

International Perspective on Exchange Traded Funds: Their Growth and Trends in America, Asia-Pacific, Europe, Africa, and the Middle East Region

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Abstract

Exchange-traded funds (ETFs) are open-ended managed funds, which are listed and traded on major stock exchanges around the world. They are not mutual funds in the traditional sense; rather, they are hybrid instruments combining aspects of common stocks and mutual funds and provide many of the benefits of both. An ETF seeks to generally correspond to the price and yield performance of a particular index before fees and expenses. The major aim of this paper was to ascertain and analyze the growth and trends of ETFs traded globally. The data pertained to the total number of trades, and the trading values were picked up for the period from 2003 - 2012 to check the mean, coefficient of variation, and compound growth rate of ETFs. To check the significant level of calculated CGR, the method of *t* - value was used. The future predictions were built to conform to the future prosperity of ETFs for the period of next 5 years, that is, from 2013 to 2017. The study suggested that appropriate regulatory and market reforms can ensure the continued success of ETFs.

Keywords: ETPs, ETFs, stock exchanges, total trading value, number of trades

JEL Classification: G12, G15, G17

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Exchange Traded Products are a type of derivative - priced security that trade intra-day on the securities exchanges, where the value is derived from other investment instruments such as a commodity, currency, share price, or interest rate. It includes exchange traded funds (ETFs), exchange traded vehicles (ETVs), exchange traded notes (ETNs), and certificates.

An ETF is the most popular type of ETP. It tracks the performance of an index, commodity, or basket of assets. These are designed to add flexibility, ease, and liquidity of stock trading to the benefits of traditional index-fund investing. ETFs are securities certificates that state legal right of ownership over part of a basket of individual stock certificates (Aggarwal, 2012). ETN returns are based upon the performance of a selected market index minus applicable fees; no period coupon payments are distributed, and no principal protections exist. ETVs replicate the commodity benchmarks and are typically issued by grantor trusts in the United States that invest in commodities or currencies.

ETFs are the new financial innovative instrument introduced globally with the objective to provide broader exposure to investors about the working of the stock market and specific sectors with relative ease on a real-time basis and at a lower cost than many other types of investments. ETFs are index funds whose shares are listed on a stock exchange and are traded like equity securities at market prices. ETFs allow investors to buy and sell shares of a fund that represent the collective performance of a selected group of securities (Aggarwal, 2012). Moreover, it looks like a mutual fund that tracks an index, a commodity, or a basket of assets like an index fund, but trades like a stock on an exchange. ETFs often have lower expense ratios and certain tax efficiencies as compared to

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traditional mutual funds, and they allow investors to buy and sell shares at intra-day market prices. Moreover, investors can sell ETF shares short, write options on them, and set market, limit, or stop-loss orders. The shares of ETFs often trade at market prices close to the net asset value of the shares, rather than at discounts or premiums (Aggarwal & Schofield, 2012).

Background

Aggarwal and Schofield (2012) opined "that the first ETF was introduced in Canada in 1989 as the Toronto Index Participation Fund" (p.4). So, ETFs had their genesis in 1989 with Index Participation Shares, S&P 500 proxy that traded on the American Stock Exchange and the Philadelphia Stock Exchange. This product, however, was demolished after a lawsuit by the Chicago Mercantile Exchange was successful in stopping sales in the United States. A similar product, Toronto Index Participation Shares, started trading on the Toronto Stock Exchange in 1990. Nathan Most and Steven Bloom, Executives of the exchange, designed and developed Standard and Poor's Depositary Receipts, which were introduced in January 1993. These are known as SPDRs or "Spiders". This became the world's largest ETF. iShares - MSCI Index Fund Shares were introduced by Barclays Global Investors, a subsidiary of Barclays plc in 1996. Furthermore, in 1998, the "Dow Diamonds" were introduced for tracking the famous Dow Jones Industrial Average. The Hong Kong Tracker Fund was the first ETF in Asia, introduced in 1999, and the first ETF in Europe was Euro STOXX 50 launched in 2001 (Aggarwal & Schofield, 2012). India's journey began with the introduction of its first ETF called Nifty BeEs in 2002 by Benchmark. In 2007, Benchmark also launched the first Gold ETF (Prasanna, K.P., 2012).

Creation Process

The sponsors of ETFs issue large blocks to authorized participants, typically a market maker, specialist, or institutional investor who obtains shares of the underlying securities and places them in a trust. The authorized participant then splits up these creation units into ETF shares - each of which represents a legal claim to a tiny fraction of the assets in the creation unit and then sells them on a secondary market. Just as closed-end funds do not always trade at a price that precisely reflects the value of the underlying assets in each share of the portfolio, it is also possible for an ETF to trade at a premium or a discount to its actual worth. To liquidate their holdings, most investors simply sell their ETF shares to other investors on the open market. Israeli, Lee, and Sridharan (2015) concluded that ETFs do not sell shares directly to investors. Instead, they only issue shares in large blocks called "creation units" to authorized participants who effectively act as market-makers.

