A Case Study of Performance comparison of NIFTY 50 with Nippon ETF PSU Bank and Kotak PSU Bank Exchange Traded Funds over the past decade

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Abstract - Exchange-traded funds (ETFs) are considered to be the most important financial innovations of the late twentieth and early twenty-first centuries. Since their first inception in 1993 in US, ETFs have opened a new panorama of investment opportunities and within a very short time; ETFs have become very popular and widely used investment vehicles. ETFs have revolutionized the way both institutional and retail investors construct their investment portfolios. The ETFs provide liquid access to variety of asset class that can be an underlying index, bond, commodity, or basket of assets. ETFs help large investors as well as small investors in building institutional-caliber portfolios. One of the main attributes of ETFs is their ability to provide exposure to areas that were either previously too expensive or difficult to reach. The paper analyzes the performances of two ETF taken into consideration and also compares their returns with NIFTY 50 index.

I. INTRODUCTION

ETFs have been the latest innovation in the Indian financial markets. These are new species of financial market instruments and have become the buzzword in the Indian Stock Market. ETFs have been in vogue in the global financial markets, especially the US financial markets for a long time. A profile of their popularity can be gauged from the fact that around 60 per cent of the exchanged volumes on the American Stock Exchange originates from ETFs. Recently, these funds have started growing in the domestic Mutual Fund Market in India. As reflected by the size of the market, these have become popular among both retail and institutional investors. The fast development of the trade exchanged universe has delivered a large group of items that facilitate the investors to effectively take advantage of the worldwide equity market. Investors have grasped the ETFs structure as the favored means of getting to value showcases everywhere throughout the globe, taking full preferred standpoint of the low - upkeep, usability, and cost productivity advantages connected with the ETF wrapper. There is a need to study the performance of ETFs in India as it tracks a Benchmark Index and the return expectation is the same as that of the index.

India presents itself as a lucrative opportunity for those with a stomach for risk and a long-term investment horizon given the nation's unparalleled economic growth potential, thriving middle class, business deregulation, and ongoing foreign investment inflows.

Statement of the Problem

ETFs are the most transparent and index tracking investment product enabling the investors to invest in low cost, tax efficient financial product along with unique creation and redemption process to attract customers. Due to the thriving middle class, followed by business deregulation and a thrust of foreign investment inflows ETFs are seen as a low risk investment option for those who take calculative risk.

Hypothesis

There is no positive trend in the returns of Nippon ETF PSU Bank and Kotak PSU Bank ETF period 2011 to 2020.

II. REVIEW OF LITERATURE

Mahmod and Joseph (2012) studied the replication ability of ETFs and factors linked with tracking error. They selected the database of 23 ETFs starting from 3rd Jan, 2006 till 31st Dec, 2008. He used Co-Integration and Error Correction Model to know the relationship between ETFs and its Benchmark Index.

Khanapuri (2012) evaluated the ETFs prices along with the underlying index security prices to check their co-movement. He collected the database of NIFTYBEES and GOLDBEES ETFs from March 19th, 2007 to August 17th, 2011. He used Vector Auto-Regression to evaluate the

impact of Equity based NIFTYBEES and Gold based GOLDBEES ETFs returns. The study revealed that Equity ETFs showed the co-movement with their underlying Benchmark Indices than the Commodity ETFs.

Blitz and Huij (2012) studied the performance of US and European Stock Markets index tracking financial product ETFs as US and Europe jointly account for 90% of market capitalization. They selected the database of all ETFs listed in Global ETFs Emerging Market Index and used closing values and NAV for conducting the research. They used Regression and t-test to evaluate the ETFs returns.

Madhavan (2014) examined the nonlinearity scenario of ETFs listed on National Stock Exchange in India. He applied number of tests such as McLeod Li test, BDS test, Tsay F-test, Topological Test, AR-GARCH and Lyapunov Exponent Test for the evaluation of data. The study revealed that the test results relating to a battery of nonlinearity tests demonstrate predominance of nonlinearity in the midst of all ETFs with the exception of INFRABEES, also the chaos was missing in any of the ETFs considered for this study.

