Why the Global Equity Allocation in Frontier Markets is Low ? Evidence from Vietnam

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Abstract

Frontier countries accounted for 21.6% of the world's population, 6% of its nominal GDP, and only 3.1% of the world market capitalization. Thus, it is imperative that a global investor following indexing style of fund allocation should allocate 3.1% of its wealth in the frontier markets. However, a typical frontier market is characterized as highly volatile and illiquid. In addition to the volatility and illiquidity of the equity markets, impulsiveness of their currencies inflict heightened risk for the international investors. Thus, a case to case analysis of frontier markets makes sense for an active portfolio investor. The present paper explored the opportunities and challenges of equity allocation in frontier markets in general and Vietnam, in particular, evaluating their macroeconomic factors and investigating into the micro structure of their financial markets. The results suggested that there was a higher correlation of frontier markets and Vietnam market returns with the world market returns, coupled with low indigenous mean returns, high standard deviations, and coefficients of variance. This explained why there is lower allocation of global capital to the frontier markets in general and Vietnam in particular.

Keywords : **emerging markets, frontier markets, international diversification, liquidity, volatility**

JEL Classification : E2, F3, F6, G1

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International portfolio investment has long been a tradition in many European countries and North America. There is now a strong trend towards international diversification in all countries, especially among institutional investors, such as corporate and public pension funds. In 1974, the New York Stock Exchange was the only significant market in the world, representing 60% of the world market capitalization of less than $1 trillion. The size of the world market multiplied by a factor of 60 in the next 41 years, and in 2015, the world market capitalization stood at $60 trillion. However, the share of U.S. equity moved from 60% to less than 30% in 1988 and back to 36 % in 2015. Modern portfolio theory and literature in the area of financial economics and asset pricing has shown the benefits of global investing with its potential for higher returns and lower risks based on diversification across a larger opportunity set. In the 1970s, the pioneers of global investing like John Templeton were rewarded by the success of the Japanese stock market. By the mid-1980s, the investment world had expanded to cover all the developed markets of North America, Europe, and Japan. Beginning more than 30 years ago, the International Finance Corporation (IFC) started to encourage investments in stock markets in the developing world by sponsoring the establishment of country funds to invest in such stock markets as those in Malaysia, Thailand, South Korea, and Brazil. In addition, at the end of 1986, Capital International Perspective introduced its emerging market index, which served to further increase the visibility of stock markets in less developed countries. Emerging market index by Capital group was renamed to MSCI Emerging Market Index after Capital International Perspective was sold to Morgan Stanley.

The term "emerging market" was coined by Antoine Van Agtmael in the 1980s. The term provided a positive

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connotation for developing markets compared with their old labels of the "third world" or "less developed countries". Today, after 30 years of growth, many of the emerging countries have, in fact, successfully emerged. Within the emerging market universe, there have been several great success stories, such as South Korea, Taiwan, China, and Brazil. Today, the most prominent emerging countries are called the BRICS (Brazil, Russia, India, China, and South Africa). These markets are considered to be safer and more liquid by global investors than the other emerging markets. There exist many other countries having well organized stock markets. However, they are not part of the existing MSCI Emerging Markets Index. These markets are known as frontier markets, and present good opportunities for future growth. MSCI considers 24 countries to be "developed" having per capita GDP (using purchasing power parity) ranging from $23,074 for Portugal to $78,559 for Luxemburg. Another 22 countries are considered as emerging markets by MSCI having PPP per capita GDP ranging from $2,972 in India to $27,939 in South Korea. Among countries whose stock markets are excluded from the MSCI All Country World Index (ACWI), PPP GDP per capita ranges from $837 in Malawi to $27,065 in Slovenia. Many institutional investors have diversified across the current universe of developed and emerging markets in the MSCI All Country World Index. On the basis of this framework, frontier markets can best be defined as all those countries with stock markets that are not presently included in that index (Speidell & Krohne, 2007).

Frontier market countries accounted for 21.6% of the world's population, 6% of its nominal GDP, and only 3.1% of world market capitalization. MSCI ACWI, which covers approximately 85% of the global investable equity opportunity set, had a market capitalization of US $ 35.53 trillion as on March 31, 2016. Therefore, 3.1% of MSCI ACWI market capitalization, which amounts to US $ 1065.94 billion, should be invested in the frontier markets to complete the globally diversified indexed equity portfolio. Investors targeting the blended portfolio allocation in emerging/frontier market segment should allocate 11% of the combined total of developing country markets on a capitalization-weighted basis. Thus, frontier markets provide immense investment opportunities for the global institutional investors. The present paper explores the equity investment opportunities in the frontier markets in general and Vietnam, in particular, based upon the risk, return, and diversification ratio characteristics.

