A TEST OF DIVERSIFICATION

Armand Picou, Texas A&M University – Corpus Christi

ABSTRACT

Using 11 years of annual returns (2004-2014) for 10 asset classes, we examine recent results for long held theories on global diversification. We examine both the diversified single country asset class investment and the financially prudent recommended combinations of global asset classes. The study finds that a diversified domestic mid-cap asset class performed slightly better than both well-known and lesser known domestic asset classes tested. Additionally global multi asset class encompassing mixtures did perform marginally better but the overall risk per unit of return was significantly higher.

Keywords: International Diversification, Investment Strategies, Global Portfolios, Financial Transparency

INTRODUCTION

An International Portfolio is usually defined as a grouping of investment securities more from foreign markets than from domestic ones. An international portfolio is thus designed to give the investor diversification with exposure to emerging and developing markets as well as developed international markets. From another investment approach, a Global Portfolio would be defined to contain both domestic U.S. companies as well as non-U.S. companies. For the average U.S. investor, the ownership of multiple mutual fund portfolios combining purely domestic funds with more international and/or emerging / developing funds is a typical step in achieving global diversification, thus creating an overall Global Portfolio with multiple financial assets.

Following generally accepted financial advice is commonly acknowledged as a prudent step for the average investors. In the 70's and 80's, study after study shows the benefits of stock diversification. As domestic stock diversification became commonplace in financial circles, financial advisors sought to improve upon the industry standard. As theory–to-practice evolved, financial advisors began promoting international diversification. Today, diversification is generally touted as an accepted means of reducing risk and international diversification is believed to be even more beneficial. Additionally, international diversification has grown to include not only the international stocks of developed countries but also companies from emerging and / or developing countries.

DISCUSSION

Financial transparency is an important consideration to investing. Due to U.S. financial transparency requirements, it is easier to find reliable stocks over any other market (Nobes & Parker 2016). Significant deficiencies in financial reporting are evident for stocks from other countries. Some firms achieve dual listing both abroad and here in the U.S. by complying with U.S. exchange requirements. However, dual listings have decreased since the passage of Sarbanes-Oxley, as foreign firms are willing to neither display the required financial documents

nor comply with the legal penalties if accounting inaccuracies are later found. With transparency an issue for global investments, the client has little choice but to rely on the compensated financial advisor. The results of this study thus reflect in some way on the results achieved by active investment and advisors in general.

Active investing involves searching for the best opportunities over a longer period. In challenging environments, active management can provide advantages over passive or index investing (Mayo 2014). There is no shortage of geopolitical stressors such as terrorist attacks and military conflicts abroad. A professionally managed portfolio is intended to help investors distinguish when events might have limited or short term impact relative to structural changes with long lasting consequences. Portfolio management experience through various types of markets and investing cycles can help put into perspective how major events will have at best a temporary impact.

Passive investing: maintaining portfolio holdings that match an index's results is becoming increasingly popular. Passive investing mirrors both good and bad results. Typically, index funds have continuous domestic exposure with zero cash holdings for capital preservation, and little if any specific focus on dividends or international trends.

Advisors believe in a research-driven approach to investment advising, employing investment strategies chosen from a large set of products. They devote significant time and resources at the corporate level to pass on to the store-front level the best investment strategies and the best marketing strategies to attract clients. An inordinate amount of time is spent understanding the investors' objectives and goals to develop the bonds of trust it takes to satisfy the client.

The advisors' corporate leadership promotes investment strategies that mirror their capital market insights. Their extensive research capabilities and experience help clients navigate the difficult world of investment choices. Specifically, active management believes that markets are not solidified and thus an investment portfolio must be continuously assessed for changes in risk. Adaptation to changing risk is a necessary strategy to take advantage of market opportunities. This often requires educating the investor client.

A clients understanding of the risk of their portfolio relative to achieving their stated goals is just a starting point. How the individual risk of a portfolio changes when combined with other assets is a key part of broadening the clients' investment options. Asset allocation as part of an overall portfolio design generally mandates a multi-asset portfolio. Once the portfolio of assets is strategically designed, the hope is the long-run payoff will meet expectations of the client.

