Returns: An International Perspective

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Abstract

This study examines risk and return characteristics of developed and emerging country stock markets. In recent years, U.S. individual investors have increasingly invested in foreign markets and are therefore interested in understanding stock market performance in other countries. Also, students find financial theory more relevant if concepts are explained using actual stock market data. Therefore, the results of this study will be helpful in explaining stock market return and risk concepts to individual investors and students alike.

I. Introduction

This study examines stock market returns in developed as well as emerging economies. The findings of this study will help individual investors understand how stock markets in various countries have performed in recent years. These results are useful as individual investors are able to compare U.S. equity market returns with those in developed and emerging economies around the world. Second, the results of this study may assist financial planners in explaining global stock market behavior to their clients. Financial professionals can explain the importance of long-term investing in stock market using these results. Finally, the results of this study may also help academicians to explain financial concepts such as risk and return using actual stock market index data. Students find financial theories more meaningful when explained in the context of actual financial market data.

This paper is organized as follows. The following section discusses the data utilized in this study. The literature review and empirical results are discussed in the following section. Finally, the paper summarizes the major findings of the study.

II. Data

This study examines national stock market indices of developed as well as emerging markets. This study has comprehensively collected index values of every available individual broad-based country stock index for the period 1998 to 2007. More specifically, Standard and Poor's broad based stock indices for the following countries are utilized:

A. Developed Stock Markets: (1) Australia (2) Hong Kong (3) Japan (4) New Zealand (5) Singapore (6) South Korea (7) Austria (8) Belgium (9) Denmark (10) Finland (11) France (12) Germany (13) Greece (14) Ireland (15) Italy (16) Netherlands (17) Norway (18) Portugal (19) Spain (20) Sweden (21) Switzerland (22) United Kingdom (23) Canada (24) United States.

B. Emerging Stock Markets: (1) China (2) India (3) Indonesia (4) Malaysia (5) Pakistan (6) Philippines (7) Taiwan (8) Thailand (9) Argentina (10) Brazil (11) Colombia (12) Chile (13) Mexico (14) Peru (15) Czech Republic (16) Hungary (17) Poland (18) Russia (19) Turkey (20) Egypt (21) Israel (22) Jordan (23) Morocco (24) South Africa.

Index values for each country stock index are collected for the period from December 1997 through December 2007. Additionally, index values of two broad stock indices,

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namely the emerging market index and the developed market index excluding the U.S. stock market index are utilized for comparison purposes. The index values for all stock market indices are in U.S. dollars and are obtained from the Standard and Poor's website. The returns are then calculated utilizing the standard formula. Therefore, each of the forty-eight country indices and two broad indices has annual stock returns available in U.S. dollars for the ten-year period 1998 to 2007. The next section briefly discusses selected literature relevant to this study.

III. Literature Review

Barry, Peavy III and Rodriguez (1998) state that emerging stock markets did not generate higher returns than the U.S. market for the time period December 1975 to June 1995. However, they found emerging market returns were relatively greater than U.S. stock returns for some shorter time periods. They caution that these conclusions are based on a broad emerging stock market index and the performance of individual emerging markets varies considerably.

Hanna, McCormack and Perdue (1999) state that investors invest in international equity markets to reduce risk while maintaining a certain level of return. They examined stock returns for the seven most industrialized nations (G7) over the ten year period January 1988 to December 1997. They found that the portfolio consisting only of U.S. stocks dominated every other portfolio consisting of U.S. stocks along with any other major stock market index of the remaining six G7 nations.

Bhargava, Konku and Malhotra (2004) examined returns for four stock indices, namely, Standard and Poor's Composite Index, Morgan Stanley Capital International World Index, Europe, Australia and Far East Index, and the Morgan Stanley Capital International Europe Index for the period 1978 to 2000. They conclude that, although the benefits of investing internationally have decreased, U.S. investors can still benefit from investing in international financial markets. Furthermore, they add that U.S. investors may particularly benefit by investing in European stock markets.

Tokat and Wicas (2005) state that historical risk and returns for U.S. and international securities are relatively similar over the long run. But, a combination of U.S. securities along with non-U.S. equities has resulted in higher risk-adjusted portfolio returns over the long run. They add that, despite the powerful argument for the long-term case, the benefits of investing internationally over short-term periods are somewhat unclear. The risk and return for non-U.S. equities can vary substantially over shorter time periods. The authors conclude that U.S. investors can benefit by investing in foreign stocks when the domestic stock market is not performing well.

