

## IMPACT OF COVID-19 ON THE PERFORMANCE OF BSE SECTORAL INDICES IN INDIA

Dr. Jahnavi M<sup>1</sup>, Dr. Percy Bose<sup>2</sup>, Mr. Kathari Santosh<sup>3</sup>, Dr. M Sunitha<sup>4</sup>

 <sup>1</sup>Associate Professor, RV Institute of Management, Bangalore.
 <sup>2</sup>Associate Professor, PG Centre, Jyoti Nivas College, Bangalore.
 <sup>3</sup>Assistant Professor, Department of MBA, CMR Institute of Technology, Bengaluru.
 <sup>4</sup>Assistant Professor, Department of Community Medicine, Sri Padmavathi Medical College for Women, Tirupati.

#### ABSTRACT

Sectoral indices give quick summaries and comparisons for individual industries or sectors. It allows investors to compare a stock's performance to those of various industries. The performance of sectoral indices of the Bombay Stock Exchange (BSE) was examined in this study. As of April 2022, India has 19 indices: S&P BSE Basic Materials, Consumer discretionary goods & services, Energy, fast moving consumer goods, Finance, Healthcare, Industrials, Information Technology, Telecom, Utilities, Auto, Bankex, Capital goods, Consumer Durables, Metal, Oil & Gas, Power, Realty, and Tec. Every index is crucial. Investors, stakeholders, and policymakers put their money in the stock market, particularly in sectoral indexes, to increase their profits. This study concentrated on to identify the impact of covid pandemic on each sector, to measure the relationship between the selected Indices against BSE Sensex. The perspective of investor's decision has changed since COVID pandemic and thus it is relevant to analyse the sectoral indices pre and post pandemic. Thus, this study focuses on sectoral performance in order to identify which has maximize return with minimal risk.

Keywords: Sectoral Indices, Risk, Return, Covid 19, BSE and Optimum Portfolio

#### INTRODUCTION

Sectoral indices give quick summaries and comparisons for individual industries or sectors. It allows investors to compare a stock's performance to those of various industries. Each trade firm belongs to a certain economic sector, and businesses that offer similar goods or services will be grouped together. Investors can undertake in-depth evaluations of how the economy is running by categorising enterprises and the economy. Sector indices include energy, services, healthcare, consumer products, industrial, materials, utilities, technology & communications, and finance. Investors who want to pick better stocks to invest in generally use sectoral performance analysis. Normally, investors choose the most promising sectors and analyse the performance of firms inside those sectors to decide which individual stocks will generate greater returns and acquire those stocks. The idea of sectoral efficiency/performance is fundamental in understanding how capital markets function. Investors' investing strategies are influenced by Market Efficiency since there are no undervalued or overpriced stocks in an efficient market. This means that the

stocks will not provide larger returns than expected at a given risk.

The performance of sectoral indices on the Bombay Stock Exchange (BSE) was examined in this study. The BSE Sectoral Indices are the subject of this research. As of April 2022, India has 19 indices: S&P BSE Basic Materials, Consumer discretionary goods & services, Energy, fast moving consumer goods, Finance, Healthcare, Industrials, Information Technology, Telecom, Utilities, Auto, Bankex. Capital goods, Consumer Durables, Metal, Oil & Gas, Power, Realty, and Teck, each of which includes a large number of companies. Every index is crucial. Investors, stakeholders, and policymakers put their money in the stock market, particularly in sectoral indexes, to increase their profits. Because the BSE Sectoral Indices are regarded relevant, this study examines market performance across the BSE Sectoral Indices pre and post COVID.

The perspective of investor's decision have changed since COVID pandemic and thus it is relevant to analyse the sectoral indices pre and post pandemic. Thus this study focuses on sectoral performance pre and post COVID in order to maximize return through minimal risk.

## REVIEW OF LITERATURE AND RESEARCH DESIGN

On March 11, 2020, the **World Health Organization** (**WHO**)<sup>1</sup> proclaimed the COVID-19 virus a worldwide pandemic (**WHO**, 2020), and the pandemic had a significant influence on global financial markets, including stock markets, commodities markets, and debt markets. The oil price war between Saudi Arabia and Russia erupted in the midst of the epidemic, causing an oil market crash and a concomitant stock market meltdown throughout the world. Needless to say, markets all across the world responded angrily to such news. According to a World Economic Forum study (WEF, 2020), by the end of February 2020, financial market volatility has escalated several NST times owing to investor and trader sell-offs to safeguard their cash. This resulted in a stock market crash, with a market capitalization loss of 30%, which is larger than the worldwide financial crises of 2009.

J Cave, K Chaudhuri, and SC Kumbhakar (2020)<sup>2</sup> discovered a negative association between economic growth and banking sector development, however the influence of the same financial sector on economic growth remained positive for a period of time before becoming negative. This made the researcher wonder if the same findings were true during the recent COVID-19 incident.

**Rashmi Chaudhary** (2020)<sup>3</sup> examined the BSE 500 and Sensex, as well as eight Bombay Stock Exchange sectoral indices (Auto, Bankex, Consumer Durables, Capital Goods, Fast Moving Consumer Goods, Health Care, Information Technology, and Realty), and discovered that the Indian stock market is more volatile, with a higher positive kurtosis and negative skewness.

**Dr. Pramod Kumar Patjoshi and Dr. Girija Nandini (2020)**<sup>4</sup> concentrated on stock market investments since they are hazardous and require investors to anticipate a variety of concerns before investing. These concerns include risk, reward, financial security volatility 19, and liquidity. As a result, the major goal of this study is to examine the risk and returns of the Sensex and several steel sectors on the Bombay Stock Exchange. The risk and return were calculated using the Sensex's daily closing value and all of the sample firms. The research is based on secondary data. The study's data was compiled from the BSE website during a 10-year period, from January 4, 2010 to December 31, 2019. Various approaches such as correlation, descriptive statistics, and the t test were used to achieve the stated goal in addition to testing the hypothesis. The null hypothesis (that there is no significant difference between Sensex and sample steel firms) is rejected for Tata Steel, Visa Steel, and SAIL after the t test revealed that there is a significant difference between Sensex and sample steel businesses excluding JSW steel.