Review of Literature

There is plenty of literature available on equity investment and portfolio allocation in mainstream emerging markets. However, similar studies are scanty on frontier markets. Benartzi and Thaler (2001) investigated a diversification pattern by individual investors. They found that the proportion invested in stocks depended strongly on the proportion of stock funds in the plan. DeMiguel, Garlappi, and Uppal (2009) evaluated the out-of-sample performance of the sample-based mean-variance model, and its extensions designed to reduce estimation error, relative to the naive 1/N portfolio. Analytical results and simulations showed that there are still many "miles to go" before the gains promised by optimal portfolio choice can actually be realized out of sample.

Bekaert and Harvey (2000) proposed a cross-sectional time-series model to assess the impact of market liberalizations in emerging equity markets on the cost of capital, volatility, beta, and correlation with world market returns. Speidell (2011) examined the opportunities that existed for investing in frontier countries. He reviewed the stock markets, the listed companies, the potential returns, and the diversification benefits. He also considered economic and political fundamentals.

Kaur (2015) ascertained and analyzed the growth and trends of ETFs traded globally. Her study revealed that the number of ETFs listed had increased on various stock exchanges of the American region, Asia-Pacific region, and Europe-Africa-Middle East region at a tremendous pace except in few instances. Sharma, Mahendru, and Singh (2013) tested for inter-linkages of stock exchanges for emerging economies using equity return data from BRICS nations.

Quisenberry and Griffith (2010) imparted useful description of the universe of frontier emerging markets and some of the factors that distinguished their markets from the mainstream emerging markets. Relative to the

emerging markets, frontier markets companies demonstrated greater fundamental quality by measures of profitability, capital efficiency, indebtedness, and balance sheet strength. Their study demonstrated that fundamental quality of frontier market companies had decreased relative to the universe of emerging market companies for the period from 2001- 2014, but the frontier market companies nonetheless still demonstrated greater fundamental quality by the end of 2015. In the high volatility period post the 2007 global financial crises, higher quality companies outperformed in both emerging and frontier markets, suggesting that companies with high quality fundamentals may provide relative protection during the periods of greater volatility.

Speidell (2009) disseminated the behavioral aspects of investment in frontier market equity. The findings suggested that behavioral biases and opportunities were abundant in frontier markets. Foreign investors are prone to view frontier markets through the prism of personal prejudice and media hysteria, making it difficult to invest in these markets. However, investors who avoid the crowd, evaluate the asymmetry of knowledge, and deal with decision making under uncertainty have opportunities in frontier markets. Speidell (2011) delineated the frontier markets' indices (Morgan Stanley Capital International MSCI Frontier Market Index and relative country specific indices). He further explained frontier markets in terms of their economic fundamentals, politics and policies, stock market results, impact of commodity market volatility on frontier market returns, portfolio investment implementation risk, and illiquidity issues. Berger, Pukthuanthong, and Yang (2011) provided an analysis of frontier market equities with respect to world market integration and diversification. Principal component results revealed that frontier markets exhibited low levels of integration. In contrast with the developed and emerging markets, frontier markets offered no indication of increasing integration through time. Furthermore, individual frontier market countries did not exhibit consistent rates of changing integration.

Berger, Pukthuanthong, and Yang (2013) presented direct evidence of economic benefits and realizable diversification gains by focusing on a set of investable frontier exchange traded funds (ETFs). They further compared results of their analysis of investable funds with results across the corresponding indices. The results of their study showed that investors can realize the international diversification benefit of frontier markets, despite existence of lower liquidity and higher transaction costs in these markets. Even when combined with an already globally diversified portfolio, frontier markets provided benefits as risk reducing assets.

The present paper explores the equity asset allocation in frontier markets in general and Vietnam, in particular, using multiple economic, financial, and statistical parameters. These parameters are explained in the next section.

Research Methodology

I attempted to evaluate equity investment opportunities in the frontier markets in general and Vietnam in particular from a global investor's perspective. Multiple economic, financial, and statistical parameters were calculated, and compared for Vietnam, frontier markets, emerging markets, and unabridged world market. Primarily, four indices of Morgan Stanley Capital International (MSCI) were used namely, MSCI ACWI + Frontier Market, MSCI Emerging Markets, MSCI Frontier Markets, and MSCI Vietnam Index to represent unabridged world market, emerging markets, frontier markets, and Vietnam, respectively.