Exchange-traded funds have grown at a tremendous pace in recent years, and the number of offerings have swelled. Today, these securities compete with mutual funds and extend a number of advantages over their predecessors, including low price, liquidity, tax advantages, and so forth. Although ETFs offer various advantages over traditional mutual funds, but it is also a cumbersome investment option. While the concept of ETFs is very much popular in foreign countries, in the Indian markets, it is still in the initial growth phase (Prasanna, K.P., 2012).

Literature Review

Alexander and Barbosa (2005) examined the optimal short-term hedging of ETFs with index futures. The performance of minimum variance hedges for efficient variance reduction and for investors with exponential utility was examined. The study was restricted to four largest passive ETFs (the Spider, the Diamond, the Cubes, and the Russell). The findings related to daily hedging based on OLS regression, exponentially weighted moving averages, and ECM-GARCH models, and the utility-based performance evaluation criterion were assumed to capture an efficient reduction in skewness and kurtosis as well as the variance. The basis risk on U.S. equity

indices was extremely low and as a result, found no evidence that minimum variance hedge ratios outperformed a naive 1:1 futures hedge, either for individual ETFs or for portfolios of ETFs. The authors also found that hedging of an ETF portfolio with only one index future can be almost equally effective as hedging with all the relevant index futures.

Mata and Fox (2009) studied the trends in flow and asset growth, the diversity of ETF product strategies, ETFs distribution, products in the pipeline, and the future directions of ETFs. The work was concentrated in the U.S., but also studied the financial marketplaces of Europe and Asia. Proprietary surveys, extensive discussions with administrators and advisors at all grades of the industry, Strategic Insight : Simfund Databases, and SEC filings were used as research techniques. The authors observed that ETPs which included ETFs, trusts, and ETNs had developed tremendously since their origin in the U.S. It was also estimated that the use of ETFs was growing faster in Europe than in the U.S. The authors observed that Asia also held much potential for the ETF business, but the uptake of passive vehicles in the region was slower.

Sabbaghi (2011) scrutinized the exchange-traded funds and advocated a market – wide proxy for green returns and a green volatility factor. The time-series behavior of returns of ETFs was investigated along with their associated conditional volatility dynamics by using the GARCH model. The cumulative market-wide green returns were found from the inception year 2005 through 2008. Estimating a t - GARCH (1,1) specification, the author found sturdy evidence in favor of volatility doggedness for the 15 green ETFs identified for the study. The outcomes suggested that a 1% volatility-based value-at-risk forecast ranged from \$24,150 through \$26,000 on a daily basis. The research work also provided empirical evidence to support weak-form of market efficiency when examining the green universe of stocks.

Prasanna, B.K. (2012) studied the growth, trends of ETFs with a comparative study of index based ETFs and gold based ETFs in India. It was found that ETFs are the cost and tax effective financial instrument introduced globally because of the prudence and curiosity of investors toward structured investment products. Asset management companies have been putting in their continuous efforts to innovate new ETF products. As the varieties of financial indices increase, there is a corresponding increase in the spectrum of ETF varieties available in the market.

Aggarwal (2012) examined the performance of eight diversified portfolio ETFs by applying mean, standard deviation, skewness, and kurtosis relative to the market. A Sharpe and Treynor ratio of the diversified portfolio ETFs and S&P 500 index was calculated for 3 years. Regression analysis was used to study the relationship between diversified portfolio ETFs and S&P 500 index. Asset allocation optimization model was applied to check the risk to return ratio of diversified portfolio ETFs. It was found that none of the diversified portfolio ETFs had a higher average return of 3 years from the S&P 500 index. Sharpe and Treynor ratios depicted that only few ETFs surpassed the market. The maximum variation in the movement of ETFs was found due to the changes in the market index, that is, S&P 500.

Aggarwal and Schofield (2012) studied the enormous development in market size and complexity of ETFs as well as the regulatory concerns raised by them. This study shed light on the various types of ETFs with the recent trends as well as examined the regulatory concerns raised by the policy makers in different countries in response to the regulatory framework in the U.S. and Europe, and the role of ETFs in emerging markets using the example of India. It was found that ETFs are one of the most successful products introduced on exchanges in recent years. The study also found that synthetic ETFs were more prevalent in Europe and leveraged & inverse ETFs were more prevalent in the U.S.

Prasanna, K. P. (2012) analyzed the risk and return characteristics of 82 ETFs traded on the Indian stock markets from 2006-2011. The author also measured the relationship between the funds and their performance. Alpha values to measure performance, standard deviation to measure risk, and Sharpe ratio to measure risk-adjusted returns were computed. Data envelopment analysis with three inputs and two out variables was used to examine the performance of ETFs and their relative efficiency ranking. It was observed that ETFs grew at 37% annually from 2006-2011. Gold exchange-traded funds surpassed the equity exchange-traded funds with 13%

excess returns, and also attracted large inflows during the post global financial crisis period. DEA analysis ranked domestic and overseas funds the best funds traded at the Indian market. These funds were floated by asset management companies and by asset management companies with their joint ventures in India. The study also inferred that fund size had no effect on the performance of ETFs - whether it was of large size or small size. Overall, ETFs generated higher returns by outperforming the market index.