According to Rahul Kumar SI and **Shishir Kumar Padhan** (2020)<sup>5</sup> the link between the stock market and other macroeconomic factors has always been dissonant. According to studies, changes in many macroeconomic indicators have an impact on the stock market. Some aspects of the stock market have a favourable influence, while others have a negative impact. This article investigates the influence of five macroeconomic factors on India's BSE S& P index: exchange rate, inflation, interest rate, money supply, and consumer price index. It spans a 60-month period from October 2014 to September 2019. The Descriptive Statistics, Correlation 17 Matrix, and Regression Analysis (Goodness of Fit, Variance Inflation Factor. Coefficient of Determination, and Durbin - Watson d-Statistic) are all tested using the Statistical Package for Social Sciences (SPSS). The findings of the analysis show that S & P BSE value has a positive correlation with all independent variables except Interest Rate, which has a negative correlation with all variables. Money supply and the Consumer Price Index have a positive relationship with the exchange rate, but a negative relationship with the interest rate. Except for Money Supply and Consumer Price Index, the VIF of all independent factors is within acceptable limits, and the effect of independent variables on the S&P BSE value looks to be quite high.

Sarath Sajan, Dr.Deeja S, and Reny **Thomas**  $(2020)^6$ , Indians have a long history of being noted for their thrift. Savings and investment are intimately linked, and both contribute to an individual's and a nation's economic stability and progress. The advancement of various economic units, roughly grouped into corporate, government, and household sectors, reflects a nation's economic development. Indians, on average, spend less than their income and save the maximum amount feasible from their monthly income to reduce future risk. The goal of this research is to look at the rates of return on five key securities in various industries, as well as the best portfolio of assets. Every investor's principal goal should be to keep their money safe. The research provides insight into how to choose a firm, invest, and build portfolios. This research aids in the creation of several portfolios that take into account the risk return characteristics of the securities and the market as a whole, and then evaluating them to determine which is the best. Portfolio B clearly outperforms all other portfolios, according to the research. As a result, portfolio B is the greatest choice for the investor.

**S. Baranidharan, A.Alex, and N. Dhivya** (2019)<sup>7</sup> investigated the integration and volatility spill over of automobile company stock prices on the BSE SENSEX and BSE AUTO Indexes. Because the critical values of 1%, 5%, and 10% are lower than the Augmented Dickey Fuller test, the study

concluded that there was a highly positive relationship between the BSE SENSEX and BSE AUTO Index and Automobile companies such as APOLLO TYRES, ASHOK LAY, BAJAJ AUTO, MARUTISUZU, MOTHER SUMI, and MRF.

## **RESEARCH GAP:**

Many research studies and articles have looked into the return performance of global equity market indexes. The leader in Indian equities markets, the Bombay Stock Exchange, has recently developed various indexes, which have been assessed by S&P. The S&P rated BSE indexes returns performance measurement has not been studied. This research attempts to bridge examining performance the gap by measurement tools via Descriptive Statistics, t-test, Anova, Regression, Correlation.

## **NEED FOR THE STUDY:**

The novel Covid-19 pandemic have impacted various industries, business process and created huge downturn in terms of performance of industries. Thus, it is relevant to know the various sectoral indices performance for investors to determine for inclusion of sustainable sectors to construct optimal portfolio with higher return and minimal risk. The study empirically analyses the performance of sectors before covid pandemic and its impact after pandemic on sectoral indices by performing the study related to pre pandemic and post pandemic.

## STATEMENT OF THE PROBLEM:

The Covid Pandemic has influenced investors to be precautious among choosing company stock for investment for inclusion in portfolio. Therefore, need arises to examine which particular sector is safe haven for investors during critical periods as well. Thus, it becomes critical for the investors to choose right sector stocks for future unforeseen contingencies.

## **OBJECTIVES OF THE STUDY:**

- 1. To analyse the performance of each sectorial index before and after covid.
- 2. To identify impact of covid pandemic on each sector.
- 3. To determine weightage of each sector for inclusion in investor optimal portfolio
- 4. To measure the relationship between the selected Indices against BSE Sensex
- 5. To assess the extent of volatility among BSE Sectoral Indices
- 6. To forecast the performance of BSE Sectoral Indices

## RESEARCH METHODOLOGY: Research Design:

The type of research is quantitative empirical study. This study uses secondary data (Secondary data is based on information collected BSE through website, books, articles and journal) which will be analysed using descriptive & inferential research methods and also gives conclusion, findings and suggestions for this study.

#### Sampling:

The current research examines the performance of BSE sectoral indexes. There were 19 indices indexed in the BSE Sectoral and Industry Index as of April 2022. In this study it was chosen to evaluate all the 19 indices from the BSE Sectoral index based on their market turnover value from 2012 to 2022.

#### Sources of data:

The sources of data are articles, journal, online blogs, and books are used to collect the information relating to Stock market. Data will be collected from various websites like BSE India, moneycontrol.com, Google Finance, websites.

**Tools for Data Analysis:** Descriptive Statistics, Correlation Analysis, Multiple

Regression Analysis, t-test, ANOVA (Analysis of Variance)

## GRAPH 4.1.1 RISK AND RETURN ANALYSIS OF SELECTED SECTORIAL INDICES FOR THE PERIOD OF MAY 2012 TO MAY 2022



#### **INFERENCE:**

The above graph displays the Annualized average monthly return and risk of BSE indices for the period May 2012 to May 2022. Every index was badly affected during the period of Covid-19, from the above graph, it is clearly stated that during that period companies' risk is very high compared to the past with the lowest return. After the period of Covid-19, a few indices recovered immediately, they are Energy, FMCG, Telecom, Utilities, Power, and Oil & Gas. It was found that the return was high for the year 2020-21 in the majority of the indices and low in the year 2019-20 in a majority of the indices. It was found that the risk was uncertainly high in the year 2019-20 in majority of the indices and low in the year 2016-17 in majority of the indices. BSE Consumer Durables has performed well in-terms of followed by BSE returns. Information Technology, BSE Teck, BSE Bankex, BSE Energy,

BSE Finance and BSE Consumer Discretionary has earned good returns during the study period. Consumer Durables has high volatility when compared to rest of the indices.