Returns for all the four indices were calculated in U.S. $ terms, which had two components: (a) the rate of return to a global investor in local currency terms (say Vietnamese dong), and (b) the percentage change in the spot FX price of local currency (Vietnamese dong) to U.S. dollar. Let $R_i^{\$}$ denote the rate of return on index i from the viewpoint of U.S. dollars. If the asset is denoted in dong, with a local return in dong of R_i^{Dong}, and if $x^{\$/\text{Dong}}$ represents the percentage change in the spot FX price of the Vietnamese dong relative to the U.S. dollar, then we have the following identity for the asset's returns:

$$R_i^{\$} = (1 + R_i^{Dong})(1 + x^{\$/Dong}) - 1 \qquad (1)$$

For all the four indices, descriptive statistics tables were generated on the basis of the annual U.S. dollar returns, which included mean and median returns, standard deviations, coefficient of variance, skewness, and kurtosis. The Sharpe ratio was also calculated to measure risk adjusted returns for the indices using 1 month LIBOR as risk free rate. It was calculated as excess returns on the underlying index over the risk free rate, divided by the standard deviation of the return. If *Ri* denotes the mean return to indices, *Rf* is the mean return to the risk free asset, and σ*i* is the standard deviation of return on the portfolio, then Sharpe ratio can be defined as:

$$\text{Sharpe Ratio} = \frac{R_i - R_f}{\sigma_i}$$

Select economic parameters were also calculated to evaluate the preparedness and efficiency of the economy to host the global investments. Market capitalization to GDP ratio, also known as Buffet indicator is a long-term valuation indicator of a market ; when compared over the years, it shows whether the market is overvalued or undervalued. A cross country comparison of this ratio reveals the level of development of the stock market for that specific country.

To gauge the operational efficiency of the financial market two ratios namely, value of share traded as percentage of GDP, and value of shares traded as percentage of market capitalization are computed. Value of shares traded as percentage of GDP indicates the liquidity of the market in terms of its total GDP, while value of shares traded as percentage of market capitalization indicates internal liquidity/turnover of the market. Higher market liquidity and turnover ratios represent a lower transaction cost for the investor.

Correlation matrix of market cap as percentage of GDP, market liquidity, turnover ratio, GDP per capita (PPP US$) for the frontier markets for years 2010 and 2014 were calculated. GDP per capita in terms of purchasing power parity is an indicator of income level of the country.

Analysis and Results

(1) Evaluation of Investment Opportunities and Challenges in Frontier Markets : Beginning in 1996, the term "frontier market was used by the International Finance Corporation to describe smaller stock markets that the IFC tracked with its "frontier composite" of 21 countries (Speidell, 2009). In December 2007, Morgan Stanley Capital International introduced the MSCI Frontier Markets Index, which initially covered 19 countries and now it captures large and mid- cap representation across 23 frontier markets (FM) countries. The index includes 121 constituents, covering about 85% of the free float-adjusted market capitalization in each country. For many years, frontier markets have shown little ability to develop savings for investment in future growth. Only foreign investments made in frontier markets were by the colonial powers. However, today, frontier markets present investment opportunities which are parallel in many ways to the opportunities that existed 20 years ago in emerging markets. Each individual frontier economy is endowed differently, and therefore, the primary drivers of growth in GDP differ from country to country. Many countries are rich in natural resources and labor. Predominantly, industries in many frontier economies remain heavily controlled by the government or are family owned. The consequence of this situation has often been a dwindling performance of the private sector, which in turn results in underdeveloped and inefficient capital markets. A robust economy needs a robust private sector, which in many frontier markets is in its early stages. However, evidences from developed and emerging markets suggest that there exist an exponential relationship between market capitalization as percentage of GDP and PPP GDP per capita. Thus, with a rise in economic prosperity, the stock markets of these small and neglected frontier economies can grow at an even greater pace than their economies. Thus, equity investments in these frontier markets hold a lot of potential for their economic prosperity.

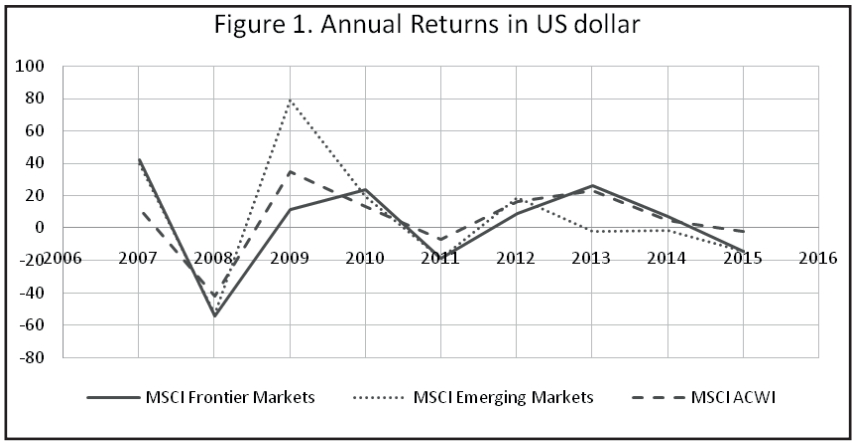


Table 1. Descriptive Statistics for Annual Percentage Returns in U.S. Dollars from 2007 to 2015