Xavier-Gomez and Metghalchi (2006) indicate that there is still a significant home country bias in the investments of U.S. investors. They investigated whether U.S. investors should invest some proportion of their portfolio investments in emerging stock markets, and found that ex-post realized returns of emerging market stocks for the period 1988 to 2003 were small. They concluded that investments in emerging market stocks do not consistently help U.S. investors. Emerging markets outperform developed markets only over some time periods. Furthermore, emerging market returns of some regions perform better than those of other regions.

Boudreaux, Rao, Ward and Ward (2007) indicate that U.S. investments in emerging markets will continue to grow as domestic stock returns decline. They state that stock markets around the world are not perfectly correlated so that a downturn in the stock market of one country may be offset by an upturn in another country. They found that nine out of ten international mutual funds outperformed the U.S. stock market fund for the period September 2000 to September 2006, and they also found that foreign funds had greater volatility than U.S. funds.

Michelson, Philipova and Strotova (2008) compared fund returns with returns for three stock indices namely, emerging markets, the MSCI and the S&P 500 for the period 1999 to 2005. They report that annualized returns for emerging market funds underperformed only the emerging market index and outperformed the other two non-emerging equity indices. They conclude that U.S. investors would have benefited by investing in emerging markets during the five year period of their study.

Patel (2008) examined monthly returns of the U.S. stock market with two broad based stock indices of Europe, namely, the developed Europe index and the emerging Europe index, for the period January 1995 through July 2007. Patel found that the broad based emerging market index of Europe outperformed the broad based developed market index of Europe and the U.S. stock index. He concluded that the emerging markets of Europe could have provided important return and diversification benefits to U.S. investors.

Published research indicates some mixed results. Some studies indicate foreign stock investments are not particularly beneficial to U.S. investors, while other studies state that U.S. investors can benefit substantially by investing in foreign stock markets. This study contributes to the existing literature by examining the performance of individual country equity markets. The results are discussed in the next section.

IV. Empirical Results

Table I presents summary statistics of returns for three major stock indices, namely, the U.S., the developed market excluding the U.S. stock index (DEVXUS) and the emerging equity index. The U.S. stock index generated the lowest annual returns (7.9%) compared to both the DEVXUS index (12.0%) and the emerging stock index (20.0%) for the period 1998-2007. As expected, the emerging stock market had the highest volatility in returns as measured by standard deviation (35.2%). In contrast, the U.S. stock index had the lowest standard deviation (16.5%) compared to the other two stock indices. The coefficient of variation was lowest for the DEVXUS stock index and, additionally, as expected, the range between the minimum and maximum annual return is highest for the emerging index (104.2%) and lowest for the U.S. index (53.3%). The difference in annual returns for the emerging stock markets is greater than 100 percent. But, more importantly, the range is also equally high for the developed equity indices. The difference between annual returns is greater than fifty percent for the U.S. stock index and greater than sixty percent for the DEVXUS stock index. It is clear that the range on a yearly basis is substantial for all three indices so that investments in these markets should be long-term, particularly if investors seek to invest in individual country stock markets.

To illustrate this point further, Table II compares the difference between two five-year sub-periods, namely the 1998-2002 and 2003-2007 periods, for the individual emerging stock markets. The difference between the two five-year sub-periods is substantial for each country stock index. Among the individual countries, Egypt has the highest difference (99.3%) whereas Pakistan has the lowest difference (9.3%). The emerging stock market index has a difference of 38.3 percent between the two five-year sub-periods. It is clear that individual investors need to invest over a longer period than five years because of the volatility inherent in emerging stock markets. This table also displays the differences between the two five-year sub-periods for the individual developed country stock markets. Again, the difference is substantial between the two five-year sub-periods for each of the developed stock markets. Norway has the highest difference (45.9%) whereas Finland has the lowest difference (10.0%) in absolute values. The U.S. has a mean annual difference of 13.2 percent between the two five-year sub-periods. Again, the results indicate that investments in stock markets should be long-term in emerging as well as developed stock markets.

Table III ranks mean annual returns of all forty-eight country stock indices for the ten-year period 1998 through 2007. During this period, Egypt had the highest mean annual return (43.5%) whereas Taiwan had the lowest mean annual return (5.3%) among the stock markets of the forty-eight countries. The U.S. stock market ranked 47th out of the 48 stock markets, generating mean annual returns of 7.9 percent for the ten year period 1998 through 2007. These results indicate that U.S. investors could have benefited substantially by investing in international stock markets, emerging as well as developed stock markets.