Israeli et al. (2015) investigated whether an increase in the quantity of firm shares controlled by ETFs was connected with a decrease in the pricing efficiency of the selected securities. It was observed that an increase in ETFs ownership was related to an increase in trading costs of firms due to the existence of uninformed investors in the market. Higher levels of ETF ownership was associated with increased stock return synchronicity, and future earnings response coefficients reductions were also found. The association between ETF ownership and the number of analysts covering the firm was observed to be negative. The study suggested that an increase in ETF ownership may lead towards weaker information environments for the selected firms.

Need of the Study

ETFs are portfolio investment products that are admitted to listing or trading on a regulated exchange. They provide exposure of a diversified basket of shares or other financial instruments to investors. ETFs' aim is to replicate the performance of a specific index; this index can be a blue chip, a region, or a sector index. However, it is a new instrument, though its popularity and acceptability is not as high as in the case of other financial instruments due to various causes. This study aims at examining the growth, trends, and future of ETFs.

Objectives of the Study

- (1) To analyze the growth and trends of ETFs traded at the international level.
- (2) To identify the three best stock exchanges from the selected regions focusing on the total trading value.

Scope and Research Methodology

(1) Scope of the Study : To accomplish the targets of research, a sample of 32 stock exchanges representing three regions, that is, the American region, the Asia-Pacific region, and Europe - Africa - Middle East region were selected. The data was collected for a period of 10 years from 2003 to 2012. The total number of exchange traded funds traded at the three regions and the total trading value of the traded funds were the only two selected parameters to do the research. As a next step, future predictions were made for a period of 5 years - from 2013 to 2017 to examine the trends and growth in ETFs of the above-mentioned three regions. The three best stock exchanges from the three regions were also identified. So, the scope is limited to exchange traded funds traded at 32 stock exchanges of three regions.

(2) Database and Statistical Techniques for Analysis : Secondary data were taken from the websites of SEBI and RBI. The compound growth rate (CGR), mean, standard deviation, and coefficient of variation were computed to determine the changes in total number of trades and total trading value of ETFs over a point of time. Simple linear regression equation was constructed to determine the future consequences. Time was taken as an independent variable and total traded ETFs and total trading value of ETFs were chosen as the dependent variables.

The three best stock exchanges were selected by considering three sub-parameters, that is, mean, CGR, and prediction values of the total trading value from each region. Those exchanges were shortlisted as best that fell in three or at least in two sub-parameters with the highest value. All statistical calculations were made by using Microsoft Excel and SPSS.

Table 1. Descriptive Statistics of the American Region

Total Number of Trades in ETFs: Descriptive Statistics						
Stock Exchange	Mean (in thousands)	C.V (%)	CGR (%)	t - value	Predictions (in thousand)	% change
BM & FBOVESPA	194.202	170.68	224.82	3.44*	997.83	0.4870
Mexican Exchange	71025.2	315.61	374.06	1.73	438745.09	-38.11
NASDAQ OMX	105155	132.24	1170.73	2.77*	410730.92	211.16
NYSE Euronext (US)	135007	96.53	530.58	2.88*	426806.11	219.72
TMX Group	5134.7	108.38	345.6	3.28*	18369.11	142.68

Table 2. Descriptive Statistics of the American Region

Total Trading Value of ETFs: Descriptive Statistics						
Stock Exchange	Mean (US\$ million)	C.V (%)	CGR (%)	t - value	Predictions (US\$ million)	% change
BM & FBOVESPA	3,076	149.95	199.57	4*	14879.64	3
Mexican Exchange	41,107	100.13	82.58	9*	164515.82	42
NASDAQ OMX	18,66,098	115.69	1886.47	4*	7349261.87	154
NYSE Euronext (US)	28,24,388	82.06	135.5	3*	8216467.03	158
TMX Group	79,585	73.55	34.5	3*	215122.86	152

Data Analysis and Interpretation

The American Region

The descriptive statistics of the yearly data of the total number of trades and total trading value of ETFs of five stock exchanges of the American region (2003 to 2012) are given in the Table 1 and Table 2. The future predictions for 5 years - from 2013 to 2017 are also depicted.

The Table 1 shows that the average is observed to be the highest in NYSE Euronext being 135007 thousand, followed by NASDAQ OMX, then Mexican Exchange, TMX Group, and BM & FBOVESPA, respectively over the study period.

✎ The coefficient of variation indicates highest variation of 315.61% in Mexican Exchange, 170.68% in BM & FBOVESPA, 132.24% in NASDAQ OMX, 108.38% in TMX Group, and 96.52 % in NYSE Euronext (U.S.).

✎ The *t* - values indicate that four out of the five exchanges of the American region have significantly risen. It is observed that the Mexican Exchange only grew insignificantly. BM & FBOVESPA, NASDAQ OMX, NYSE Euronext, and TMX Group have grown significantly.

