclusive evidence to decide the entire gamut of stock market performance of these two countries.

Data Analysis & Interpretation

Month (2017-19)	Closing Index Value		Index Returns	
	MSI 30	Sensex 30	Sensex	MSI 30
19-Dec	3,981.19	41253.74	0.011	(0.021)
19-Nov	4,064.14	40793.81	0.016	0.016
19-Oct	3,999.88	40129.05	0.037	(0.004)
19-Sep	4,017.69	38667.33	0.035	0.003
19-Aug	4,004.86	37332.79	(0.004)	0.063
19-Jul	3,760.63	37481.12	(0.050)	(0.033)
19-Jun	3,884.91	39394.64	(0.008)	(0.013)
19-May	3,934.15	39714.20	0.017	(0.003)
19-Apr	3,945.64	39031.55	0.009	(0.010)
19-Mar	3,983.66	38672.91	0.075	(0.040)
19-Feb	4,144.47	35867.44	(0.011)	(0.005)
19-Jan	4,166.47	36256.69	0.005	(0.037)
18-Dec	4,323.74	36068.33	(0.003)	(0.020)
18-Nov	4,412.06	36194.30	0.050	(0.002)
18-Oct	4,422.91	34442.05	(0.051)	(0.027)
18-Sep	4,543.68	36227.14	(0.065)	0.028
18-Aug	4,419.27	38645.07	0.027	0.019
18-Jul	4,336.55	37606.58	0.060	(0.053)

18-Jun	4,571.75	35423.48	0.003	(0.008)
18-May	4,606.68	35322.38	0.005	(0.026)
18-Apr	4,729.05	35160.36	0.064	(0.009)
18-Mar	4,773.51	32968.68	(0.036)	(0.047)
18-Feb	5,003.37	34184.04	(0.051)	0.001
18-Jan	4,999.96	35965.02	0.055	(0.020)
17-Dec	5,099.28	34056.83	0.027	(0.002)
17-Nov	5,109.62	33149.35	(0.002)	0.020
17-Oct	5,010.66	33213.13	0.060	(0.025)
17-Sep	5,137.35	31283.72	(0.014)	0.017
17-Aug	5,052.55	31730.49	(0.024)	0.006
17-Jul	5,024.24	32514.94	0.050	(0.019)
17-Jun	5,118.31	30921.61	(0.007)	(0.058)
17-May	5,421.95	31145.80	0.040	(0.017)
17-Apr	5,513.52	29918.40	0.010	(0.007)
17-Mar	5,550.60	29620.50	0.030	(0.041)
17-Feb	5,780.03	28743.32	0.039	0.001
17-Jan	5,776.17	27655.96		

(Source: Table #1: Primary data; using MS-Excel for statistical analysis)

Major Statistical Inferences	
Correlation (MSI : Sensex)	-17.56%
Std. Deviation (MSI)	2.42%
Std. Deviation (Sensex)	3.53%
Mean Return (MSI)	-1.06%
Mean Return (Sensex)	1.14%
Co-eff. Of Variation (MSI)	(2.27)
Co-eff. Of Variation (Sensex)	3.09

(Source: Table #2: Primary data; using MS-Excel for statistical analysis)

Descriptive Statistics (MSI-Sensex)		
Statistical Parameters	Sensex 30	MSI 30
Mean	0.0114	-0.011
Standard Error	0.0060	0.004
Median	0.0100	-0.009
Standard Deviation	0.0358	0.025
Sample Variance	0.0013	0.001
Kurtosis	-0.4900	1.230
Skewness	-0.2962	0.503
Range	0.1399	0.121
Minimum	-0.0646	-0.058
Maximum	0.0753	0.063
Sum	0.3999	-0.372
Count	35	35

(Source: Table #3: Primary data; using MS-Excel for statistical analysis)

t-Test: Paired Two Sample for Means		
Statistical Parameters	Sensex 30	MSI 30
Mean	0.0114	-0.0106
Variance	0.0013	0.0006
Observations	35	35
Pearson Correlation	-0.1756	
df	34	
t Stat	2.789	
P(T<=t) one-tail	0.004	
t Critical one-tail	1.691	
P(T<=t) two-tail	0.009	
t Critical two-tail	2.032	