Many individual emerging markets generated greater returns than those of the individual developed markets. The two developed stock markets, South Korea and Finland, also generated greater returns than those of the other equity markets. The summary rankings of annual returns are reported in Table IV. Ten of the top twelve returns were generated by emerging stock markets. Additionally, nineteen of the top twenty-four returns were generated by emerging stock markets, while nineteen of the twenty-four lowest returns were generated by developed stock markets.

Table V ranks the risk of the forty-eight country stock markets around the world, measured by standard deviations ranked from lowest to highest. The risks of the individual developed stock markets are generally substantially lower than the risks in the individual emerging markets. The U.S. stock market has the lowest volatility (16.5%) whereas Turkey has the highest volatility (88.6%) in annual returns. Table VI provides a summary of the rankings by standard deviation. Eleven of the twelve lowest standard deviations are from developed stock markets, and twenty of the twenty-four highest standard deviations are from emerging stock markets.

As expected, the results of the standard deviation rankings are consistent with the mean return rankings in that financial theory indicates a positive relationship between risk and return. Therefore, investors expect the equity markets to reward risky investments with relatively higher returns, as revealed, to a great extent, in earlier tables. Emerging markets generally produced higher returns and risks, and developed stock markets generated lower returns and risks. The issue that becomes critical then is which markets generate better risk adjusted returns. The next table presents data for the coefficient of variation (CV), the standard deviation divided by mean return.

Table VII presents the CV rankings, which indicate risk per unit of return, so that it is desirable for investors to have a lower CV. The earlier tables reveal that emerging stock markets have generally produced higher returns whereas developed stock markets have lower standard deviations. Therefore, it is interesting to observe the rankings of country stock markets based on CV. The table indicates that Australia has the lowest (best) CV whereas Taiwan has the highest CV, and the U.S. was ranked thirty-nine out of the forty-eight country stock markets examined in the study. Again, these results indicate that U.S. investors could have benefited substantially by investing in foreign stock markets.

Table VIII presents a summary of the CV rankings. The top twelve stock markets are distributed among five emerging markets and seven developed stock markets. The bottom twelve CVs include eight emerging markets and four developed stock markets. These results indicate that investors should consider individual country stock markets characteristics while investing in global stock markets.

V. Conclusion

This study examined risks and returns of forty-eight country stock markets for the ten-year period 1998 to 2007. The result of this study will be helpful to individual investors as they can compare performance of national stock markets of countries around the world. Also, these results emphasize the importance of long-term investing in stock markets. Financial professionals and academicians may be able to use the results of this study to explain financial concepts to their clients and their students.

Table I
Summary Statistics of Broad Stock Market Indices
Annual Returns: 1998 to 2007

Index	Mean	SD	CV	Min	Max	Range	N
US	7.9	16.5	2.096	-21.4	31.9	53.3	10
DEVXUS	12.0	20.6	1.711	-20.1	42.1	62.2	10
EMGMKT	20.0	35.2	1.766	-32.9	71.4	104.2	10

Note: All Index Values are in U.S. Dollars
DEVXUS is developed stock excluding U.S. stock index. EMGMKT is emerging stock market

Table II
Stock Market Mean Annual Returns: Two Sub-Periods

Emerging Stock Markets				Developed Stock Markets			
Country	**1998-02**	**2003-07**	**Diff**	**Country**	**1998-02**	**2003-07**	**Diff**
Egypt	-6.2	93.1	99.3	Norway	-3.2	42.7	45.9
Brazil	-3.7	69.9	73.7	Austria	0.4	37.7	37.4
Colombia	-7.4	62.3	69.6	Germany	-3.9	33.3	37.2
Argentina	-15.1	47.8	62.9	Denmark	0.2	35.9	35.7
Peru	4.9	60.3	55.3	Portugal	-2.6	28.7	31.3
Philippines	-14.5	40.0	54.5	Sweden	2.1	32.8	30.7
Czech Republic	4.5	58.9	54.5	Singapore	-0.4	30.3	30.7
India	4.2	56.9	52.7	Spain	3.5	34.1	30.7
China	2.5	54.0	51.5	Canada	0.9	31.6	30.6
Indonesia	3.8	53.0	49.2	Greece	10.1	39.7	29.5
Morocco	-2.1	44.3	46.4	Hong Kong	1.9	30.5	28.6
Turkey	12.1	57.9	45.8	Australia	5.4	33.7	28.2
Jordan	2.9	48.0	45.1	Belgium	2.6	29.4	26.7
Chile	-3.5	38.3	41.8	Netherlands	-2.0	24.1	26.1
Hungary	0.2	39.2	38.9	New Zealand	2.1	27.0	24.9
Poland	2.3	37.7	35.3	Ireland	2.0	24.8	22.8
Thailand	6.6	39.3	32.7	Switzerland	-0.8	21.1	21.9
Mexico	6.2	37.5	31.3	UK	-0.9	20.9	21.8
South Africa	6.6	34.7	28.0	France	5.4	24.9	19.5
Taiwan	-7.6	18.2	25.8	Italy	5.9	23.9	18.0
Israel	3.7	27.5	23.8	Japan	1.6	16.0	14.5
Malaysia	14.3	27.9	13.6	US	1.3	14.5	13.2
Russia	36.8	48.4	11.7	Finland	35.5	25.5	-10.0
Pakistan	27.5	36.8	9.3	South Korea	44.5	33.1	-11.4
EMGMKT	0.8	39.1	38.3	DEVXUS	0.01	24.0	24.0