✎ Future predictions have been made to check the future prosperity of the total number of trades in ETFs for the selected period. The analysis reveals that all stock exchanges of the American region would rise except for the Mexican Exchange in the coming selected period. The BM & FBOVESPA exchange would rise by 0.4870%, NASDAQ OMX by 211.16%, NYSE Euronext (U.S.) by 219.72%, and TMX Group by 142.68%. However, the Mexican Exchange would fall to 438745.09 thousand with negative percentage (-) of 38.11%.

The Table 2 reveals that the highest mean score has been achieved by NYSE Euronext (U.S.) with \$ 28, 24,388 million followed by NASDAQ OMX, TMX Group, Mexican Exchange, and BM & FBOVESPA with 3,076.

Table 3. Descriptive Statistics of the American Region

Best Stock Exchanges: Descriptive Statistics			
Stock Exchange	Mean (US\$ million)	CGR (%)	Predictions (US\$ million)
NYSE Euronext (US)	28,24,388	135.5	8216467.03
NASDAQ OMX	18,66,098	1886.47	7349261.8
TMX Group	79,585	34.5	215122.86

↪ The coefficient of variation is observed as 149.9523% in case of BM & FBOVESPA, 115.6961% in NASDAQ OMX, 100.132% in Mexican Exchange, 82.0669% in NYSE Euronext, and 73.55314 % in TMX Group, respectively for the total trading value of ETFs.

↪ The *t*-values highlight that all the stock exchanges of the American region have grown significantly. The BM & FBOVESPA has grown with a CGR of 199.57%, NASDAQ OMX with 1886.47%, NYSE Euronext with 135.50%, TMX Group with 34.50%, and Mexican Exchange with 82.58% over the study period.

↪ The predictions are made to throw light on the comfortable circumstances of the total number of trades in ETFs for the selected period of the study. The analysis reveals that all stock exchanges of the American region would rise. The BM & FBOVESPA exchange would rise to \$14879.641 million, Mexican Exchange to \$164515.82 million, NASDAQ OMX to \$7349261.87 million, NYSE Euronext (U.S.) to \$8216467.035 million, and TMX Group to \$ 215122.86 million.

The values of mean, compound growth rate of total trading value of ETFs traded in the American region from 2003-2012 along with their future predicted value of the next 5 years (2013-2017) are given in the Table 3 to find the three best stock exchanges of this region. *It is observed that NYSE Euronext (U.S.), NASDAQ OMX, and TMX Group are the best stock exchanges.* It is observed from the Table 3 that NYSE Euronext (U.S.) is the best stock exchange with highest mean value of US \$ 28, 24,388 and predicted value of \$ 8216467.035 million along with a CGR of 135.5 %. NASDAQ OMX is the second best stock exchange with mean value of US \$ 18, 66,098 and predicted value of \$ 7349261.87 million with CGR of 1886.47% followed by the TMX Group. It earned a mean value of US \$ 79,585, predicted value of \$ 215122.86 million, and CGR of 34.5%.

The Asia-Pacific Region

The descriptive statistics of the yearly data of the total number of trades and total trading value of ETFs of the 10 stock exchanges of the Asia-Pacific Region from 2003 to 2012 along with their future prediction values of 5 years, that is, from 2013 to 2017 are given in the Table 4 and Table 5.

↪ As is evident from the Table 4, the highest average is observed in Korea Exchange, that is, 8047.80 thousand, followed by Shanghai SE, Shenzhen SE, Hong Kong Exchanges, Taiwan SE Corp, and Bursa Malaysia ; 0.01 mean value is found in Australian SE, Osaka SE, Singapore Exchange, and the Tokyo SE Group.

↪ The highest variation of 299.90% is found in case of Bursa Malaysia, followed by Korea Exchange, Taiwan SE Corp., Shanghai SE, Shenzhen SE, and Hong Kong Exchanges. Australian SE, Osaka SE, Singapore Exchange, and the Tokyo SE Group have changed with least variation of 1.83E-14.

↪ The Table 4 shows that five out of the 10 exchanges of the Asia-Pacific region have significantly risen. These exchanges are Hong Kong Exchange, Korea Exchange, Shanghai SE, Shenzhen SE, and Taiwan SE Corporation. It is observed from the data that Australian SE, Bursa Malaysia, Osaka SE, Singapore Exchange, and the Tokyo SE

Table 4. Descriptive Statistics of the Asia-Pacific Region

Total Number of Trades in ETFs: Descriptive Statistics						
Stock Exchange	Mean (in thousand)	C.V (%)	CGR (%)	t - value	Predictions (in thousand)	% change
Australian SE	0.01	1.83E-14	0	0	0	-100
Bursa Malaysia	60.20	299.90	167.29	0.53	165.54	5418.23
Hong Kong Exchanges	1274.90	88.65	279.94	6.19*	4501.03	111.21
Korea Exchange	8047.80	149.80	376.97	4.01*	38975.54	28.42
Osaka SE	0.01	1.83E-14	0	0	0	-100
Shanghai SE	3983.00	91.59	298.57	2.52*	11601.77	166.15
Shenzhen SE	1778.00	90.721	422.24	4.16*	5963.97	94.51
Singapore Exchange	0.01	1.83E-14	0	0	0	-100
Taiwan SE Corp.	687.90	93.25	257.64	7.64*	2575.74	62.2
Tokyo SE Group	0.01	1.83E-14	0	0	0	-100