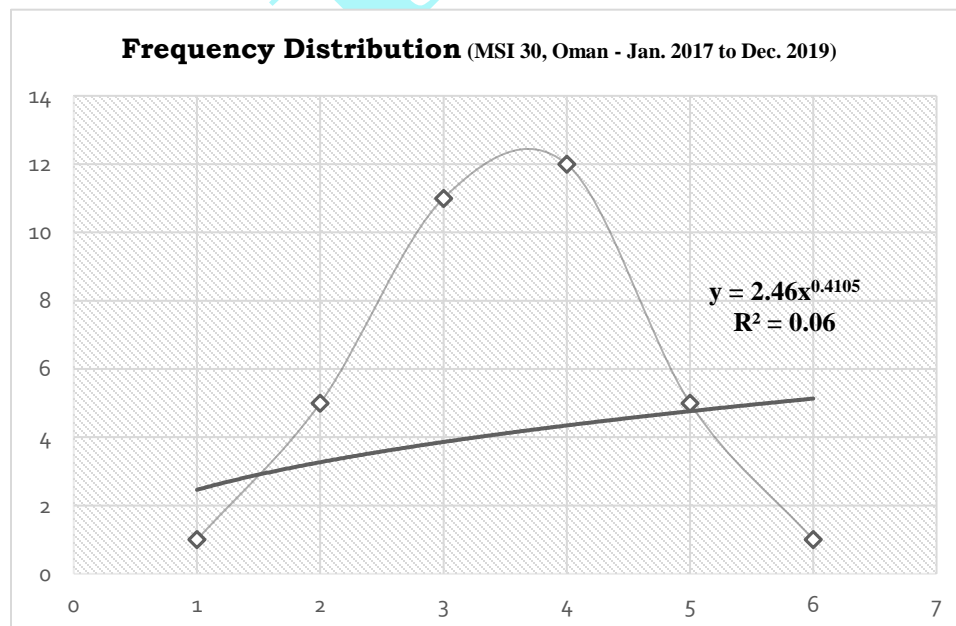
(Source: Table #4: Primary data; using MS-Excel for statistical analysis)

F-Test Two-Sample for Variances		
F-test Parameters	Sensex 30	MSI 30
Mean	0.0114	-0.0106
Variance	0.0013	0.0006
Observations	35	35
Df	34	34
F	2.131	
P(F<=f) one-tail	0.015	
F Critical one-tail	1.772	

(Source: Table #5: Primary data; using MS-Excel for statistical analysis)

Frequency Distribution Table - MSI 30, Oman		
Bin	Frequency	Cumulative %
-0.05763	1	2.86%
-0.03352	5	17.14%
-0.00941	11	48.57%
0.01470	12	82.86%
0.03881	5	97.14%
More	1	100.00%

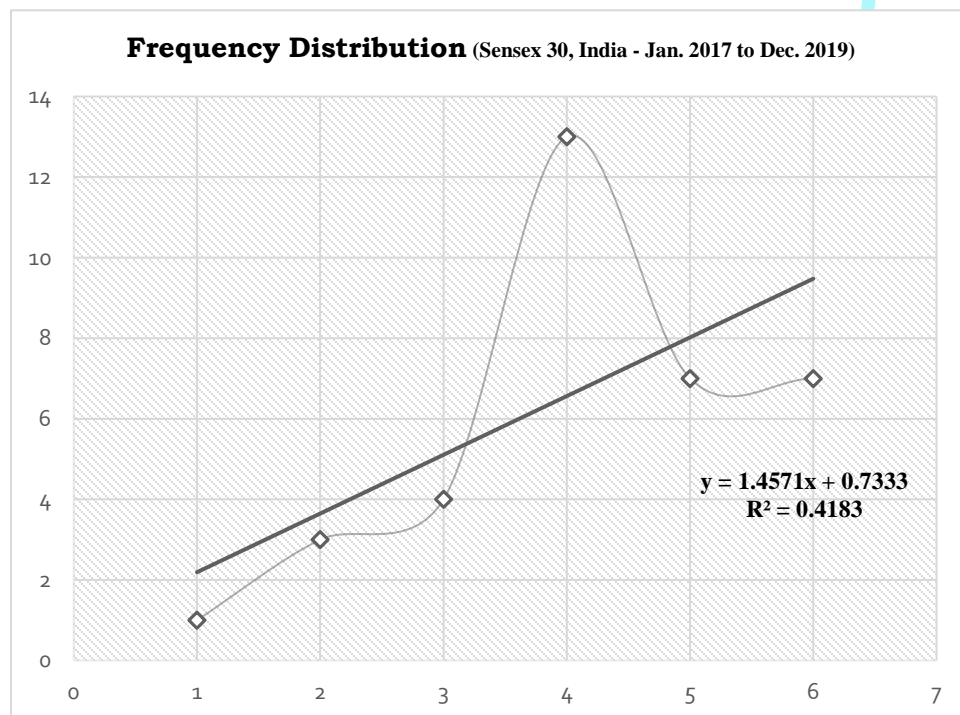
(Source: Table #6 Primary data; using MS-Excel for statistical analysis)