Note: All Index Values are in U.S. Dollars
Diff is difference in annual returns between two five-year sub-periods

Table III

Annual Mean Return Rankings of Country Stock Markets: 1998-2007

Rank	Country	Mkt	Mean	Rank	Country	Mkt	Mean
1	Egypt	E	43.5	25	Austria	D	19.1
2	Russia	E	42.6	26	Spain	D	18.8
3	S. Korea	D	38.8	27	Denmark	D	18.1
4	Turkey	E	35.0	28	Sweden	D	17.4
5	Brazil	E	33.1	29	Chile	E	17.4
6	Peru	E	32.6	30	Argentina	E	16.4
7	Pakistan	E	32.1	31	Canada	D	16.2
8	Czech	E	31.7	32	Hong Kong	D	16.2
9	India	E	30.5	33	Belgium	D	16.0
10	Finland	D	30.5	34	Israel	E	15.6
11	Indonesia	E	28.4	35	France	D	15.2
12	China	E	28.3	36	Singapore	D	14.9
13	Colombia	E	27.5	37	Italy	D	14.9
14	Jordan	E	25.4	38	Germany	D	14.7
15	Greece	D	24.9	39	New Zealand	D	14.6
16	Thailand	E	22.9	40	Ireland	D	13.4
17	Mexico	E	21.9	41	Portugal	D	13.1
18	Morocco	E	21.1	42	Philippines	E	12.8
19	Malaysia	E	21.1	43	Netherlands	D	11.0
20	South Africa	E	20.6	44	Switzerland	D	10.2
21	Poland	E	20.0	45	UK	D	10.0
22	Norway	D	19.8	46	Japan	D	8.8
23	Hungary	E	19.7	47	US	D	7.9
24	Australia	D	19.5	48	Taiwan	E	5.3

Note: All Index Values are in U.S. Dollars

Table IV

Summary of Mean Return Rankings of Country Stock Markets

Ranks	Emerging Markets	Developed Markets	Total
Ranks 1 to 12	10	2	12
Ranks 13 to 24	9	3	12
Ranks 25 to 36	3	9	12
Ranks 37 to 48	2	10	12
Total	24	24	48

Table V

Standard Deviation Rankings of Country Stock Markets: 1998-2007

Rank	Country	Mkt	SD	Rank	Country	Mkt	SD
1	US	D	16.5	25	Morocco	E	33.2
2	UK	D	18.1	26	Philippines	E	33.7
3	Switzerland	D	18.4	27	Hungary	E	34.0
4	Australia	D	18.7	28	Czech	E	34.8
5	Netherlands	D	19.8	29	Mexico	E	36.5
6	Denmark	D	23.3	30	Israel	E	36.5
7	France	D	23.3	31	Sweden	D	37.8
8	Canada	D	23.4	32	Malaysia	E	41.0
9	New Zealand	D	24.5	33	China	E	43.3
10	Italy	D	25.3	34	Peru	E	44.1
11	Portugal	D	25.4	35	Greece	D	46.9
12	Poland	E	25.4	36	Jordan	E	46.9
13	Austria	D	27.6	37	Indonesia	E	47.4
14	Singapore	D	28.4	38	India	E	47.8
15	Spain	D	28.4	39	Argentina	E	49.0
16	Taiwan	E	28.6	40	Thailand	E	49.6
17	Ireland	D	28.7	41	South Korea	D	50.7
18	Germany	D	28.9	42	Brazil	E	54.2
19	Hong Kong	D	29.0	43	Colombia	E	55.8
20	Japan	D	30.1	44	Finland	D	56.4
21	Norway	D	31.3	45	Pakistan	E	64.1
22	Belgium	D	31.7	46	Russia	E	69.6
23	Chile	E	32.4	47	Egypt	E	73.9
24	South Africa	E	32.8	48	Turkey	E	88.6