Table 5. Descriptive Statistics of the Asia-Pacific Region

Total Trading Value of ETFs: Descriptive Statistics						
Stock Exchange	Mean (US\$ million)	C.V (%)	CGR (%)	t - value	Predictions (US\$ million)	% change
Australian SE	3,228	79.58	30.07	5*	10380.59	79
Bursa Malaysia	44	97.53	155.11	2*	128.96	153
Hong Kong Exchange	37,180	87.57	61.8	7*	131763.12	96
Korea Exchange	32,932	133.68	54.63	4*	145713.97	21
Osaka SE	18,942	41.30	16.94	8*	41998.73	37
Shanghai SE	29,519	101.99	335.03	4*	104548.18	117
Shenzhen SE	12,599	109.26	601.24	5*	50871.40	83
Singapore Exchange	2,364	115.55	110.8	5*	9773.82	135
Taiwan SE Corp.	8,322	125.98	34.04	2*	27133.62	197
Tokyo SE Group	22,868	24.64	6.55	3*	35316.85	46

Group have grown insignificantly.

↪ The Table 4 reveals that the total number of trades in ETFs would rise in six out of the 10 stock exchanges of the Asia-Pacific region. Bursa Malaysia will increase to 165.54 thousand by 5418.23% changes, Hong Kong Exchange with 111.21%, Korea Exchange with 28.42%, Shanghai SE with 166.15 %, Shenzhen SE with 94.51 %, and Taiwan SE Corporation with 62.20%. The Australian SE, Osaka SE, Singapore Exchange, and the Tokyo SE Group would negatively decrease by 100% in the selected period of the study.

The Table 5 shows that the highest mean is observed in Hong Kong Exchange, that is, \$ 37,180 million, followed by Korea Exchange with \$ 32,932 million, then Shanghai SE, Tokyo SE Group, Osaka SE, Shenzhen SE, Taiwan SE Corporation, Australian SE, Singapore Exchange, and Bursa Malaysia during the study period.

↪ The highest variation of 133.68% has been found in Korea Exchange, 125.98% in Taiwan SE, 115.55% in Singapore Exchange, 109.26% in Shenzhen SE, 101.99% in Shanghai SE, 97.53% in Bursa Malaysia, 87.57% in Hong Kong Exchange, 79.58% in Australian SE, 41.30% in Osaka SE, and 24.64% in Tokyo SE Group.

Table 6. Descriptive Statistics of the Asia-Pacific Region

Best Stock Exchanges: Descriptive Statistics Stock			
Exchange	Mean (US\$ million)	CGR (%)	Predictions (US\$ million)
Hong Kong Exchange	37,180	61.8	131763.12
Korea Exchange	32,932	54.63	145713.97
Shanghai SE	29,519	335.03	104548.18

✧ The Australian SE has grown with CGR of 30.07%, followed by Bursa Malaysia, Hong Kong Exchange, Korea Exchange, Osaka SE, Shanghai SE, Shenzhen SE, Singapore Exchange, Taiwan SE Corporation, and Tokyo SE Group.

✧ The data analysis reveals that the total trading value of ETFs in all the stock exchanges of the Asia-Pacific region would increase in the period of 2013 - 2017. The Australian SE will rise to \$ 10380.59 million with a 79% increase, Bursa Malaysia will rise to \$ 128.96 million with a 153% increase, Hong Kong Exchange will rise to \$ 131763.12 million, Korea Exchange will rise to \$ 145713.97 million, Osaka SE will rise to \$ 41998.73 million, Shanghai SE will rise to \$ 104548.18 million, Shenzhen SE will rise to \$ 50871.40 million, Singapore Exchange will rise to \$ 9773.82 million, Taiwan SE Corp will rise to \$ 27133.62 million, and Tokyo SE Group will rise to \$ 35316.85 million.

The Table 6 reveals the values of mean, compound growth rate (from 2003-2012), and future predicted values (from 2013-2017) of total trading value of ETFs traded in the Asia-Pacific Region. The given values have been measured and are used to find out the three best stock exchanges of the Asia-Pacific Region. *Hong Kong Exchange attained the highest mean value of US \$ 37,180 and predicted value of \$ 131763.122 million with CGR of 61.8%. Korea Exchange grew at CGR of 54.63% and earned the mean value of US \$ 32,932 million and predicted value of \$ 145713.97 million. Shanghai SE followed the Korea Exchange and achieved the mean of US \$ 29,519 and 104548.187 million of predicted value with CGR of 335.03 %.*

The Europe- Africa - Middle East Region

The descriptive statistics of the yearly data of the total number of trades and total trading value of ETFs of the 16 stock exchanges of Europe-Africa-Middle East Region from 2003 to 2012 are given in the Table 7 and Table 8. The Tables also show the predictions for the years - 2013 to 2017.