#### **TABLE 4.2.1**

COMPARISON OF BSE BASIC MATERIAL PANDEMIC RETURN (MARCH-2020 TO MAY-2022) AND BEFORE PANDEMIC RETURNS (DEC-2017 TO FEB-2020)

**H0:** There is no significant difference in the returns of selected index during pre and post covid

**H1:** There is a significant difference in the returns of selected index during pre and post covid

						+Test Painel Tes	Robert Tanànak Kataran	Perskole Bears (Mar.	viet faired live		Passing Report Man
						Sample Inc Masser	(Bruil/ Fail28)	30/Mar-2022)	Nample for Means	dis114408	38Ma (381)
				Believ Pantonic		Max	4.81308972	1 MORENO 79 7939639	Nat	12548081 21.918.91	2101.90
1-Test: Paired Two Sample for			#Telt Paired Tex Sec	picie Atten(Dell-	Pandronic Returns	Tatatos Classicadas	315478004	3.154.5	Obmere	27	
Num		(Mar-30Nay-302)		Fable	(Nar38/Nar302)	Param Consistent	-0.00046100		Frank Cardinin	1281.951	
ka:	-41,898			4,960		Regentrated Visas			Reduction	2	
100	2,003			3,943		2 diment	28		2-thrac	34	
Starrators		17 27	Charatori		27 27	134	-CHITEDOG		dar.	41/01/4-01	-
Premon Correlation	000243	41	Fearing Correlation	-41#2/5	128	2(7+*) mo-tail	0.00110.002		7(Ten) op nal	0.01061	
Rightmand Man Different		8	Repotenced Voter Differ	8.0	8	1000 A renal	1.7536.790 0.04022.629		P(Tem) receal	1.056.90	
H Constant State of Constant		26	4		3	Advectored larger approximation	1000240		+Complex-pull	1001269	
Sec	-LB60922	84	tiar	-1212508	10						
90 (m) as (a)	0109471		20+Gastal	110.0							
Critical one-tool	1750		rCritical une-tail	1.7056.7			TELECOM		UTIL	ITTESE	
NT OF I DO BUI	0073041		70+0 no-tal	028223		Dr. Bird Tas	Selice Produces: Return:	Padosiches miller	allost Saled Tex	Balary Pandenic Resume	anternis Reference Name
Cetcal monal	100004		rCristical two-last	20078		Seeple for Minst	Dell'in Problem Return Dell'in Problem Return di Sciell' Alli	2854e-2822) 1427878	Nampic for Vicani	(he)(1463)	29/Weg-29023
	. strout			there		Man Name a	455743250	1401816 6450437	Mare .	4.9181.61	13184644
-					2	Character	27		Our size		
ENER	100 Y		HAST MOVING	CONSUMER GOODS		Person Carrilation Resthead Nam	4.438344		Parie Cercless	1040039	
						Difesto			Rightmatt Man Different		
						1	28			24	
	Bito?adesi:		blet Rand Tax	Below Prodessic Rotanic	Padenic Repro: (Mo-	the 2704 as al	4.598761		15a EDiminantal	-C.204071	
sTet Parel Too Sample for	Feb20	Professic Return: (Mar- 3/May-302)	Sample for Mean	DK:07-54828)	28 May-2922)		1385011	2	R5H(mest	110227187	1
Ment	0.4340673		Mani	13140£13 10,550,394	1.028990	nOrdial centel 2004 mentel	1.7098790 1.37706234		ribinationnal Ribertimonal	17000'90 8.0070078	
ining .	40:50307764	11285063	Charrymony	17	1.0403	10/8g/me-gl	210029439		rbearing	1010101	
Ineration	27	27	Vistance Observations Descen Comeation Viscon Comeation	4838393		100000000					
Names Constitution	4.04075995	. B.					BANKEX			CAPITAL GOODS	
Reprinted New Difference			Differenze	0	0					a contractor of the second	
Y Sar	4 0357581		1 Sar	.1 1014810		* Sam Paired Swa Tangie for Mean	Belev Pastern Drawn (Dec)-Peb28	Pashak Eners (Me- 36Me-365) 5 1250-000 4 1250-000 7 7	n Date: Paired Two Tangit for Mean	Solen Pastenic Returns (Dec17.846/28)	Fund-mic Xerneros (N 39/May-3822)
Constall	0.150(82749		X70ticestal			Minut.		* 1.2%Seller	Man	4.40209411	2,1011
Critical onerail Critical onerail	1708030	17	t Cescal mercal	1.3055401		Veine	L' Merp."	4 V/2.646408	Values	62048	81.0
			3(Tor(monal	5.96713202		Ohuer stores Pressoe Constitution	URY	2	Darration Press Corrists Typicourt line	0.34734036	-
Originoal	10129499		rCesal reval	2.021529(39		Passa Esotatos Repúblicad Mes			Thursday of State	1.14 8104	
FINAL				TH CARE		Different		0	Different		
FINLAU	NCE		HEAL	TH CARE		124	6.5010	2	and a second	10190	
						PC-ret res-tail	1479047	7	(15an (1677) (m) can cal	-13475878 14758474	
a lint faired live	Pandonic Reserve		+Test: Paired Two	Boltere Pando mic Societte e	Panieni, Batares (Mar-	1 Canod new tail PCI over searchail	1.200.3	1	POund read	17034742	
	0.0113-0-28	3(No-30)	Kengle &r Weats Moan	(Dec (17-8 ab 28)	24% e-2412)	1 Citized monail	10004		Toronal Internal	Langer	
Rore. Nervenis	2548082	100402208	Vananci	2 0028.1	68014			DNSUMER DURAD			
Nanaiva	15	21	Observations	1							
funes Certation	101404681702		Prance Condution	0.01002411			1. See: Paired Dea Tangle for Mean	DesT-2420	Pandemir Keturns (Mar		
Representation .			Nygerbased Sicas								
Difference	0		Differen			-	Variant	17.56566	41.86221		
f 3w	4.2194348		1 Set	-0.49408090	1	-	Name Continue	1077	1		
T-reciper with	6.40080815		P(THI) on real	8272985628	E		Reprint New	11			
100000000000000000000000000000000000000			Crossi monal RTenjino nač	1.70961790	<u> </u>		Difference		5		
Ormal second	1708193										
Oritical on creal	170.9192 6.518797 1.9175203		ETrepresent.				136		11 ·····		
Ormal second	170.8191 0.500.771 1.012949		RTH (result (Constituted)	20112943			1766 Print sectal United sectal	4 X0966 636 120 1 X08 20	* *	-	
Oritical on creal	1758191 64518791 1812949		R Tori ( no pail ) Contral trio ( al				The P(Ton) sector TOrigon restrict P(Ton) two red	LAND LAND LAND	6 C D	3	
Oritical on creal	1378-91 64208791 1812549	METAL	RTP+(n++al rCristalise-ral			POWER	1 Colored reacted	1.50479	9 C		
Orient cercent	1810909 1810909	METAL	Contral two-tail	201090		POWER	TOdated an red DET reg two red	1.5025	9 6 9		