Vidhyapriya (2014) analyzed the Gold ETFs in India for providing the assistance to the investors in selecting the superior ETF. She collected the database of all Gold ETFs in India listed on National Stock Exchange (NSE) from 2009 to 2014. The study found that Gold ETFs are a better option for the retail and institutional investors who want to make long term investment.

Dheeriya et al. (2014) evaluated the linkage of equity returns volatility during 2012 among US and emerging Country ETFs. They selected the database of 223 days for the study from 2011 to 2012. They used Multivariate Auto Regression, Arch and Garch Model to test the co-moments between ETF returns. The study revealed the significance of co-movement among US and emerging country returns of ETFs.

ETF Mutual Funds Scheme Performance Analysis

Index funds that are listed and traded on exchanges like equities are basically exchange traded funds. Prior to the invention of ETFs, this was not conceivable. ETFs have given Institutional and Retail Money Managers access to a whole new world of investing options on a global scale. They make it possible for investors to invest broadly across whole stock markets in many nations and certain industries with relative ease, in real time, and at a lower cost than many traditional kinds of investment. A basket of equities known as an ETF represents the makeup of an index, such as the S&P CNX Nifty or the BSE Sensex. The net asset value of the underlying equities that the ETF represents determines the trading value of the ETF.

SCHEMES SELECTED

S.NO	SCHEMES	DATE OF INCEPTION
1	Nippon ETF PSU Bank	25-Oct-07
2	Kotak PSU Bank ETF	08-Nov-07

Source: www.amfiindia.in

Nippon ETF PSU Bank

Nippon India Mutual Fund is a joint venture between India's Reliance Capital and Japan's Nippon Life Insurance company. With effect from September 28, 2019; the name of the fund house was changed from Reliance Mutual Fund to Nippon India Mutual Fund after Nippon buying Reliance's stake. Nippon Life Insurance is Japan's one of the leading insurance providers & financial services companies. The fund house offers bouquet of research-driven products to its investors to meet their varying requirements. The distribution network is wide and extensive with presence in over 300 cities across the country.

Nippon India Mutual Fund's main objective is to generate value for investors by introducing new products and customer care programmes. The fund house's major goal is to support investors in getting decent returns on their savings and to guarantee the liquidity of their assets. Additionally, the fund house is regarded as one of India's top and fastest growing mutual funds because to its years of extensive and important expertise. It was the first mutual fund to become public in India and a pioneer in the field. Additionally, the fund house is known for having some of the greatest customer service in the business.

According to asset size, Nippon India Mutual Fund is India's fifth-largest mutual fund firm. For the quarter ended March 2020, the investment firm managed assets worth (AUM) of Rs

2.05 lakh crore. The fund house's asset size grew from its December 2019 quarterly number by 0.25%. The fund company has been in business for about two decades.
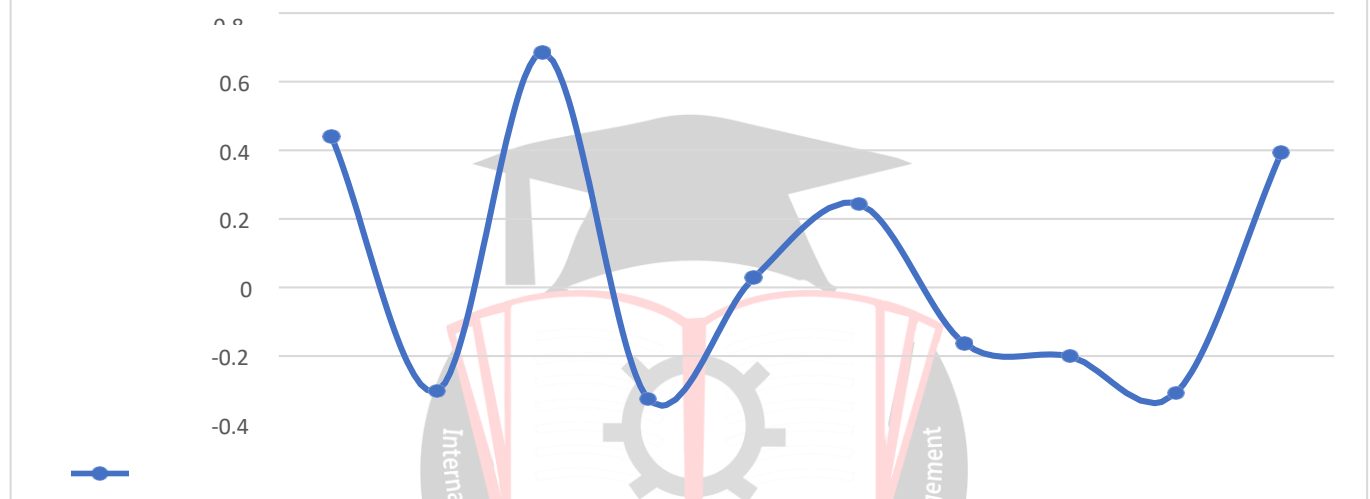
RETURNS OF NIPPON ETF PSU BANK BEES