✧ The Table 7 depicts that the highest average has been observed in case of London SE Group, that is, 1809.61 thousand, followed by Borsa Italiana, Deutsche Boerse, NYSE Euronext (Europe), Tel Aviv SE, NASDAQ OMX Nordic, SIX Swiss Exchange, Oslo Bars, Istanbul SE, Johannesburg SE, Warsaw SE, Irish SE, Athens Exchange, and BME Spanish Exchanges with zero (0) values during the study period.

✧ The coefficient of variation is found to be the highest in case of Warsaw SE, that is, 177.08188 %, followed by Tel Aviv SE, Budapest SE, London SE Group, Oslo Bars, Athens Exchange, SIX Swiss Exchange, Wiener Borse, Irish SE, NASDAQ OMX Nordic, NYSE Euronext - Europe, Deutsche Boerse, Borsa Italiana, Johannesburg SE, and Istanbul SE. The least variation is found in case of BME Spanish Exchanges, that is, 1.829E-14 %.

✧ Eleven out of 16 exchanges have significantly risen. The London SE Group significantly grew with CGR of 609.03%, followed by Oslo Bars, Borsa Italiana, NYSE Euronext, Deutsche Boerse, NASDAQ OMX Nordic, SIX Swiss Exchange, Istanbul SE, Johannesburg SE, Athens Exchange, and Warsaw SE. The Budapest SE has

Table 7. Descriptive Statistics of the Europe-Africa-Middle East Region

Total Number of Trades in ETFs: Descriptive Statistics						
Stock Exchange	Mean (in thousand)	C.V (%)	CGR (%)	t - value	Predictions (in thousand)	% change
Athens Exchange	1.21	109	128	3.879*	4.53	127
BME Spanish Exchanges	0	0	0	0	0	-100
Borsa Italiana	1623.4	85.03	273.29	8.33*	5724.9	103.73
Budapest SE	0.70	134	50.98	0.73	1.447	14370
Deutsche Boerse	1129.4	80.65	257.37	8.72*	3848.1	105.56
Istanbul SE	208.2	67.96	188.8	4.71*	588.8	88.11
Irish SE	1.20	94.07	20.05	0.18	1.432	14220
Johannesburg SE	51.9	75.55	165.2	9.01*	169.3	78.21
London SE Group	1809.61	123.13	609.03	5.43*	8010.39	90.68
NASDAQ OMX Nordic	441	93.7	254	3.86*	1489	149
NYSE Euronext (Europe)	1096	89.5	266	6.75*	3936	131
Oslo Bars	298	114	360	2.98*	1070	221
SIX Swiss Exchange	358.8	99.7	232.5	8.04*	1418	77.2
Tel Aviv SE	570.9	153.8	-41	-0.31	271.3	3.00E+06
Warsaw SE	1.9	177	127	3.36*	10	43
Wiener Borse	1.40	95.82	41.70	0.54	2.20	21910

Table 8. Descriptive Statistics of the Europe-Africa-Middle East Region

Total Trading Value of ETFs: Descriptive Statistics						
Stock Exchange	Mean (US\$ million)	C.V (%)	CGR (%)	t - value	Predictions (US\$ million)	% change
Athens Exchange	31	131.43	243.58	2*	94.93	533
BME Spanish Exchange	3,924	87.92	436.47	2*	10641.87	203
Borsa Italiana	53,764	74.93	52.53	7.6*	172235.8	116
Budapest SE	7	190.04	130.32	0	10.26	413
Deutsche Boerse	1,59,586	51.15	19.18	4.5*	377194.6	115
Istanbul SE	4,525	74.18	281.31	2.9*	12146.19	183
Irish S E	101	128.64	83.94	-0.3	58.09	730
Johannesburg SE	2,641	63.09	36.89	5.2*	7227.04	132
London SE Group	1,14,085	116.21	1226.9	6.4*	493963.2	89
NASDAQ OMX Nordic	15,666	71.95	68.02	4.6*	45622.11	130
NYSE Euronext Europe	92,655	69.11	30.47	3.9*	254835.9	174
Oslo Bars	7,410	112.88	419.61	3.4*	27635.91	217
Six Swiss Exchange	40,906	92.09	42.58	6.2*	148410.5	82
Tel Aviv SE	8,526	155.17	-83.13	0	4049.98	4,04,99,730
Warsaw SE	20	181.21	204.54	3.20*	103.19	50
Wiener Borse	230	145.71	99.01	0	100.05	1,568

Table 9. Descriptive Statistics of the Europe-Africa-Middle East Region

Best Stock Exchanges: Descriptive Statistics			
Stock Exchange	Mean (US\$ million)	CGR (%)	Predictions (US\$ million)
Deutsche Boerse	1,59,586	19.18	377194.6
NASDAQ OMX Nordic	15,666	68.02	45622.11
NYSE Euronext Europe	92,655	30.47	254835.9

insignificantly grown with CGR of 0.72% , followed by Irish SE, Wiener Boerse, and BME Spanish Exchanges. The Tel Aviv SE has grown negatively and also insignificantly with a CGR of 0.30%.