Orient cercent	*Test: Faired	The Believe Pa	indensia Retartes P	20112943 andersic Satures (Mar-	t-Jot Farel Tee	Below Pandem	(TORNAL AND	Charles (Mar-	9 6 9		
Orient cercent	0.000°P') 1.010543 0-Test: Paires Sample for M	The Believe Pa	(17.67.66) teoral ordensis Rolense - 7 (17.67.66(24)	2012940 orderski: Roternes (Mar- 24/Mar-2022	t-Test Paired Tes Sample for Means	Below Panden (Dec/17-Fe	RTestman RTestman k Butures Pandoni 4/24) 24	1.300/9 1.300/9 C Batarns (Mas- Mas-3023	9 6 9	3	
Oritical on creal	e Econ (P) 1 0109409 Sample for M Man	The Believe Pa	(102000) 140442 molecule: Returns P (11-F-de(24) -2.05(112406	20112943 andersic Rata res (Mar- 28Mar-2822) 2.592200113	e-Test: Paired Tes Sample for Means Man	Bellery Pandem (Decil7-Fe	RTestand manual RTestandad	C Natures (Mar- Mar-362) -0.97661287	9 6 9		
Oritical on creal	a gane (P) 1 010503 Sample for M Man Variance	The Believe Pa	(17.67.66) teoral ordensis Rolense - 7 (17.67.66(24)	2012940 orderski: Roternes (Mar- 24/Mar-2022	e-Test: Paired Tes Sample for Mean Man Variance	Bellery Pandem (Decil7-Fe	RTestman RTestman k Butures Pandoni 4/24) 24	1.300/9 1.300/9 C Batarns (Mas- Mas-3023	5 C D		
Orient cercent	8-Test: Pairse Sample for W Mean Variance Observation	i Two Before Po leans (Der	1/Consul Internal Indexasis Reference P (17/F-sh(24) -1.459/781406 -47-22231381 -27	20112943 andersic Rata res (Mar- 28Mar-2822) 2.592200113	o Test Paired Tee Sample for Means Man Valante Operations	Believ Panden (Decit7-Fe	k Botares Pandeni Al24) 24 17976-139 1146-29 27	C Natures (Mar- Mar-362) -0.97661287	4 6 6		
Orient cercent	e ReiserPr) 1810569 e-Test: Paired Sample for W Mean Observation Parante Corolan	i Two Believe Pa Jeans (Dey	(102000) 140442 molecule: Returns P (11-F-de(24) -2.05(112406	20112943 andersic Rata res (Mar- 28Mar-2822) 2.592200113	1-Test Parrol Two Sample for Meson Man Variant Oscinations Parase Completion	Believ Panden (Decit7-Fe	RTestand manual RTestandad	C Natures (Mar- Mar-362) -0.97661287	5 5 6 7		
Orient cercent	e Electronic 1 States Sample for M Maan Variant Observation Parameter Regularized M	i Two Believe Pa Jeans (Dey	1/Consul Inserval (1747-06/24) -1/249-124-06 47-2021-941 -27 0.1497-25481	20112943 andersic Rata res (Mar- 28Mar-2822) 2.592200113	o'Test Paired Tes Sample for Means Man Variant Orar-store Paren Conductor Reporteriori Mana Reporteriori Mana	Believ Panden (Decit7-Fe	(Constanting) (RTVe) to onl (RTVe)	C Natures (Mar- Mar-362) -0.97661287	5 0 0 0 0		
Orient cercent	e Reiserier 18102909 2-Test: Paires Sangle for M Moss Variants Observations Pransis Correlats Pransis Correlats Physical Correlations Pransis Correlations	i Two Believe Pa Jeans (Dey	11000001004400 11147460280 -2.004702400 47.004702400 27 0.149202651 0	20112943 andersic Rata res (Mar- 28Mar-2822) 2.592200113	s-Test Parent Tese Sample for Meson Man Varianto Organisations Parents Constitution Repotenting Man Definition	Believ Panden (Decit7-Fe	10000 minut RT00 minut 6200 200 179700 10 179700 10 179700 10 27 10000713 0 0	C Natures (Mar- Mar-362) -0.97661287	5 5 6 7		
Orient cercent	e Kjarri 1 til (294) Sangle for M Nea Votas Oburnatom Pranne Corelato Rypshatted M Different df	i Two Believe Pa Jeans (Dey	1100000100440 110746020 -1.054702400 -7.3523031 27 0.169725681 -0 -26	20112943 andersic Rata res (Mar- 28Mar-2822) 2.592200113	6 Tott Paired Tee Sangle for Mean Man Variato Daras Cours Paras Coursions Paras Coursions Myselenna Man Different M	Below Pasies (Dec/7-fr	10000 mm.nd RT050000 0000 200 0000 200 0000 200 000000 20 000000 20 000000 20	C Natures (Mar- Mar-362) -0.97661287			
Orient cercent	e Reserve 1 to 10000 Sample for M Maan Veranse Observetors Prantine Correlate Profilement df 1 Sam	i Two Believe Pa Jeans (Dey	(10000/10040) (11440/01) -2.45470404 -2.45470404 -2.45470404 -2.45470461 -2.45470461 -2.45470461 -2.454704417	20112943 andersic Rata res (Mar- 28Mar-2822) 2.592200113	e-Jest Pared Tee Sample for Mean Man Varies Oner when Parent Corr (aton Repotential Man Different af Sat	Below Pasters (DeciT)-fo	Closed manual           ICOunt manual           Reference         Panelineal           6/28)         200           7/1977-02.159         201           7/1977-02.159         201           7/1977-02.159         201           7/1977-02.159         201           7/1977-02.159         201           7/1977-02.159         201           7/1977-02.159         201           7/1977-02.159         201           7/1977-02.159         201           7/1977-02.159         201           7/1977-02.159         201           7/1977-02.159         201           7/1977-02.159         201           7/1977-02.159         201           7/1977-02.159         201           7/1977-02.159         201	C Natures (Mar- Mar-362) -0.97661287	9 7 7 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
Oritical on creal	e Kjarri 1 til (294) Sangle for M Nea Votas Oburnatom Pranne Corelato Rypshatted M Different df	t Two Before P. Jean Der On at	1100000100440 110746020 -1.054702400 -7.3523031 27 0.169725681 -0 -26	20112943 andersic Rata res (Mar- 28Mar-2822) 2.592200113	6 Tott Paired Tee Sangle for Mean Man Variato Daras Cours Paras Coursions Paras Coursions Myselenna Man Different M	Belare Pandem dbeil?-fe	10000 mm.nd RT050000 0000 200 0000 200 0000 200 000000 000000 000000 000000 000000 0000	C Natures (Mar- Mar-362) -0.97661287	9 <b></b>		