Diversification plainly means to not put all your eggs in one basket. The hallmark of diversification is to own securities as unrelated as possible. If referring to stocks only, then investing in at least 10 sectors is recommended to achieve diversification across industries. The objective of diversification is to lower the risk profile of your portfolio by adding low correlated stocks. This allows the performance of each stock to smooth the performance (good or bad) of the other stocks. General wisdom is to have exposure to all 11 sectors with the flexibility to invest internationally and to maintain cash holdings during times of increased uncertainty

Unpredictable events can cause uncertainty, and investors are wary of uncertainty. For example, there is uncertainty about the future of Brexit. The real consequences of this geopolitical change will not be known for years. However, markets assign an expectation resulting from an event. Once the price is incorporated in securities, the event may not have as big an actual impact as was initially believed.

The next step in stock investing is to avoid adding more of the same holdings to your portfolio because this concentrates the risk with perfect positive correlation (Brigham & Daves 2016). Simply combining mutual funds without comparing holdings has its own peril. The general recommendation to the client who has reached this point in their education is that it would be good to add international companies that do not originate from the U.S. A two pronged approach is generally recommended. Both large developed countries and emerging / developing countries are today promoted as having the potential to reduce risk while possibly enhancing returns (See Madura 2016 & Kaser, 1994).

The client is usually advised to add components of both large non-U.S. International companies and smaller companies from emerging/developing nations. While the risks of these separate components are generally higher, the client is assured that because of diversification theory the effect will lead to lower risk while maintaining return if not enhancing performance. Most financial advisors advocate combinations that range from a more conservative 60/40/0 to a more aggressive 60/30/10 or 60/20/20 mix of stocks from Domestic/International/Emerging markets respectively.

Based on the 11 years of data (2004-2014) we examine various asset classes to determine if actual results meet or exceed predicted results. While this is both a sample of convenience and not meant to be an exhaustive study, it does have some bearing on financial performance in general. Since each of the asset classes are aggregates of multiple unique portfolios, individual performance is not implied.

LITERATURE REVIEW

In the seminal paper by Bruno Solnik (1974) international diversification is strongly supported. The advantages of an international portfolio are demonstrated relative to the then modern domestic only diversified portfolio. The author contends the likely result of this `investment direction is a "large" reduction of risk over a purely domestic portfolio. This paper among many to follow created a pivotal change in financial advice.

Integration of global equity markets has become a prominent research area particularly since the October 1987 stock market crash. (See Srivastava 2007 for a summary). Emerging market research steadily grew with the dichotomous concerns of both changes in integration over time and the continued potential for diversification: See Chariou, Malris, & Nishiotis (2006) Bekaert & Urias (1996) or French & Poterba (1991).

Clearly research is concerned with changes in the benefits of global diversification over time. In Ratner & Leal (2005) the authors are concerned with the increasingly interrelated world economies and whether this dilutes the ability to achieve beneficial diversification. Over time as world economies become increasingly correlated, will the cost of diversification be worth the benefits? The authors contend there are still substantial benefits implying it is worth the cost.

In Chariou, Malris, & Nishiotis (2006), the authors contend country specific closed-end funds can realize international diversification benefits similar to investing directly using foreign indices. The period of their study covered 1993 to 2002, which is just prior to the period of our research. Their conclusions included no statistically significant diversification benefits. It should be noted that the single country funds they examined had far higher standard deviations than the multi country indices used in the current study. Direct comparison of their research to our approach while not appropriate; the current study in using diversified indices presupposes lower overall risk upon combination especially if the lower correlation of emerging markets has

remained prevalent since the work of Chariou et.al.

In Tian (2008) the author examined the various components of the diverse Chinese markets and found a high degree of cointegration. This may indicate that diversification benefits are limited when adding Singapore stocks and Taiwanese stocks to Hong Kong Stocks and so forth. These markets appear to be closely linked with one another and with the Beijing markets, further reducing the benefits of diversification across the region since 2008. Tian found substantial declines in all volatility indicators and concludes the possibility of lower future diversification benefits. For further discussion of market segmentation in China's markets, see Sjoo, & Zhang, 2000.

Similar results for the European equity markets were found by Meric & Gulser (1997). European and U.S. equity markets exhibited substantial increases in correlation which assumes decreases the benefits of international diversification. Following these studies, if significant diversification benefits remain today, then a global investment strategy should produce less risk than domestic only equity holdings. A comparison of home based performance with a range of global holdings will help illuminate the recent behavior of world markets.

Today, substantial evidence exists that U.S. investors prefer home based investments (see Bergin & Pyun 2016, O'Hagan-Luff & Berrill 2015 and Gorman & Jorgensen 2002). Investor portfolios are dominated by domestic stocks. Additionally, even when international stocks are added, investors favor the highly integrated developed markets rather than the emerging markets. Thus we examine various combinations of prominent international stocks with leading domestic stocks.