(Source: Diagram #1: Primary data; using MS-Excel for statistical analysis)

Frequency Distribution Table - Sensex 30, India		
Bin	Frequency	Cumulative %
-0.0646	1	2.86%
-0.0366	3	11.43%
-0.0086	4	22.86%
0.0193	13	60.00%
0.0473	7	80.00%
More	7	100.00%

(Source: Table #7: Primary data; using MS-Excel for statistical analysis)



(Source: Diagram #2: Primary data; using MS-Excel for statistical analysis)

Results, Discussions & Recommendations

Correlation statistical analysis seems to be negatively correlated between Sensex and MSM 30 Index (-17.56%), which denotes both indices do not walk in the same direction. Standard deviation: MSM 30 Index is 2.42% and Sensex is 3.5%; as inferred from the standard deviation, Sensex seems to be comparatively riskier than MSM 30 Index. Risk averse investors need to be cautious while making investment decisions.

Skewness is negative @ Sensex; Skewness is positive @ MSM 30 Index. Negatively skewed index (Sensex), denotes that mean is lower than the median, which leads to an interpretation & understanding that on lower side (left side) of the normal distribution bell-curve major outliers are available; whereas Positively skewed index (MSM 30 Index), denotes that mean is higher than the median, which means on higher side (right side) of the normal distribution bell-curve major outliers are available.

Calculated (0.004) P-Value (one-tail) is less than standard P-Value 0.05, which indicates that statistically significant and thereby null-hypothesis is rejected, and alternate hypothesis shall be accepted; which means “There exists significant relationship and relevance between Indian Stock Markets and Oman Stock Markets”

Calculated (2.131) F-Value (two sample) is higher than the defined table value, which indicates that statistically significant and thereby null-hypothesis is rejected, and alternate hypothesis shall be accepted; which means “There exists significant relevance and relationship between Indian Stock Markets and Oman Stock Markets”

Normal distribution bell-curve displayed through the frequency distribution graph reveals that Sensex frequency distribution is largely towards left-side of the bell-curve, which tells us the negatively skewed curve; whereas the MSM frequency distribution is leaning towards right-side of the bell-curve, which narrates us the positively skewed curve.

Based on the above data analysis and interpretation, it's recommended to buy and accumulate Sensex stocks and to buy and hold MSM 30 Equity Index stocks for the next one year for a naïve investor. Risk-appetite investors shall keep on doing the trading (buying-selling) activity, carefully gauging the market movements in short-run.

Conclusion

Based on the data, results, discussions and recommendations, it's vital for naïve investors to read and gauge the publicly available authentic information and act swiftly from time to time. As we are very much aware investments are subject to market risk, it's the sole responsibility of the

investor to take cautious calls on their investments. Though contagious effects are equally applicable across stock markets all over the world, need to understand the market sentiments, policy interventions by government, hedging decisions by the industries, and any other major economic event which may have an impact on our investments. Though these kind of research and analytical insights would give meaningful guidance, investors need to comprehend the bi-lateral trade agreements between the countries, before making investment commitment.

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