Oritical on creal	A Control 1     A Control	t Two Before P. Jean Der On at	11000001000000000000000000000000000000	20112943 andersic Rata res (Mar- 28Mar-2822) 2.592200113	e-Lest Pared Tee Sample for Mean Man Variant Ourreston Parenet Different di different different different different	Belore Pandem disc17-fr	Closed manual           ICOunt manual           ICOunt manual           Active         Paradoxid           Active         Paradoxid           Active         Paradoxid           Active         Paradoxid           Active         Paradoxid           Bit Paradoxid         Paradoxid	C Natures (Mar- Mar-362) -0.97661287	9 6 9 9		
Oritical on creal	Elimiteri Instantia Press: Paired Sample for M Manual Manuu	t Taxo Beliare Pa Iraan (Der In	10000010040000000000000000000000000000	20112943 andersic Rata res (Mar- 28Mar-2822) 2.592200113	e Tott Paired Tee Sangle for Mean Man Vietney Observators Parates Corellators Mepdenses Man Different de Ular Star (Dire seal (Original second (Original second (Original second (Original second) (Original second)	Bebre Pandem (Dec17-fr	Closed manual           Information           Reference         Panelosis           Altest         200           T14639732         20           0         20           0         20           137000000000000000000000000000000000000	C Natures (Mar- Mar-362) -0.97661287	9 5 9 9		
Orient on crail	A Control 1     A Control	t Taxo Beliare Pa Iraan (Der In	In Consul Roturnes P (111-14-024) -1. disk TR 400 47. 3253(24) 27 0.1472(243) 0 0.052(24) 1. 70(41792) 0.045(24) 1. 70(41792) 0.045(204) 1. 70(41792) 1. 70(417	20112943 andersic Rata res (Mar- 28Mar-2822) 2.592200113	e-Lest Pared Tee Sample for Mean Man Variant Ourreston Parenet Different di different different different different	Bebre Pandem (Dec17-fr	[Constants] [RCVethmin] [RCVet	C Natures (Mar- Mar-362) -0.97661287	9 5 9 9		
Orient on crail	Elimiteri Instantia Press: Paired Sample for M Manual Manuu	i Two Befare Pa Irano Obra Ina	In Connect Reference P 17.17.47.47.01 - 4.2617.124.024 - 5.2617.124.024 - 5.2617	20112943 andersic Rata res (Mar- 28Mar-2822) 2.592200113	e Tott Paired Tee Sangle for Mean Man Vietney Observators Parates Corellators Mepdenses Man Different de Ular Star (Dire seal (Original second (Original second (Original second (Original second) (Original second)	Beine Anders (Dec17-fr	[Constants] [RCVethmin] [RCVet	C Natures (Mar- Mar-362) -0.97661287	9 5 5 5		
Oritical on creal	Elimiteri Instantia Press: Paired Sample for M Manual Manuu	t Taxo Beliare Pa Iraan (Der In	In Connect Reference P 17.17.47.47.01 - 4.2617.124.024 - 5.2617.124.024 - 5.2617	20112943 andersic Rata res (Mar- 28Mar-2822) 2.592200113	e Tott Paired Tee Sangle for Mean Man Vietney Observators Parates Corellators Mepdenses Man Different de Ular Star (Dire seal (Original second (Original second (Original second (Original second) (Original second)	Bebre Pandem (Dec17-fr	[Constants] [RCVethmin] [RCVet	C Natures (Mar- Mar-362) -0.97661287	9 5 9		
Oritical on creal	Elimiteri Instantia Press: Paired Sample for M Manual Manuu	REALT	Inclimatinestal andemaic Rommes P 1.1546491 1.4561784496 4.105184496 2.06518451 2.06518451 1.751441782 0.064519997 2.055139419 2.055139419 2.055139419 2.055149 2.055139419 2.055149 2.05	20112943 andersic Rata res (Mar- 28Mar-2822) 2.592200113	s Test Paired Test Mare Water Vision Object vision Parato Confedence Defineses of Alter (accual) ACtive(accual)	Beine Anders (Dec17-fr	Inclusion         Parallelision           Extension         200           1714 42 109	C Natures (Mar- Mar-362) -0.97661287	9 2 2		
Orient on crail	Electronic Tainet     Electronic Tainet     Electronic Tainet     Security Tainet     Security     Venemat     Orcoro alcon     Difference     af     Soar     Primer Deretain     Electronic Tainet     Soar     Primer Deretain     Electronic Tainet     Electro	REALT	Inclinearise and Inclinearise Romanness P 1.1516/051 1.2517182408 1.2517182408 1.2517182408 1.2517182408 0.2517182408 0.2517182408 0.2517182408 0.2517182408 0.2517182408 0.2517182408 1.75161782 0.261719827 2.051718418 0.261719827 2.051718418 0.261718418 0.261718418 0.261718418 0.261718418 0.261718418 0.261718418 0.2718418 0.2718418 0.2718418 0.2718418 0.2718418 0.2718418 0.2718418 0.2718418 0.2718418 0.2718418 0.2718418 0.2718418 0.2718418 0.2718418 0.2718418 0.27184 0.2718418 0.271	20100407 androxic Boncon (Mar- 2010) 2:9320 (313) 2920 (313) 2920 27 27 27	s Test Paired Test Mare Water Vision Object vision Parato Confedence Defineses of Alter (accual) ACtive(accual)	Below Ander	Income analy           Extension         Fundaming           Extension         200           714 44 20173         200           200         200      200	1.5607 1.5607 1.5607 1.5607 1.5607 2.760000 2.7	9		
Orient on crail	Electronic Parent     Electronic Parent     Electronic Parent     Seguira for M     Man     Watass     Electronic Security     Form Parent 7 w     Form Parent 7 w	REALT	In Consult Reserve 11 Tel 4 (C) (11 Tel 4 (C) (11 Tel 4 (C) (11 Tel 4 (C) (11 Tel 4	20100407 androxic Botocom (Mar- 201004-2010 20102-2010 2010 2010 2010 2010 201	E-Test Paired Twee Stands for Weater Mare National Parate Confliction Parate Confliction Parate Confliction Parate Confliction Parate Confliction difference difference difference Parate Confliction Parate Conflict	Below Pasiene (ber)7-fr	Original actual           EXECUTION         Panellowing           EXECUTION         Panellowing           Action         200           Control         200           Co	Chiefe      C	9 2 2 2		