Year		Returns YOY
2011-12		0.4391
2012-13		-0.3024
2013-14		0.6853
2014-15		-0.3253
2015-16		0.0283
2016-17		0.2433

2017-18	-0.1647
2018-19	-0.2015
2019-20	-0.3089
2020-21	0.3925

	Scheme	Years	Mean	Std. Deviation	Minimum	Maximum
Nippon	India	10	0.0486	0.348327415	-0.325300	0.685300

Table depicts the returns of Nippon India ETF Nifty PSU Bank from the year 2011 to 2020. It is significant to note that the returns provided by the Nippon India ETF Nifty PSU Bank to investors was highest in the year 2014 (68.5300%). The investors of Nippon India ETF Nifty PSU Bank gained in the year 2014. The average returns of Nippon IndiaETF Nifty PSU Bank during the period 2011 to 2020 were 0.0486. The range of returns during the period 2010 to 2020 was -0.325300to 0.685300. The analysis concludes that the investors did not gain much from the Nippon India ETF Nifty PSU Bank during the period 2011 to 2020.

Returns of Nippon India ETF Nifty PSU Bank Yearfrom 2011-2020

	1	2	3	4	5	6	7	8	9	10
Returns YOY	0.4391	-0.3024	0.6853	-0.3253	0.0283	0.2433	-0.1647	-0.2015	-0.3089	0.3925

Null Hypothesis

There is no positive trend in the returns of Nippon India ETF Nifty PSU Bank during the period 2011 to 2020.

R	R Square	Adjusted R Square	Std. Error of the Estimate
.018	.000	-.142	0.386

Table reveals the model summary of Nippon India ETF Nifty PSU Bank BeES. The study shows that R-value is 0.018 and R2 0.000, Adjusted R2 -.142, andStd. Error of the Estimate is 0.386. From the analysis it is clear that there are no variations of returns during the period 2011 to 2020. Futher it also indicated that indicates the Nippon India ETF Nifty PSU Bank BeES does not generally follow the movements of the index.

ANOVA Table

	Sum of Squares	df	Mean Square	F	Sig.
Regression	.000347	1	.000347	.002	. 0.9618
Residual	21.0434	8	2.149		
Total	21.0438	9			

Table exhibits the results of ANOVA test for performance of Nippon India ETF Nifty PSU Bank during the period 2011 - 2020. The calculated F and P-value for the said period were 0.001 and 0.9618. It indicates that the p-value isgreater than the table value at 5 per cent level of significance (> 0.05). Therefore, the null hypothesis is accepted and concluded that there is no positive trend in thereturns of Nippon India ETF Nifty PSU Bank during the period 2011 -2020.

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	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Year	.0.020	.325	.013	.061	.952
(Constant)	-12.733	498.853		-.046	.952

Table highlights the results of Coefficients for performance of Nippon India ETF Nifty PSU Bank during the period 2011 - 2020. The p-value is >0.05, therefore the study concluded that the investors did not gain much from the Nippon India ETF Nifty PSU Bank during the period 2011 - 2020.

Kotak PSU Bank ETF

Kotak Nifty PSU Bank ETF is trading on the National Stock Exchange (NSE) & Bombay Stock Exchange (BSE). It reflects the evolution of the Nifty PSU Bank Index. The Fund manager would invest predominantly in stocks forming part of the underlying in the same ratio. Kotak Nifty PSU Bank ETF endeavors to mirror the returns given by the PSU Bank Index as closely as possible post expenses. Units can be bought and sold like any other equity share on the Stock Exchange through a stockbroker. Any investor eligible to invest in equity shares can invest in Kotak Nifty PSU Bank ETF.