Reversing the domestic perspective of global investing to one of developing countries adding U.S. stocks to their overall portfolio is the approach suggested by Driessen and Laevan (2005). The authors found the highest diversification benefits from globalization for investors from developing countries. We also examine global combinations dominated by developing countries.

Finally, we acknowledge an important limitation of this paper: time varying integration. The data assumes no changes in correlation between international / developing countries and the U.S. Several authors have expressed concern for the changes in integration (see Chollete, Pena & Lu 2012 or Bai and Green 2010).

DATA AND METHODOLOGY

Data is from Ibbotson Associates, wholly-owned subsidiaries of Morningstar, Inc. Returns are for the 11 calendar years 2004 through 2014. Table 1 contains the data used in the study. The 10 asset classes are defined as follows:

1. The Standard and Poor's 500 Index (S&P) represents a market cap weighted selection of the 500 most attractive U.S. common stocks based on leadership in asset valuation, market liquidity and industry leadership position.
2. The Large-Cap Growth stocks come from the Russell 1000 Growth Index which targets firms with both higher growth forecasts and higher price to book value ratios.
3. The Large-Cap Value stocks arise from the Russell 1000 Value Index targeting firms with as yet unrealized potential. These firms have lower price to book ratios and lower predicted growth.
4. The Mid-Cap stocks represent firms from the Russell Midcap Index, encompassing the 800 smallest companies in the Russell 1000 Index. These firms are the lowest in market capitalization and represents only about 26% of the Indexes' total valuation.
5. The Small-Cap stocks are found on the Russell 2000 Index representing the smallest 2000 companies in the Russell 3000 Index. These firms represent less than 10 % of the overall value of the Russell 3000.

6. The International asset class is composed of firms found in the MSCI EAFE Index. The EAFE Index represents leading firms from Europe, Australia-Asia, and the Far East. The Index is a free-floating-adjusted market capitalization index targeting developed country performance measures. The U.S. and Canada are excluded from the index.

7. The Emerging Market Equity asset class includes over 20 global emerging markets. The MSCI Emerging Market Index is used to represent float-adjusted market capitalization in these markets. To an extent, the BRIC countries dominate the Index. Brazil, Russia, India and China compose the BRIC countries.

8. The Bonds as an asset class follow the Barclays Capital U.S. Aggregate Bond Index which combines the Barclays Capital Government Bond Index, the Barclays Corporate Bond Index, The Barclays Mortgage-Backed Securities Index, the Barclays Asset-Backed Securities Index, and investment-grade securities with minimum valuations of $100 Million and maturity of one year or more.

9. The TIPS or Treasury Inflation Protected Securities uses the L series of the Barclays Capital U.S. TIPS Index. The index covers TIPS with both a minimum of 1 year to maturity and a minimum issue size of $500 million.

10. The High Yield Bond Index results are from the Barclays Capital High Yield Index which follows U.S. fixed-rate, taxable, below investment grade corporate bonds with maturities exceeding one year.

Table 1 ANNUAL % RETURNS FOR THE ASSET CLASSES											
Asset Class	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
S&P 500	10.87	4.91	15.80	5.49	-37.00	26.47	15.06	2.11	16.00	32.39	13.69
Large Growth	6.30	5.26	9.07	11.81	-38.44	37.21	16.71	2.64	15.26	33.48	13.05
Large Value	16.49	7.05	22.25	-0.17	-36.85	19.69	15.51	0.39	17.51	32.53	13.45
Mid Cap	20.22	12.65	15.26	5.60	-41.46	40.48	25.48	-1.55	17.28	34.76	13.22
Small Cap	18.33	4.55	18.37	-1.57	-33.79	27.17	26.85	-4.18	16.35	38.82	4.89
International	20.70	14.02	26.86	11.63	-43.06	32.46	8.21	-11.73	17.90	23.29	-4.90
Emerging Mkts.	25.95	34.54	32.59	39.78	-53.18	79.02	19.20	-18.17	18.63	-2.27	-2.19
TIPS	8.46	2.84	0.41	11.64	-2.35	11.41	6.31	13.56	6.98	-8.61	3.64
Bonds	4.34	2.43	4.33	6.97	5.24	5.93	6.54	7.84	4.21	-2.02	5.97
High Yield Bonds	11.13	2.73	11.85	1.87	-26.16	58.21	15.12	4.98	15.81	7.44	2.45