Orient cercentl Treat or cent	A CONTROL Part of the second sec	REALT	In Consult Reserves P (14) Start And Call (14) Start And Call (14) Start Start Start (14) Start Start Start (14) Start (	20100407 androxic Botocom (Mar- 201004-2010 20102-2010 2010 2010 2010 2010 201	of Jost Parent Tee Sangle for Wase Mare of Viewan Ourse for Parent Corridon Parent Corridon Mare de Garan (Consol rev-sal (Consol rev-sal) (Consol rev-sal) (Consol rev-sal)	Below Pasiene (ber)7-fr	Income analy           Encode analy         Panalogia           Encode analy         248           2019         248           2019         248           2019         248           2019         248           2019         253           2019         26	Character (Mar- 1992) Character (Mar- 1942) Character (Mar- 1942) Character (Mar- 1942) Character (Mar- Nay-062)	9 2 2 1 1		
Orient cercentl Treat or cent	Control of the second sec	REALT	In Consult Reserve 11 Tel 440 (24) 11 Tel 440 (24) 12 Tel 12 Tel 14 12 Tel 14 Tel 14 14 Tel 14 14 Tel 14 14 Tel 14 Tel 14 14 Te	2010940 2010940 Kitore (Mar- 201092-002) 3 5520612 3 5520612 27 27 27 27 20 20 20 20 20 20 20 20 20 20 20 20 20	E-Test Paired Twee Stands for Weater Mare National Parate Confliction Parate Confliction Parate Confliction Parate Confliction Parate Confliction difference difference difference Parate Confliction Parate Conflict	Below Pasiene (ber)7-fr	Original actual           EXECUTION         Providence           EXECUTION         Providence           Addition         200           Control         200           Co	Chiefe      C	9 20 20 20		
Orient cercentl Treat or cent	A CONTROL Part of the second sec	REALT Sangle Band REALT Sangle Company Sangle S	In Connect House and In Connect House And In Tel 4 (6) (1) In	2010940 androxic Botacono (Mar- 20109-2010) 2 52020017 11733/007 27 27 2010-27 27 2010-27 27 2010-27 27 27 27 27 27 27 27 27 27 27 27 27 2	to Text Paired Twee Manage for Vessor Water Yorkinson Onerrotoxic Parate Conference at Control Section Parate Parate At Control sector At Control sector At	Below Pundem (Bell')-Ir (Bell')-Ir (Below Pundemin (Below Pundemin (Below Pundemin 2 1	Original actual           EXECUTION         Providence           EXECUTION         Providence           Addition         200           Control         200           Co	C Bartares (Mar. 1.500) C Bartares (Mar. 1142-240) 27 27 27 27 27 27 27 27 27 27	9 2 2 2		
Orient cercentl Treat or cent	Control of the second sec	I Tina Belore Pa frem Obri m REALT s Sangle Bolton 0 0 6 0 6 0 6 0 6 0 6 0 6 0 6 0 6 0 6 0	In Consult Have read	201104-01 2014-01 (Mar- 2014-2015) 2.98200132 1.95200132 27 27 27 24 2014-01 2.0427120 2.0427120 2.7 27	Clost Parent Tree Scapit for Wears Warm 1 One review Present Confliction Reporting of the Reporting of the Reporting of the Reporting of the Reporting of the Scapit for Mass Scapit for Mass Parent Scart Scapit for Mass Scart Scapit for Mass Scart Scapit for Mass Scart Scapit for Mass Scart Scart Scale Scart Scale Scale Scale Scart Scale Scale Scale Scart Scale Scale Scale Scale Scale Scale Scale Scale Scale Scale Scale Scale Scale Scale Scale Sca	Below Pundem (Bell')-Ir (Bell')-Ir (Below Pundemin (Bell')-Ir (Bell')-Ir (Bell')-Ir	Dirika anali           Dirika anali </td <td>C Bartares (Mar. 1.500) C Bartares (Mar. 1142-240) 27 27 27 27 27 27 27 27 27 27</td> <td>9 </td> <td></td> <td></td>	C Bartares (Mar. 1.500) C Bartares (Mar. 1142-240) 27 27 27 27 27 27 27 27 27 27	9 		
Orienti cercenti Trest escenti	I Control 1 (Control 1 (Cont	REALT stansistics of the second secon	In Connect House and In Connect House And In Tel 4 (6) (1) In	201104-01 2014-01 (Mar- 2014-2015) 2.98200132 1.95200132 27 27 27 24 2014-01 2.0427120 2.0427120 2.7 27	Clost Parent Tree Scapit for Wears Warm 1 One review Present Confliction Reporting of the Reporting of the Reporting of the Reporting of the Reporting of the Scapit for Mass Scapit for Mass Parent Scart Scapit for Mass Scart Scapit for Mass Scart Scapit for Mass Scart Scapit for Mass Scart Scart Scale Scart Scale Scale Scale Scart Scale Scale Scale Scart Scale Scale Scale Scale Scale Scale Scale Scale Scale Scale Scale Scale Scale Scale Scale Sca	Below Pundem (Bell')-Ir (Bell')-Ir (Below Pundemin (Bell')-Ir (Bell')-Ir (Bell')-Ir	Dirika anali           Dirika anali </td <td>C Bartares (Mar. 1.500) C Bartares (Mar. 1142-240) 27 27 27 27 27 27 27 27 27 27</td> <td>9 2 2 2</td> <td></td> <td></td>	C Bartares (Mar. 1.500) C Bartares (Mar. 1142-240) 27 27 27 27 27 27 27 27 27 27	9 2 2 2		
Orient cercentl Treat or cent	Electronic States     Electronic States	REALT REALT REALT Sample Sample Solution Composition of Sample Solution REALT RE	In Consult Have not and main Elements P - 1 - 6497 124 446 (24) - 1 - 6497 124 446 - 2 - 6497 124 - 6497 124 - 2 - 6497 124 - 649	2010940 autorek Retrans (Mar- 20109-2020) 2 92040-2020 12155980- 27 20109-020 225421340 27 27	offect Parent Tee Sample for Water Man Description Parent Conference Representation Representation defined defined formal reveal (Crimal reveal (Crimal reveal) (Crimal reveal (Crimal reveal) (Crimal reveal)	Beker Pander divid 19 fr 0 5 5 5 5 6 5 5 1 6 5 5 1 6 5 5 1 6 5 5 1 6 5 5 1 6 5 5 1 6 5 5 5 1 6 5 5 5 5	Restance         Parallelis           8. Biotecom         200           11.4 Biotecom         200<	C Bartares (Mar. 1.500) C Bartares (Mar. 1142-240) 27 27 27 27 27 27 27 27 27 27	9 		