Kotak Nifty PSU Bank Exchange Traded Fund (ETF) is an open-ended exchange-traded fund that tracks the performance of the Nifty PSU Bank Index. This ETF invests in the stocks of public sector banks (PSBs) listed on the National Stock Exchange (NSE).

Here are some key details about the Kotak Nifty PSU Bank ETF:

Fund House: Kotak Mahindra Asset Management Company Ltd. Benchmark Index: Nifty PSU Bank Index

Expense Ratio: 0.25% (as of January 31, 2023)

Minimum Investment: 1 unit (currently trading around Rs. 30) Listing: The ETF is listed on the NSE and BSE.

Investing in Kotak Nifty PSU Bank ETF provides investors with exposure to the PSU bank sector and allows them to participate in the growth potential of this sector. It can be a good investment option for those who believe in the long-term growth prospects of the PSU banking sector in India. However, investors should keep in mind that the performance of the ETF is directly linked to the performance of the underlying benchmark index, and there is no guarantee of returns.

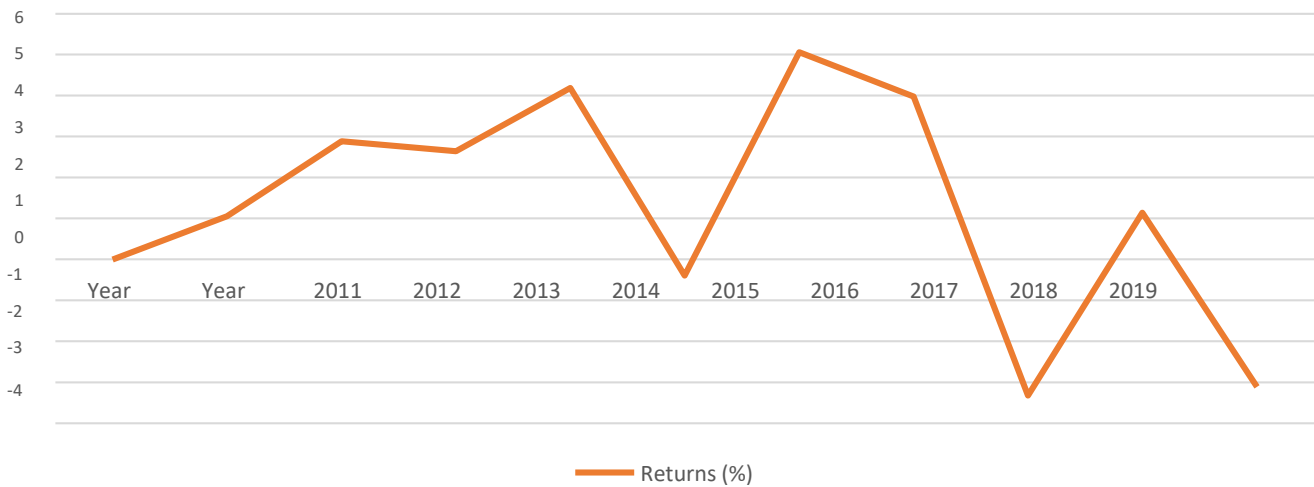### Returns of Kotak Nifty PSU Bank ETF

Year	Returns (%)
2011	11.54%
2012	10.56%
2013	28.87%
2014	41.87%
2015	-3.92
2016	50.57
2017	39.77
2018	-33.19
2019	11.43
2020	-31.04

	Scheme	Years	Mean	Std. Deviation	Minimum	Maximum
Kotak	Nifty	10	13.90	26.5523844	-33.19	50.57

From the above table it is depicted that Kotak Nifty PSU Bank ETF returns from the 2010 to 2020. It is significant to note that the returns provided by the Kotak Nifty PSU Bank ETF to investors was highest in the year 2016 50% %). The investors of Kotak Nifty PSU Bank ETF gained in the year 2016. The average returns of Kotak Nifty PSU Bank ETF during the period 2011 to 2020 were 13.90. The range of returns during the period 2011 to 2020 was 13.90 to The analysis concludes that the investors did not gain much from the Kotak Nifty PSU Bank ETF during the period 2011 to 2020.