	MSCI Frontier Markets	MSCI Emerging Markets	MSCI ACWI+ Frontier Markets
Mean	3.504444444	7.325555556	5.565555556
Standard Error	9.599490165	12.62072283	7.316785897
Median	8.85	-1.82	11.81
Mode	#N/A	#N/A	#N/A
Standard Deviation	28.79847049	37.86216849	21.95035769
Sample Variance	829.3519028	1433.543803	481.8182028
Kurtosis	0.882305451	0.862683752	2.421857776
Skewness	-0.88428965	0.456808326	-1.22799462
Coefficient of Variation	8.22	5.17	3.94
Range	96.09	132.2	76.74
Minimum	-54.15	-53.18	-42.24
Maximum	41.94	79.02	34.5

The Figure 1 provides annual returns in U.S. dollar terms for MSCI World Index, MSCI Emerging Markets Index, and MSCI Frontier Markets Index from the years 2007 to 2015. The Figure 1 confirms that MSCI Emerging Markets Index is the most volatile, followed by MSCI Frontier Markets, and MSCI World Index. The Table 1 provides the descriptive statistics for risk and return data for MSCI Frontier Markets Index, MSCI Emerging Markets Index, and MSCI ACWI + Frontier Markets. The MSCI Frontier Markets Index captures large and mid-cap representation across 23 frontier markets countries. The index includes 121 constituents, covering about 85% of the free float-adjusted market capitalization in each country.

It is evident from the Table 1 that MSCI ACWI + Frontier Markets Index yielded the highest median value for U.S. dollar returns for the period of past 9 years, while highest mean returns were generated by the emerging markets. Since the MSCI ACWI + Frontier Markets Index has the lowest value of standard deviation, it can be considered as the least risky investment opportunity. Coefficient of variation (CV), which measures the amount of risk per unit of mean returns is also shown in the Table 1. Coefficient of variation has got the lowest value of 3.94 for MSCI ACWI + Frontier Markets Index, then a higher value of 5.17 for emerging markets, and highest for the frontier markets at 8.22. As measured both by standard deviation and CV, MSCI ACWI + Frontier Markets Index was the least risky. As far as emerging markets are concerned, despite the highest standard deviation of 37.86%, the emerging markets are found to be less riskier than the frontier markets in terms of CV. However,

Table 2. Fundamentals for MSCI Frontier Markets Index and MSCI ACWI + Frontier Markets as on March 2016

Fundamentals (March 31, 2016)

	Div. Yld. (%)	P/E	P/BV	Sharpe Ratio
MSCI Frontier Markets	4.37	10.11	1.40	0.18
MSCI ACWI + Frontier Markets	2.68	18.48	1.99	0.49

median returns on emerging markets are negative. Frontier markets have generated lowest mean returns, and have the highest value of CVs, but they have yielded pretty healthy median returns. Median returns are more expressive as unlike mean returns, they are not influenced by extreme high or low values.

As shown in the Table 2, dividend yields are higher for MSCI Frontier Markets Index (4.37%) than the MSCI ACWI + Frontier Markets Index (2.68%), showing that a substantial part of expected returns result from the dividends. Frontier markets also have lower price to earnings ratio and price to book value ratio, showing potential for value investment in these markets. Apart from low U.S. dollar returns, high standard deviations, and lower Sharpe ratios, there exist many implementation challenges while making equity investments in frontier markets, like counterparty risk, foreign exchange risk, and illiquidity risk. MSCI Frontier Markets Index includes a very diverse array of countries ranging from a high per capita GDP economy of Bahrain, to a very low per capita economy of Bangladesh. Each of these markets show distinct risk - return characteristics, different levels of operational efficiency & market liquidity, and distinctive foreign exchange movements. Thus, it make sense for a global investor to investigate the investment opportunities in frontier markets considering discrete markets in seclusion. The present paper explores the case of Vietnam as an equity investment opportunity to the global portfolio investors.