Table VI

Summary of Standard Deviation Rankings of Country Stock Markets

Ranks	Emerging Markets	Developed Markets	Total
Ranks 1 to 12	1	11	12
Ranks 13 to 24	3	9	12
Ranks 25 to 36	10	2	12
Ranks 37 to 48	10	2	12
Total	24	24	48

Table VII

Coefficient of Variation Rankings of Country Stock Markets: 1998-2007

Rank	Country	Mkt	CV	Rank	Country	Mkt	CV
1	Australia	D	0.956	25	Netherlands	D	1.794
2	Czech Republic	E	1.098	26	Switzerland	D	1.810
3	Poland	E	1.272	27	UK	D	1.811
4	Denmark	D	1.288	28	Jordan	E	1.844
5	South Korea	D	1.306	29	Finland	D	1.849
6	Peru	E	1.352	30	Chile	E	1.858
7	Canada	D	1.444	31	Greece	D	1.882
8	Austria	D	1.447	32	Singapore	D	1.903
9	Spain	D	1.509	33	Portugal	D	1.944
10	China	E	1.531	34	Malaysia	E	1.947
11	France	D	1.533	35	Germany	D	1.970
12	India	E	1.565	36	Belgium	D	1.981
13	Morocco	E	1.572	37	Pakistan	E	1.994
14	Norway	D	1.580	38	Colombia	E	2.031
15	South Africa	E	1.590	39	US	D	2.096
16	Russia	E	1.634	40	Ireland	D	2.142
17	Brazil	E	1.638	41	Thailand	E	2.163
18	Mexico	E	1.671	42	Sweden	D	2.171
19	Indonesia	E	1.673	43	Israel	E	2.340
20	New Zealand	D	1.681	44	Turkey	E	2.530
21	Egypt	E	1.700	45	Philippines	E	2.642
22	Italy	D	1.705	46	Argentina	E	2.993
23	Hungary	E	1.726	47	Japan	D	3.426
24	Hong Kong	D	1.794	48	Taiwan	E	5.404

Table VIII

Summary of Coefficient of Variation Rankings of Country Stock Markets

Ranks	Emerging Markets	Developed Markets	Total
Ranks 1 to 12	5	7	12
Ranks 13 to 24	8	4	12
Ranks 25 to 36	3	9	12
Ranks 37 to 48	8	4	12
Total	24	24	48

References

Christopher B. Barry, John W. Peavy III and Mauricio Rodriguez, "Performance Characteristics of Emerging Capital Markets," *Financial Analysts Journal*, pp. 72-80, January/February 1998.

Vivek Bhargava, Daniel K. Konku and D. K. Malhotra, "Does International Diversification Pay?" *Financial Counseling and Planning*, Volume 15, Number 1, pp. 53-62, 2004.

Dennis O. Boudreaux, S. P. Uma Rao, Dan Ward and Suzanne Ward, "Empirical Analysis of International Mutual Fund Performance," *International Business and Economics Research Journal*, Volume 6, Number 5, pp. 19-22, May 2007.

Xavier Garza-Gomez and Massoud Metghalchi, "Emerging Equity Markets: To Invest or Not to Invest?" *Journal of Applied Business Research*, Volume 22, Number 1, pp. 57-68, First Quarter 2006.

Michael E. Hanna, Joseph P. McCormack and Grady Perdue, "A Nineties Perspective on International Diversification," *Financial Services Review*, Volume 8, pp.37-45, 1999.

Stuart Michelson, Elena Philipova and Petra Srotova, "The Case for Emerging Market Funds," *Journal of Business and Economics Research*, Volume 6, Number 11, pp. 81-88, November 2008.

Jayen B. Patel, Stock Returns of Developed and Emerging Markets of Europe," *Journal of International Business Research,* Volume 7, Number 1, pp. 35-45, 2008.

Standard's and Poor's Website. www.globalindices.standardandpoors.com

Yesim Tokat and Nelson W. Wicas, "Short-Run Considerations for the Long-Term International Investor," *The Journal of Investing*, pp. 32-40, Spring 2005.