RETURNS OF KOTAK NIFTY PSU BANK ETF

Null Hypothesis

There is no positive trend in the returns of the Kotak Nifty PSU Bank ETF during the period 2011 to 2020.

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.9653	0.9307	-0.8934	10.007

The above table interprets that the correlation coefficient, R, measures the strength and direction of the linear relationship between the two variables. In this case, R = 0.9653, which indicates a strong positive linear relationship between Year and Returns. The coefficient of determination, R-Square, represents the proportion of the total variation in the Returns variable that is explained by the linear relationship with the Year variable. In this case, R-Square = 0.9307, which means that 93.07% of the variability in the Returns variable can be explained by the linear relationship with the Year variable.

The adjusted R-Square takes into account the number of variables and the sample size of the model, which can be helpful in comparing models with different numbers of variables or different sample sizes. In this case, Adjusted R-Square = 0.8934, which means that the model still explains a high proportion of the variation in the Returns variable after accounting for the number of variables and the sample size.

And lastly the standard error of the estimate, S, represents the average distance that the observed values fall from the predicted values. In this case, Std. Error of the Estimate = 10.007, which means that the predicted Returns values on average fall within +/- 10.007 of the actual Returns values. It means that it is clear that there are variations of returns during the returns from the period of 2011 to 2020.

ANOVA Table

Source	Sum (SS)	Degrees of Freedom (df)	Mean Square (MS)	F-ratio (F)
Between Groups	5333.729	9	592.6366	1.7709
Within Groups	3347.383	10	334.7383	
Total	8685.112	19		

Form the above table it shows that F-ratio (F) tests the hypothesis that the group means are equal. In this case, the F-ratio is 1.7709. If the F-ratio is greater than 1, it suggests that there is more variation between the groups than within the groups, which would support the alternative hypothesis that the group means are not equal. However, the F-ratio is not statistically significant because it is less than the critical value of F at the chosen level of significance. Therefore, we fail to reject the null hypothesis that the group means are equal.

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	Unstandardized Coefficients		t	Sig.
	Estimate	Std. Error		
Intercept	13.130364	6.208715	2.114	0.05719
Time	2.272592	0.385127	5.910	0.000251

From the following it interpret the results, we can see that the intercept is 13.13, which represents the average return for the ETF in the first year (2010). The coefficient for the time variable is 2.27, which indicates that the average return for the ETF increased by 2.27 percentage points per

year over the 11-year period. The standard errors for the intercept and the coefficient for the time variable are 6.21 and 0.39, respectively. The t-value for the coefficient for the time variable is 5.91, and the p-value is very small (0.000251), indicating that the coefficient is statistically significant.

SECTION II: COMPARISON OF RETURN AND RISK OF SELECTMUTUALFUND SCHEMES WITH BENCHMARK PORTFOLIO

Year	Kotak Nifty PSU Bank ETF Fund Returns (%)	Nifty 50 Returns(%)
2011	11.54%	-24.71
2012	10.56%	26.69
2013	28.87%	6.54
2014	41.87%	31.39
2015	-3.92	-4.11
2016	50.57	3.01
2017	39.77	28.65
2018	-33.19	-3.09
2019	11.43	12.27
2020	-31.04	-7.5

Source: Computed from secondary data

Metric	Kotak Nifty PSU Bank ETF Returns	Nifty 50 Returns
Standard Deviation	30.56%	19.45%
Correlation Coefficient	0.77	-0.014

The above table indicated that standard deviation of the Kotak Nifty PSU Bank ETF Fund Returns is higher than that of Nifty 50 Returns, indicating that the fund is riskier than the benchmark. The correlation coefficient between the two variables is positive, indicating a positive relationship, but not a strong one. It is important to note that a higher return does not necessarily mean a better investment option, as it is always accompanied by higher risk. Therefore, investors should carefully consider their risk tolerance before making investment decisions.