(2) Evaluation of Investment Opportunities and Challenges in Vietnam : Vietnam has been transformed from an inward looking country to one that is globalized, market-based, with a stable socio-political situation and is now among the world's fastest growing economies. Not an emerging market yet under the MSCI benchmark classification, but Vietnam is currently the ninth-largest country weight in the iShares MSCI Frontier 100 ETF (FM) at 3.24%. Vietnam has a market capitalization of 1,086 tn dong (US $44.5bn) and its GDP stands at US $171.4 bn, which equals 26% of GDP, making it a clear investment destination. Market capitalization to GDP ratio, also known as Buffet indicator, is a long-term valuation indicator of a market. The Table 3 shows the percentage change in market capitalization as percentage of GDP, for frontier markets, the world, and India from 2010 to 2014. It also shows the market liquidity indicator using value of share traded as percentage of GDP, and market turnover ratio using value of shares traded as percentage of market capitalization. Market capitalization, as a percentage of GDP, when compared over the years, shows whether that market is overvalued or undervalued. A cross country comparison of this ratio reveals the level of development of the stock market for that specific country. Value of shares traded as a percentage of GDP indicates the liquidity of the market in terms of its total GDP, while value of shares traded as a percentage of market capitalization indicates internal liquidity/turnover of the market. Higher market liquidity and turnover ratios represent a lower transaction cost for the investor.

Market capitalization as a percentage of GDP is directly proportional to the income level of the country. This ratio is highest for the high income countries, and lowest for lower middle income countries. Mean value of market capitalization as a percentage of GDP for frontier markets is substantially lower than the mean values for world, India, and even lower middle income countries. As far as Vietnam is concerned, the values of 26% in the year 2010 and 24.2% in the year 2014 are lower than the mean value for frontier markets. For Vietnam, market capitalization as a percentage of GDP is lower than that of countries like Jordan, Mauritius, Morocco, Oman, and Bangladesh, and it is higher than that of countries like Romania, Serbia, Slovenia, Bulgaria, and Pakistan. This

Table 3. Stock Market Capitalization as Percentage of GDP, Market Liquidity, and Turnover Ratios for Frontier Markets and Select Other Markets

Market/Country	Market Cap			Market liquidity			Turnover ratio		
	% of GDP			Value of shares traded % of GDP			Value of shares traded % of market capitalization		
	2010	2014	% Change	2010	2014	% Change	2010	2015	% Change
Argentina	13.8	11.2	-18.84	0.6	0.7	16.67	4	4.8	20.00
Bahrain	78	65.2	-16.41	1.1	2.1	90.91	1.4	1.5	7.14
Bangladesh	36.1	N.A	N.A	4.2	0	-100.00	11.6	N.A	N.A
Bulgaria	14.8	N.A	N.A	0.8	1.6	100.00	5.1	N.A	N.A
Croatia	42.9	N.A	N.A	1.8	1	-44.44	4.1	N.A	N.A
Jordan	116.8	71.3	-38.96	32.5	8.6	-73.54	27.9	14	-49.82
Kazakhstan	18	10.5	-41.67	0.4	0.4	0.00	2	7.6	280.00
Kenya	36.2	N.A	N.A	2	3.3	65.00	5.5	N.A	N.A
Lebanon	33.4	N.A	N.A	4.9	1.4	-71.43	14.8	N.A	N.A
Mauritius	79.8	69.3	-13.16	3.8	3.7	-2.63	4.7	6.4	36.17
Morocco	74.2	47.9	-35.44	6.5	2.8	-56.92	8.8	6.4	-27.27
Nigeria	13.7	11.2	-18.25	1.4	0.9	-35.71	10.1	8.2	-18.81
Oman	48.3	46.2	-4.35	5.6	7.1	26.79	11.7	8.7	-25.64
Pakistan	21.4	N.A	N.A	6.6	0.2	-96.97	30.7	N.A	N.A
Romania	8.5	N.A	N.A	1	0.8	-20.00	11.8	N.A	N.A
Serbia	10.5	N.A	N.A	0.8	0.6	-25.00	7.6	N.A	N.A
Slovenia	19.6	15.2	-22.45	1	1.5	50.00	5.1	6	17.65
Sri Lanka	35.1	30	-14.53	8.8	3.3	-62.50	25.1	8.6	-65.74
Tunisia	24.2	N.A	N.A	4.2	1.8	-57.14	17.2	N.A	N.A
Vietnam	26	24.7	-5.00	16.5	11.7	-29.09	63.6	36	-43.40
Mean of Frontier Markets	37.57	36.61	-20.82	5.23	2.68	-16.30	13.64	9.84	11.84
World	86.8	91.7	5.65	112.7	102.3	-9.23	130.8	162.9	24.54
India	95.5	76.1	-20.31	63.3	35.7	-43.60	66.2	50.9	-23.11
Low income	N.A	N.A	N.A	N.A	N.A	N.A	0.7	N.A	N.A
Lower middle income	62.2	55.7	-10.45	31.1	18.3	-41.16	53.3	39.1	-26.64
Upper middle income	67.5	56.7	-16.00	82.6	78.7	-4.72	124	344.8	178.06
High income	94.9	108	13.80	128.6	119	-7.47	136.6	128.4	-6.00

Source: Table reconstructed by author using World Bank Data on World Development Indicators

ratio declined from the year 2010 to the year 2014 for almost all the countries covered under the frontier markets, lower middle income countries, as well as upper middle income countries. However, the same has increased for the world average and high income countries. Decline in market capitalization as a percentage of GDP indicates a drop in the valuation for the market. Thus, it can be inferred from the Table 4 that from the year 2010 to 2014, high income countries and the unabridged world market become overvalued, while frontier markets including Vietnam become undervalued.