Future predictions have been made to check the future prosperity of the total number of trades in ETFs for the selected period. The data reveals that all the stock exchanges of the Asia-Pacific region would rise - with the exception of the BME Spanish Exchanges. The Athens Exchange will rise to 4.53 thousand with 126.5% increase, Borsa Italiana to 5724.85 thousand with 103.731% increase, and the other stock exchanges would also rise. However, the BME Spanish Exchanges will fall by 100% in the coming years.

The Table 8 shows that the highest mean score of \$ 1,59,586 million has been observed in case of Deutsche Boerse, followed by London SE Group with \$ 1,14,085 million, followed by NYSE Euronext Europe, Borsa Italiana , SIX Swiss Exchange, NASDAQ OMX Nordic, Tel Aviv SE, Oslo Bars, Istanbul SE, BME Spanish Exchanges, Johannesburg SE, Irish S E, Athens Exchange, Warsaw SE, Wiener Boerse, and Budapest SE.

↪ The highest variation is found in case of Budapest SE, followed by Warsaw SE, Tel Aviv SE, Wiener Boerse, Athens Exchange, Irish S E, London SE Group, Oslo Bars, SIX Swiss Exchange, BME Spanish Exchanges, Borsa Italiana, Istanbul SE, NASDAQ OMX Nordic, NYSE Euronext Europe, and Johannesburg SE.

↪ Out of 16 stock exchanges, 11 exchanges have developed significantly over the entire survey period. The London SE Group grew with CGR of 1226.90%, followed by BME Spanish Exchanges, Oslo Bars, Istanbul, Athens, Warsaw SE, NASDAQ OMX Nordic, Borsa Italiana, SIX Swiss Exchange, Johannesburg SE, NYSE Euronext Europe, and Deutsche Boerse. Budapest SE, Irish SE, Tel Aviv SE, Wiener Boerse, and Athens Exchange have grown insignificantly. Tel Aviv SE grew with negative (-) CGR of 83.13%.

↪ The data depicts that the London SE Group with \$ 493963.22 million, Deutsche Boerse with \$ 377194.57 million, NYSE Euronext with \$ 254835.87 million, Borsa Italiana with \$ 172235.81 million, SIX Swiss Exchange with \$ 148410.47 million, Oslo Bars with \$ 27635.91 million, Istanbul SE with \$ 12146.19 million, Johannesburg SE with \$ 7227.04 million, Tel Aviv SE with \$ 4049.98 million, BME Spanish Exchanges with \$ 10641.87 million, Warsaw SE with \$ 103.1 million, Wiener Boerse with \$ 100.5 million, Athens Exchange with \$ 94.93 million, Irish SE with \$ 58.09 million, and Budapest SE with \$ 10.26 million would increase in the coming period.

The values of mean, compound growth rate of total trading value of ETFs traded in the Europe-Africa-Middle East Region from 2003-2012 along with their future predicted value for the next 5 years (2013-2017) are given in the Table 9.

As it is evident from the Table 9, *Deutsche Boerse is the best stock exchange with the highest mean value of US \$ 1, 59, 58 million and predicted value of \$ 377194.6 million along with a CGR of 19.18 % . NASDAQ OMX Nordic is the second best stock exchange with mean value of \$ 15,666 million and predicted value of \$ 45622.11 million with a CGR of 68.02% . NYSE Euronext Europe scored the mean value of \$ 92,655 million with CGR of 30.47% and predicted value of \$ 254835.9 million.*

Findings and Suggestions

(1) It is found that the total number of trades in BM & FBOVESPA, NASDAQ OMX, NYSE Euronext, and TMX Group stock exchanges of the American region grew significantly during the study period. These exchanges will also grow in the future. They will provide safe and high returns to their investors. If the investors want to invest in these exchanges, they can make a hassle-free decision. However, for the Mexican Exchange, they are advised to inspect the status and position according to the prevalent market situations before investing in it due to its insignificant growth and decreasing trends for the future.

(2) It is found that the total trading value of ETFs has significantly grown in all the stock exchanges in the American region. The total trading value will rise in these exchanges for the selected period, that is, from 2013 to 2017. It is suggested that the investors can invest in these stock exchanges because these exchanges are capable or will be able to provide high and secure returns.

(3) The results reveal that the total number of ETFs have grown significantly in all the exchanges of the Asia-Pacific region, with the exceptions being Australian SE, Bursa Malaysia, Osaka SE, Singapore Exchange, and Tokyo SE Group. The number would also increase in all the stock exchanges of Asia-Pacific except a few, that is, the Australian SE, Osaka SE, Singapore Exchange, and Tokyo SE Group. It will be dubious for the investors if they wish to invest in these exchanges. However, the other remaining exchanges will show fruitful results and give excellent returns to their investors.

(4) It is found that the total trading value has turned significantly in all exchanges of the Asia-Pacific region. The results revealed that total trading value would increase in all the selected exchanges of this region. The exchanges in the Asia-Pacific region will provide safe and high returns to their investors.

(5) It is found that the total number of trades in all the exchanges of Europe-Africa-Middle East region have grown significantly except for the Irish SE, Tel Aviv SE, BME Spanish Exchanges, Budapest SE, and Wiener Boerse over the period of the study. However, out of these, only BME Spanish Exchanges will decline in the selected period. The other exchanges of this region will grow without any barriers and hurdles, except in the case of unforeseen occurrences. It is observed that these exchanges are competent to provide productive results.