The formula for Sample Standard Deviation where
x_i is the return for the ith year, and
$\bar{x}$ is the simple average and N = 11 to adjust for the degrees of freedom is as follows:

$$s = \sqrt{\frac{1}{N-1} \sum_{i=1}^{N} (x_i - \bar{x})^2}$$

The formula for Coefficient of Variation or risk per unit of geometric mean return is as follows:

$$C.V. = S / (G.M.R.)$$

Returns are calculated in two ways. First the hypothetical investment of $1000 is made on January 1, of 2004. Assuming no transaction fees or loads, the funds are held in each asset class for the entire 11 years. No additional funds are added to the accounts. The annual performance is then computed and the ending amount for each year becomes the starting amount for the next year. This results in a portfolio valuation at the end of the 11 years. These future values are referred to as dollar returns, allowing for direct visual comparison between asset classes. Table 2 contains the dollar returns.

A second return is also calculated using Time Value of Money techniques to determine

the geometric mean return. The present value is the original $1000; the future value is the ending value or dollar return after 11 years; payments are zero and time is 11 years. The geometric mean return is then computed to find the average rate per period on investments that are compounded over multiple periods.

Table 2 ANNUAL COMPOUNDED DOLLAR RETURNS FOR THE ASSET CLASSES Initial Investment = $ 1000											
Asset Class	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
S&P 500	1109	1163	1347	1421	895	1132	1303	1330	1543	2043	2322
Large Growth	1063	1119	1220	1365	840	1153	1345	1381	1591	2124	2401
Large Value	1165	1247	1524	1522	961	1150	1329	1334	1567	2077	2357
Mid Cap	1202	1354	1561	1648	965	1356	1701	1675	1964	2647	2997
Small Cap	1183	1237	1464	1441	954	1214	1540	1475	1716	2383	2499
International	1207	1376	1746	1949	1110	1470	1591	1404	1655	2041	1941
Emerging Mkts.	1260	1695	2247	3141	1470	2632	3138	2568	3046	2977	2912
TIPS	1085	1115	1120	1250	1221	1360	1446	1642	1757	1606	1664
Bonds	1043	1069	1115	1193	1255	1330	1417	1528	1592	1560	1653
High Yield Bonds	1111	1142	1277	1301	961	1520	1749	1837	2127	2285	2341

Next the sample standard deviation of returns is determined for each of the asset classes over the entire 11 year period. Using the deviation divided by the geometric mean return produces the coefficient of variation. The geometric mean return is employed over the arithmetic mean as a more accurate representation of the compounded returns over the entire period. With the C.V., the reader is looking for the best risk return tradeoff, or the lowest CV per unit of return (see Table 3).

Table 3 GEOMETRIC MEAN RETURNS, STANDARD DEVIATION, AND COEFFICIENT OF VARIATION FOR THE ASSET CLASSES				
Asset Class	G.M.R.	Std. Dev.	C.V.	Rank
S&P 500	8.00	17.88	2.24	4
Large Growth	8.30	19.53	2.35	7
Large Value	8.10	18.14	2.24	5
Mid Cap	10.50	21.66	2.06	3
Small Cap	8.70	19.73	2.27	6
International	6.21	21.57	3.47	10
Emerging Mkts.	10.20	34.48	3.38	9
TIPS	4.70	6.65	1.42	2
Bonds	4.70	2.70	0.57	1
High Yield Bonds	8.00	19.75	2.47	8

Following evaluation of the individual asset classes, combinations of asset classes are examined for comparison. We test the standard recommendations of leading financial advisors, namely 60/40/0, 60/30/10, 60/20/20, 60/0/40 and finally 40/0/60 and 40/60/0 using Mid Cap/ International/ Emerging Markets respectively. Table 4 contains the combinations studied.

Table 2 contains the annually compounded dollar returns for the individual indices. Assuming the 11 investment period with no withdrawals the account balances would be as follows. In descending order for a single index portfolio are Mid Cap ($ 2997), Emerging Markets ($ 2912), Small Cap ($ 2499), and Large Growth ($ 2401). Not surprisingly, Bonds ($

1653) had the lowest returns followed by TIPS ($ 1664).