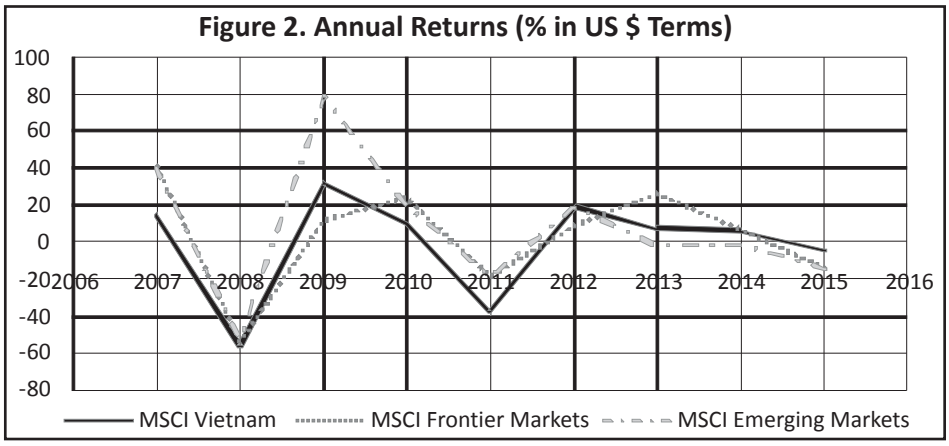
As shown in the Table 3, both market liquidity and turnover ratios for Vietnam are highest amongst all the frontier market countries, which is a good indication for foreign investors, as high liquidity and turnover are signs

Table 4. Correlation Matrix for Market Capitalization as Percentage of GDP, Market Liquidity, Turnover Ratio, and GDP per Capita (PPP) for Frontier Markets for the Years 2010 and 2014

Year 2010	Market Cap as % of GDP	Market Liquidity	Turnover Ratio	GDP Per Capita (PPP US$)
Market Cap as % of GDP	1.00	0.61	-0.01	0.18
Market Liquidity	0.61	1.00	0.65	-0.21
Turnover Ratio	-0.01	0.65	1.00	-0.38
GDP Per Capita (PPP US$)	0.18	-0.21	-0.38	1.00

Year 2014	Market Cap as % of GDP	Market Liquidity	Turnover Ratio	GDP Per Capita (PPP US$)
Market Cap as % of GDP	1.00	0.31	-0.19	0.23
Market Liquidity	0.31	1.00	0.82	-0.02
Turnover Ratio	-0.19	0.82	1.00	-0.50
GDP Per Capita (PPP US$)	0.23	-0.02	-0.50	1.00

Source: Compiled using World Bank data.



of operational efficiency of the market and lower transaction costs. Between 2010 and 2014, market liquidity deteriorated for both frontier markets as well as Vietnam, while for the same period, turnover ratio improved for frontier markets. Nonetheless, it deteriorated substantially for Vietnam.

The Table 4 presents the correlation matrix of market cap as % of GDP, market liquidity, turnover ratio, GDP per capita (PPP US$) for the frontier markets for the years 2010 and 2014. GDP per capita in terms of purchasing power parity is an indicator of income level of the country. There is a significant positive correlation between market capitalization as a percentage of GDP and market liquidity. GDP per capita (PPP US$) shows a negative correlation with both market liquidity and turnover ratio. It is also evident from the Table 4 that there exists a positive correlation between GDP per capita (in US $) on purchasing power parity term and market capitalization as a percentage of GDP. The value of correlation coefficient, however, is small but positive for both the years under study, and has improved from 2010 to 2014. Vietnam has one of the lowest income levels (GDP per capita in U.S. dollar terms on PPP basis) amongst the frontier markets (higher than just the three countries namely Kenya, Bangladesh, and Pakistan). However, it shows one of the highest growth in its income levels from the year 2010 to 2014 (third only to Sri Lanka and Bangladesh).

Positive correlation of income level with market capitalization as percentage to GDP and high growth in income level for Vietnam should be interpreted as a good equity investment opportunity for the global investors,

because a high growth in GDP per capita (US$ PPP) should result into even higher market capitalization in the long run. Good liquidity and higher turnover ratio amongst the frontier markets further strengthens the case of Vietnam as a potential equity investment destination.