Orient cercentl Treat or cent	I Control 1 (Control 1 (Cont	REALT REALT REALT Sample Sample Solution Composition of Sample Solution REALT RE	In Consult Have not and main Elements P - 1 - 6497 124 446 (24) - 1 - 6497 124 446 - 2 - 6497 124 - 6497 124 - 2 - 6497 124 - 649	2010407 androxic Ruman (Mar- 201042000) 201020017 1075/3007 27 27 27 27 27 27 27 27 27 27 27 27 27	s Test Paired Tes <u>Stand</u> for Meson <u>Man</u> <u>Variant</u> <u>Variant</u> <u>Otherwise</u> <u>Planet</u> <u>Constructions</u> <u>Planet</u> <u>Constructions</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u> <u>Al</u>	Below Funder disc17-fr disc17-fr disc17-fr disc17-fr Below Fundersis (bec13-fr disc 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Total anality           Extension         Panellania           Extension         200	C Bartares (Mar. 1.500) C Bartares (Mar. 1142-240) 27 27 27 27 27 27 27 27 27 27	9 2 2 2		
Orienti cercenti Trest escenti	I Sciences     I I Sciences     I I I I I I I I I I I I I I I I I	The Below PA from Ober m m m m m m m m m m m for Da for da	In Connucl Insertial Institution State (Connucl Insertial Insertial State (Connucl	2010407 androxic Ruman (Mar- 201042000) 201020017 (1715)2007 27 27 27 20 21 212021007 27 27 27	Cilled Paired Twe Scappe for Weater Mark Mark Darms Nation Defenses at Game Scapficher Reportent at Mark Defenses at Cilled Inscall Cilled Inscalled Inscall Cilled Inscalled Inscall	Below Funder disc17-fr disc17-fr disc17-fr disc17-fr Below Fundersis (bec13-fr disc 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Restance         Parallelis           8. Biotecom         200           11.4 Biotecom         200<	C Bartares (Mar. 1.500) C Bartares (Mar. 1142-240) 27 27 27 27 27 27 27 27 27 27	9 		
Orienti cercenti Trest escenti	Electronic Constraints     Electronic Const	REALT REALT Sample Sample Sample Sample Common Sample Sample Sample Sample Sample Sample Sample Sample Sample Sample Sample Sample Sample Sample Sample Samp	Indexed Reserve P and and Reserve P -1.4571446(24) -1.45712446(24) -1.45712446(24) -1.45712446 0.145712451 0.145712451 0.14571245 0.046124045 1.75145120 0.046124045 2.05512845 0.04612405 2.151561 0.151	20100403 androxic Romon (Mar- 20404_2012) 20104_2012 (111)5/80 27 27 27 27 27 27 27 27 27 27 27 27 27	s Test Paired Test <u>Sample for Weater</u> <u>Water</u> <u>Water</u> <u>Water</u> <u>Paired Confliction</u> <u>Paired Confliction</u> <u>Paired Confliction</u> <u>Paired Confliction</u> <u>All</u> <u>Constant Social</u> <u>All</u> <u>Constant Social</u> <u>Constant Soci</u>	Beker Pander divid 7 dr divid 7 d	Total anality           Extension         Panellania           Extension         200	C Bartares (Mar. 1.500) C Bartares (Mar. 1142-240) 27 27 27 27 27 27 27 27 27 27	9 2 2 2		
Orient cercentl Treat or cent	Electronic Paired     Electronic Paired	The Below Protocology (Below Pro	In Consult Roter and In Consult Roter and In 16 An 2014 - 1 4 4 2014 - 1 4 2014 -	20109407 20109407 2010947 201097 201097 201097 201097 201097 201097 201097 201097 201097 201097 201097 201097 201097 201097 2010940 2010940 2010940 2010940 20109400 20109400 2010940000000000000000000000000000000000	ell-oct Parent Tree Sangle for Mass. Mar. (Control of the Control of the Control Parent Control of the Control Parent Control of the Control Parent Control of the Control of the Control of the Control Parent Control of the Control Parent Control of the Control Parent Control of the Control Market Control of the Control Parent Control of the Control Market Control of the Control Parent Control of the Control of the Control of the Control Parent Control of the Control of the Control of the Control Parent Control of the Control	Beker Panden dhei 77-fr dhei 77-f	Income and Difference         Parablemic           Difference         24%           Difference         26%           Difference         26% </td <td>C Bartares (Mar. 1.500) C Bartares (Mar. 1142-240) 27 27 27 27 27 27 27 27 27 27</td> <td>9 20 21</td> <td></td> <td></td>	C Bartares (Mar. 1.500) C Bartares (Mar. 1142-240) 27 27 27 27 27 27 27 27 27 27	9 20 21		
Orient cercentl Treat or cent	Electronic Constraints     Electronic Const	REALT REALT REALT Sangle John Sangle John Composition REALT Sangle John Composition REALT REALT REALT Sangle John Composition Composit	In Connect International Inter	20109407 20109407 2010947 201097 201097 201097 201097 201097 201097 201097 201097 201097 201097 201097 201097 201097 201097 2010940 2010940 2010940 2010940 20109400 20109400 2010940000000000000000000000000000000000	Cilled Paired Tee Sample for Water Mark Mark Darweite Defense Affect (Cincol Sector Defense Affect (Cincol Sector Defense Affect (Cincol Sector Defense Affect (Cincol Sector Defense Affect (Cincol Sector Defense Affect (Cincol Sector Defense Affect (Cincol Sector Defense Defense (Cincol Sector Defense (Cincol Sector Def	Beker Panden dhei 77-fr dhei 77-f	Total actual           Extension         Panellania           2010         2010           2010	C Bartares (Mar. 1.500) C Bartares (Mar. 1142-240) 27 27 27 27 27 27 27 27 27 27			