(6) It is observed that the NYSE Euronext (U.S.), NASDAQ OMX, and TMX Group are the best stock exchanges of the American region. Out of these, the best one is NYSE Euronext, followed by NASDAQ OMX, and TMX Group. NYSE Euronext has grown with the highest mean score of \$ 28, 24,388 with CGR of 135.50%, and it will increase to the highest value of \$ 8216467.035. NASDAQ OMX grew at the second highest mean score, that is, \$ 1866098 with a CGR of 1886.47%. It will spring up to the value of \$ 7349261.87 million in the coming period, that is, 2013 to 2017. The TMX Group has been maturing with a mean score of \$ 79585 with CGR of 34.50%, and will rise to \$ 215122.86 million in time period, that is, 2013 to 2017.

(7) It is found that the best stock exchanges in the Asia-Pacific region are Korea Exchange, Hong Kong Exchange, and Shanghai Stock Exchange. The best ones are Korea Exchange and Hong Kong Exchange followed by Shanghai SE. The analysis revealed that the Shanghai SE is growing at the mean score of \$ 29,519 with a CGR of 335.03%, and it will also increase to \$ 104548.187 million. The Korea Exchange got the second highest mean score of \$ 32932 with a CGR of 54.63%, and it will attain a value of \$ 145713.973 million in the period from 2013-2017. The next best exchange is the Hong Kong Exchange. It achieved the mean value of \$ 37180 and it will mature at the second highest return, that is, \$ 131763.122 during the period from 2013-2017.

(8) The analysis revealed that the London SE Group, Deutsche Boerse, and NYSE Euronext Europe are the best stock exchanges of the Europe-Africa- Middle East region. Out of these, the best one is the London SE Group, followed by Deutsche Boerse, and the NYSE Euronext Europe. London SE Group grew at the highest CGR of 1226.90%, its mean value was second highest, that is, \$ 1,14,083 and it will grow to attain the highest value of \$ 493963.225 million during the study period. Deutsche Boerse is found to be growing with the highest mean score, that is, \$ 1,59,586 and it will rise to attain the second highest value, that is, \$ 377194.575 million. NYSE Euronext Europe has been found to have a mean score of \$ 92,655 and will rise to attain a value of \$ 377194.575 million in the upcoming period.

Conclusion

ETFs are portfolio investment products that are listed or traded on the stock exchanges in recent years. An ETF bestows investors with exposure to a diversified basket of shares or other financial instruments. It aims at reiterating the performance of a specific index and the index can be a blue chip, a regional, or a sector index. The type of index is not simply confined to shares; it may include a bond index and other cases of a sophisticated index. ETFs are really useful for getting inexpensive exposure to markets that might not otherwise be in the portfolio of investors. One area where many investors look to ETFs is international stocks. Some international ETFs are very broad, focusing on stocks in well-established countries across Western Europe, plus Japan and Australia. Others concentrate on a range of up-and-coming countries in Asia and Latin America. Yet others concentrate on a single nation or a subset of broader international markets, such as the lines of smaller companies.

As revealed by the study, the numbers of ETFs listed have increased on various stock exchanges of the American region, Asia-Pacific region, and the Europe-Africa-Middle East region at a tremendous pace except in a few instances. However, the study has shown negative trends and growth in the total trading value and number of ETFs traded in a few cases only. ETFs have been in existence for quite some time. However, so far, ETFs have not had the sort of popularity that conventional mutual funds and other stocks enjoy. One cause could be the lack of discernment of the concept of ETF amongst the general investors. Second, and probably the more important reason, is that ETFs by nature track a certain index. Hence, the returns one can expect from ETFs will be equal to the rise in an index. Therefore, it is not easy for an active fund manager to beat the index and offer better returns. Regulators of different countries need to tread carefully and safely to manage the different risks associated with ETFs and yet not impose unnecessary conditions and regulations. Research scholars and other financial institutions can also play a vital role by conducting and doing genuine research on ETFs.

Limitations of the Study and Scope for Further Research

The study was conducted for a limited time period from 2003-2012. It considered only those stock exchanges whose data was provided in the Handbooks of SEBI. A total of 32 stock exchanges were chosen from three regions only. The entire data were taken from the secondary sources; it may contain some limitations that were inherent in the collection sources. Future studies can conduct an analysis using primary data to attain the same objectives. Moreover, studies can be conducted in the same area using extensive data or a detailed study can be done for one region only ; in addition, researchers can conduct comparative studies to compare the regions. The results were drawn on the basis of descriptive statistics, that is, mean, C.V, CGR, *t* - value, predictions, and percentage change only. More advanced statistical techniques may be used to conduct the same study. The present study identified the best stock exchanges from three regions according to the selected parameters, that is, total number of ETFs traded and total trading value. The parameters can be increased by future researchers to obtain the results. Researchers can also choose different parameters to judge the best stock exchanges.

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