The Figure 2 depicts annual U.S. dollar returns for MSCI Emerging Markets Index, MSCI Frontier Markets Index, and MSCI Vietnam Index. It is evident from the Figure 2 that in the year of global financial crisis 2008, the Vietnam index recorded the most negative returns. However, since 2011, it closely followed the frontier market index and consistently outperformed the emerging market index. The Table 5 shows the descriptive statistics for annual returns in U.S. dollar terms for MSCI Vietnam Index, MSCI Frontier Markets Index, and MSCI Emerging Markets Index. The MSCI Vietnam Index is designed to measure the performance of the large and mid-cap segments of the Vietnamese market. With nine constituents, the index covers approximately 85% of the Vietnam equity universe. The Table 7 provides information of index weight and sector specification of the top nine constituents of MSCI Vietnam Index.

The median annual returns for MSCI Vietnam Index is 7.19%, which is marginally lower than the median returns of 8.85% for MSCI Frontier Markets Index, but substantially higher than the median returns of -1.82 % for MSCI Emerging Markets Index. MSCI Vietnam Index and MSCI Frontier Markets Index demonstrate similar volatilities measured using standard deviations, which stand at 28.46% and 28.79% for Vietnam and frontier markets, respectively. Standard deviation is highest for emerging markets at 37.86%. Coefficient of variation has the negative value of -20.77 for MSCI Vietnam Index, a higher value of 5.17 for emerging markets, and highest for the frontier markets at 8.22. Skewness is negative for both Vietnam as well as frontier markets, while it is positive for the emerging markets. A return distribution with negative skew has frequent small gains and few

Table 5. Descriptive Statistics for Annual Returns in U.S. Dollars from 2007 to 2015

	MSCI Vietnam Index	MSCI Frontier Markets	MSCI Emerging Markets
Mean	-1.378	3.504	7.325
Standard Error	9.489	9.599	12.620
Median	7.19	8.85	-1.82
Mode	#N/A	#N/A	#N/A
Standard Deviation	28.469	28.798	37.862
Sample Variance	810.519	829.351	1433.543
Kurtosis	0.687	0.882	0.862
Skewness	-1.192	-0.884	0.456
Coefficient of Variation	-20.77	8.22	5.17
Range	88.8	96.09	132.2
Minimum	-57.06	-54.15	-53.18
Maximum	31.74	41.94	79.02
Count	9	9	9

Table 6. Fundamental Index Performance for MSCI Vietnam Index and MSCI Frontier Markets Index as on March 2016

Fundamentals (March 31, 2016)

	Div. Yld. (%)	P/E	P/BV	Sharpe Ratio
MSCI Frontier Markets	4.37	10.11	1.40	0.18
MSCI Vietnam Index	2.35	22.55	2.25	(0.18)

Table 7. Top Nine Constituents of MSCI Vietnam Index

Company	Mkt Cap (US$ Billions)	Index Wt. (%)	Sector	Sector Wt. (%)
Vingroup JSC	1.14	35.52	Financials	56.9
Masan Group Corp.	0.84	26.21	Cons Staples	93.0
Vietcombank	0.39	12.26	Financials	19.6
Sacombank	0.22	6.87	Financials	11.0
Hoa Phat Group JSC	0.19	6.06	Materials	100.0
Bank for Inv & Dev Vietn	0.13	4.00	Financials	6.4
Bao Viet Holdings	0.12	3.82	Financials	6.1
Petro Vietnam Gas JSC	0.10	3.27	Utilities	100.0
Hoang Anh Gia Lai Agri.	0.06	1.99	Cons Staples	7.0
Total	3.20	100.00		

Table 8. Return Correlation Matrix for U.S. Dollar Returns on MSCI Vietnam, MSCI Frontier Markets, MSCI Emerging Markets, and MSCI ACWI Indices

	MSCI Vietnam	MSCI Frontier Markets	MSCI Emerging Markets	MSCI ACWI
MSCI Vietnam	1.00	0.84	0.87	0.93
MSCI Frontier Markets	0.84	1.00	0.73	0.84
MSCI Emerging Markets	0.87	0.73	1.00	0.86
MSCI ACWI	0.93	0.84	0.86	1.00

extreme losses. Thus, for both Vietnam and frontier markets, there is a strong probability of frequent small gains and few extreme losses. Emerging markets, on the other hand, show high probability of small losses and few extreme gains. The Table 6 presents the fundamental index performance for MSCI Vietnam Index and MSCI Frontier Markets Index, which include dividend yield, price to earnings ratios, price to book value ratios, and Sharpe's ratios.