III. CONCLUSIONS

This study makes number of significant contributions towards the understanding of the pricing efficiency and performance of equity ETFs in India. With the best knowledge and information it can be said that this is one of the few studies in India which examines ETF's pricing efficiency, tracking efficiency and also compares the performance of ETFs with the index funds. The graphical presentation of ETF's price deviation and tracking error also makes this a very unique study. The study also

compares the ETFs' price deviation by grouping them on the basis of common underlying indices, different underlying indices and common AMCs. The study provides evidence in support of existence of pricing inefficiency in ETF market in India. With regard to the performance evaluation, the study finds tracking efficiency in ETF market and also observes that ETFs and index funds provides similar return and risk exposure to the investors and also exhibits similar tracking efficiency.

REFERENCES

[1] M. Jayadev (1996) ―Mutual Fund Performance: An Analysis of Monthly Returns‖ Finance India, Vol. X No. 1, March 1996, Pages— 73–84

[2] Ackert, L.F. and Y.S. Tian, 2000, Arbitrage and Valuation in the Market for Standard and Poors Depositary Receipts, Financial Management, 29, 71-87.

[3] Delva, I.W., 2001. Exchange Traded Funds Not for Everyone, Journal of Financial Planning, 14, 110-124.

[4] Bernstein, J. Phyllis, (2001), ―A Primer on Exchange-Traded Funds‖, Journal of Accountancy, Vol. 193 (1), pp. 38-41.

[5] Gastineau, L. Gary, 2001, ―Exchange-Traded Funds: An Introduction‖, Journal of Portfolio Management, Vol. 27 (3), pp. 88-96.

[6] Frino, Alex and David R. Gallagher, 2001, ―Tracking S&P 500 Index Funds‖, Journal of Portfolio Management, Vol. 28 (1), pp. 44-45.

[7] Joanne M . Hill and Barbara Mueller(2001) ETFs and Indexing , Vol. 2001, No. 1: pp. 50-65

[8] Elton, E.J., M.J. Gruber, G. Comer and K. Li, 2002, ―Spiders: Where are the Bugs‖, Journal of Business, 75 (3), 453-472.

[9] Poterba, J.M. and J.B. Shoven, 2002, ―Exchange-Traded Funds: A New Investment Option for Taxable Investors‖, American Economic Review, 92 (2), 422-427.

[10] Engle, R. and D. Sarkar, 2002, ―Pricing Exchange Traded Funds", Working Paper, New York University. Scott Rasmussen, 2002, Going long with baskets: A cost-benefit comparison of exchange traded funds and index mutual funds, Economics Honors Thesis.

[11] Philippe Jorion, ―Portfolio Optimization with Tracking-Error Constraints‖, Financial Analysts Journal, September/October 2003, pp-70-82.

[12] Kostovetsky, Leonard, (2003), ‗Index Mutual Funds and Exchange Traded Funds‗, Journal of Portfolio Management, Vol.29 (4), pp.80-92.

[13] Gastineau, G.L., 2004, ―The Benchmark Index ETF Performance Problem‖, Journal of Portfolio Management, 30 (2), 96-103.

[14] Gallagher, D.R. and R. Segara, 2004, ―The performance and trading characteristics of exchange-traded funds‖, Working Paper, The University of New South Wales.

[15] Andy Lin and Fan-Ju (2004), Taiwan‗s First Exchange Traded Fund Efficient? , Journal of Financial Studies Vo1 . 1 2 No.3

[16] Jares, T.E. and A.M. Lavin, 2004, ―Japan and Hong Kong Exchange-Traded Funds (ETFs): Discounts, Returns, and Trading Strategies‖, Journal of Financial Services Research, 25 (1),57-69.

[17] Simon, D.P. and J.S. Sternberg, 2005, ―Overreaction and Trading Strategies in European iShares‖, Journal of Alternative Investments, 8 (1), 29-41.

[18] Andy Lin Anthony Chou (2006) , The Tracking Error and Premium/Discount of Taiwan‗s First Exchange Traded Fund , Web Journal of Chinese Management Review • Vol 9 • No 3

[19] Milonas, N.T. & Rompotis, G.G. (2006). Investigating European ETFs: The Case of the Swiss Exchange Traded Funds. Working Paper, University of Athens. Received from http://ssrn.com/abstract=929460

[20] Ammann, M., Kessler, S., Tobler, J., Analyzing Active Investment Strategies Using Tracking error variance Decomposition, Journal of Portfolio management, 33(1), 2006, pp 56-67.