According to the above data it is found that the returns before the pandemic was found to be –lesser than the returns of the index after the pandemic for the following indices BSE Material, BSE Consumer, BSE Industrial, BSE Utlities, BSE Metal, and BSE Power. And for these sectors the difference is significant based on p-value. And for the other sectors the returns are high after the pandemic but those differences are not significant based on the p-value. Only one sector which is very badly affected and failed to recover after the pandemic period is BSE Power. COMPARISON OF ALL THE 19 INDICES USING ANOVA FOR THE PERIOD MAY-2012 TO MAY-2022 Time Period(ROWS):

H0: There is no significant difference in the returns across the time periods
H1: There is a significant difference in the returns across the time periods
Sectorial Index Returns (COLUMNS):
H0: There is no significant difference in the returns across the sectors
H1: There is a significant difference in the returns across the sectors

Source of						
Variation	SS	df	MS	F	<b>P-value</b>	F crit
Rows	393.0788569	9	43.67543	24.8412626	2.17E-26	1.938083286
Columns	11.79907728	18	0.655504	0.37283101	0.990973	1.667863178
Error	284.8252738	162	1.758181			
Total	689.703208	189				

#### **INFERENCE:**

It is evident from the result that for the period May 2012 to May 2022, the year 2020-21 has outperformed well in terms of return with a sum of 80.48, average of 4.23 and variance of 3.18, the performance was good because the returns was high during this period. Followed by the years 2014-15 with sum returns of (39.04), 2016-17 with sum returns of (37.36) and so on. The least performed years by the Indices during this period were 2019-20 with a negative sum return of -23.97, followed by the years 2018-19 (-4.49) and 2015-16 (-3.18).

When compared to overall 19 BSE Indices Consumer Durables has outperformed well in-terms of returns, followed by Information Technology, Teck, Bankex, Energy, Finance, and Consumer Discretionary. The least performed Indices for the said period was Telecom followed by Metal, Oil and Gas, Utility and Power. Thus it is understood that those invested on Indices like Consumer Durables followed by IT, Teck, Banks, Energy and finance grabbed good returns during this period than compared to those indices which didn't perform well.

The obtained p-values for the rows are lesser then 0.05. Accept H1, it states that there is a significant difference in the returns of the selected sectors across the time period. Whereas, the p-value for columns is greater than 0.05, the difference in the returns of the sectorial indices are not significant.

## FORECASTING THE RETURNS OF THE SELECTED INDICES FOR THE NEXT THREE YEARS:

PROJECTED RETURNS OF THE SELECTED INDICES									
YE AR	MATE RIAL	CONSUME R DISCRETIO NARY	ENER GY	FMC G	FINA NCE	HEALT H CARE	INDUSTR IALS	IT	
202 3	1.7442	0.9028	2.3305	0.8225	0.8951	0.6186	1.4551	1.666 0	
202 4	1.8116	0.8311	2.5187	0.8298	0.8400	0.5339	1.4925	1.660 2	
202 5	2.6872	0.7593	2.7068	0.8371	0.7850	0.4492	1.5298	1.584 7	
YE AR	TELEC OM	UTILITIES	AUT O	BAN KEX	CAPI TAL GOOD S	CONSU MER DURAB LES	METAL	OIL & GAS	
202 3	0.9694	2.4821	0.5109	1.1273	1.1105	1.8676	2.0414	1.184 311	
202 4	1.0511	2.7744	0.4115	1.1039	1.0915	1.8939	2.2381	1.243 375	
202 5	1.1328	3.0667	0.3122	1.0806	1.0726	1.9202	2.4349	1.302 439	
YE AR	POWE R	REALTY	ТЕСК						
202 3	2.7342	2.6968	1.3721						
202 4 202	3.0746	3.0390	1.3729						
202 5	3.4150	3.3813	1.3736						

It was found that, the forecasted returns for BSE BASIC MATERIAL, ENERGY, FMCG, INDUSTRIALS, TELECOM, UTILITIES, CONSUMER DURABLES, METAL, OIL & GAS, POWER, REALTY, TECK Indices for the period 2023, 24 and 25 are increasing in nature. It was found that. the forecasted returns for CONSUMER DISCRETIONARY, FINANCE, HEALTHCARE, IT, AUTO, BANKEX, and CAPITAL GOODS Indices for the period 2023, 24 and 25 are decreasing in nature.

# SUGGESTIONS BASED ON FINDINGS:

The study found that BSE Consumer Durables has performed well in-terms of returns, followed by BSE Information Technology, BSE Teck, BSE Bankex, BSE Energy, BSE Finance BSE Consumer and has earned good Discretionary returns during the study period, so it is advised to investors to invest in this particular Indices to earn good returns in future with minimal risk.

- The study provides evidence that BSE Consumer Durables has high volatility when compared to rest of the indices. So, Investors can invest in BSE Consumer Durables sector in order to earn abnormal profits in future.
- It is advised to investors to be careful before investing or choosing to invest in following indices BSE Telecom, BSE Metal, BSE Oil and Gas, BSE Utility and BSE Power as they provide lower returns during the study period.
- Investors should have certain knowledge regarding stock market before investing, because of covid situation there's been huge price fluctuations, thus IOT is advised to investors to be aware, updated with the market information and finally to invest there investment for a better return by avoiding risk.
- 2020-21 has marked a good overall return when compared to rest of the period, since investors have started investing in varied sector and grabbed good amount of return during this period, thus it is advised to investors to have a knowledge about market and indices in order to earn good returns.

#### **CONCLUSION:**

The current study uses monthly data to give a thorough examination of the effects of sectoral indices of the Bombay Stock Exchange of India during a ten-year period from May 2012 to May 2022. The risk and return for the BSE sectoral indexes discussed above are assessed to be at a moderate level. They are also directly connected to and integrated with the sectoral indices at the same time. In the majority of analyses, risk and return play a big role in determining any financial decisions.

An investor should continually keep an eye on the market and refresh his portfolio by choosing the best stocks to invest in at any given moment. As investors become more knowledgeable about the stock market, the securities industry is expanding significantly. There are several insights into the stock market. However, as technology advances and investment obstacles are the stock markets removed. will demonstrate this in the future. Future developments will lead to the integration of the Indian stock market with the global stock market.