As shown in the Table 6, dividend yields are lower for MSCI Vietnam Index (2.35%) as compared to the MSCI Frontier Markets Index (4.37%). Price to earnings and price of book value ratios are higher for Vietnam. A combination of low dividend yield and higher price to earnings ratio can be interpreted as potential for growth market. Since the MSCI Frontier Markets Index includes many oil exporting countries, which are maturing economies, a substantial part of their expected returns comes from the dividend yield. As shown in the Table 7, the financial sector has a very high weight of 62.47% in the MSCI Vietnam Index. A very high weight of the financial sector contributes a high volatility to the index, as Vietnam is a small economy with a history of highly unstable inflation rates and exchange rates.

The Table 8 provides the correlation of market returns for Vietnam and frontier markets with emerging markets and the world market. It illustrates a very high overall correlation of market returns among the world equity markets, which depicts highly integrated global equity markets. Frontier markets' returns have slightly lower correlation with the world market as compared to emerging markets. As far as Vietnam is concerned, surprisingly, its returns show a higher correlation with emerging markets than the frontier markets, and in fact, it has recorded the highest correlation with the world market. Therefore, higher correlation of frontier markets and Vietnam with the world market, coupled with low mean returns and high standard deviations and coefficients of variance explain why there is lower allocation of global capital to the frontier markets in general and Vietnam in particular.

Conclusion, Suggestions, and Implications

The paper has reviewed the macro characteristics of frontier economies in general and the micro features of their financial markets in terms of returns, standard deviations, and correlations. For the period of study, that is, 2007 to 2015, frontier markets generated higher median returns in U.S. dollars terms than the median returns of emerging markets, though these returns were lower than that of the unabridged world market. An interesting fact to notice is that frontier markets have shown lower volatility than the emerging markets, which is evident from lower standard deviations and mean - median return spread of frontier markets in comparison to emerging markets. A robust economy needs a robust private sector, which in many frontier markets, is in its early stages. However, evidence from developed and emerging markets suggests that there exists an exponential relationship between market capitalization as a percentage of GDP and PPP GDP per capita. Thus, with the rise in economic prosperity, the stock markets of these small and neglected frontier economies can grow at an even greater pace than their economies. Thus, equity investments in these frontier markets hold a lot of potential for their economic prosperity. The results of the study demonstrate that frontier markets are a very diverse array of countries ranging from a high per capita GDP economy of Bahrain to a very low per capita economy of Bangladesh. Each of these markets shows distinct risk-return characteristics, different levels of operational efficiency & market liquidity, and distinctive foreign exchange movements. Thus, it makes sense for a global investor to investigate the investment opportunities in frontier markets considering specific markets in seclusion.

I also reviewed the macroeconomic structure of the Vietnam equity market from a global investor's perspective. Amongst the frontier market economies, Vietnam falls in the best investment opportunity zone, as it has a decent Buffet Indicator, and it is one of the best frontier markets in terms of liquidity and turnover. A higher correlation of Vietnamese market with the emerging market and world market depicts its strong integration with the global financial markets. Vietnam is surely shedding the image of a frontier market and is on the path to become an emerging market, at least in perceptual terms, for the global investors. The single limitation of Vietnam as a global equity investment destination is the lack of opportunities for equity investment, as currently there are only 31 out of 303 listed companies where foreigners are allowed to invest and this accounts for only 30% of market capitalization. Thus, the stock market regulator and State Securities Commission of Vietnam (SSC) should consider making the Vietnam equity market more accessible for foreign investors by removing the restrictions on investment in existing listed firms, and also by promoting local listing of foreign subsidiaries having operations in Vietnam.

The results of the present study do not confirm the results of Quisenberry and Griffith (2010), who revealed that frontier market companies demonstrated greater fundamental quality than emerging markets companies in terms of profitability, capital efficiency, and balance sheet strength. Although, the present study has not investigated the fundamental quality of companies in frontier markets and emerging markets, the results indicate that frontier markets are more volatile (measured in terms of coefficient of variance) than the emerging markets during the period of study. The study results are in agreement with Speidell (2009) that foreign investors are prone to viewing frontier markets through the prism of personal prejudice, making it difficult to invest in these markets. The profound investigation of the Vietnam market demonstrates that each frontier market presents a unique investment opportunity for the global investors, and specific frontier markets should be evaluated separately, without any biases.

Limitations of the Study and Scope for Future Research

The study focused on macroeconomic and mean-variance analysis for frontier markets in general and Vietnam in particular. It did not investigate other frontier markets profoundly. Therefore, there exists scope of further investigation of other frontier markets as equity investment opportunities from a global investor's perspective.

This paper provides correlation of dollar returns amongst the Vietnam, frontier markets, emerging markets, and the world market. However, it does not investigate correlation of dollar returns within the frontier market countries. Therefore, co-movements and co-integration of frontier markets amongst the group countries can be examined from the diversification perspective in future studies.

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