<table>
<tr><td colspan="12">Table 4
ANNUAL % RETURNS FOR MID CAP/ INTERNATIONAL / EMERGING MARKET GLOBAL PORTFOLIOS</td></tr>
<tr><td>Portfolios</td><td>2004</td><td>2005</td><td>2006</td><td>2007</td><td>2008</td><td>2009</td><td>2010</td><td>2011</td><td>2012</td><td>2013</td><td>2014</td></tr>
<tr><td>60 / 40 / 0</td><td>20.41</td><td>13.20</td><td>19.90</td><td>8.01</td><td>-42.10</td><td>37.27</td><td>18.57</td><td>-5.62</td><td>17.53</td><td>30.17</td><td>5.97</td></tr>
<tr><td>60 / 30 / 10</td><td>20.94</td><td>15.25</td><td>20.47</td><td>10.83</td><td>-43.11</td><td>41.93</td><td>19.67</td><td>-6.27</td><td>17.60</td><td>27.62</td><td>6.24</td></tr>
<tr><td>60 / 20 / 20</td><td>21.46</td><td>17.30</td><td>21.05</td><td>13.64</td><td>-44.12</td><td>46.58</td><td>20.77</td><td>-6.91</td><td>17.67</td><td>25.06</td><td>6.51</td></tr>
<tr><td>60 / 0 / 40</td><td>22.51</td><td>21.41</td><td>22.19</td><td>19.27</td><td>-46.15</td><td>55.90</td><td>22.97</td><td>-8.20</td><td>17.82</td><td>19.95</td><td>7.06</td></tr>
<tr><td>40 / 60 / 0</td><td>20.51</td><td>13.47</td><td>22.22</td><td>9.22</td><td>-42.42</td><td>35.67</td><td>15.12</td><td>-7.66</td><td>17.65</td><td>27.88</td><td>2.35</td></tr>
<tr><td>40 / 0 / 60</td><td>23.66</td><td>25.78</td><td>25.66</td><td>26.11</td><td>-48.49</td><td>63.60</td><td>21.71</td><td>-11.52</td><td>18.09</td><td>12.54</td><td>3.97</td></tr>
</table>

RESULTS

Table 3 contains geometric mean returns, sample standard deviation and the coefficient of variation. Ranking from the lowest C.V. (lowest risk per unit of return) are Bonds (C.V. =0.57) and Tips (C.V. =1.42) which also had the lowest geometric mean returns. Note that TIPS had more than double the risk per unit of return yet only earned an additional $ 11 dollars over the period studied.

However once we focus on equity investments, the results show Mid Cap had the highest returns and the lowest C.V. (R=10.56%/C.V.=2.06). Emerging Markets with a close second highest return (R=10.2%, C.V. =3.38) is in 7th position below Mid Cap when adjusting for risk. For the period studies, the only index with a higher risk per unit of return than Emerging Markets is the International asset class.

Small Cap is third overall of the equity indices in return with 8.27%, but 4th when adjusting for risk (C.V.=2.27) behind the S&P 500 and Large Growth both with C.V.s=2.24. Small caps are generally believed to be riskier than larger firms, but for the period studied managed to edge out Large Growth in both return and lower risk return.

<table>
<tr><td colspan="12">Table 5
ANNUAL COMPOUNDED DOLLAR RETURNS
FOR MID CAP/ INTERNATIONAL / EMERGING MARKET GLOBAL PORTFOLIOS
Initial Investment = $ 1000</td></tr>
<tr><td>Portfolios</td><td>2004</td><td>2005</td><td>2006</td><td>2007</td><td>2008</td><td>2009</td><td>2010</td><td>2011</td><td>2012</td><td>2013</td><td>2014</td></tr>
<tr><td>60 / 40 / 0</td><td>1204</td><td>1363</td><td>1635</td><td>1769</td><td>1023</td><td>1401</td><td>1657</td><td>1566</td><td>1841</td><td>2404</td><td>2574</td></tr>
<tr><td>60 / 30 / 10</td><td>1209</td><td>1395</td><td>1685</td><td>1888</td><td>1059</td><td>1518</td><td>1812</td><td>1683</td><td>1980</td><td>2498</td><td>2671</td></tr>
<tr><td>60 / 20 / 20</td><td>1215</td><td>1425</td><td>1725</td><td>1960</td><td>1095</td><td>1605</td><td>1939</td><td>1805</td><td>2124</td><td>2656</td><td>2829</td></tr>
<tr><td>60 / 0 / 40</td><td>1225</td><td>1487</td><td>1817</td><td>2168</td><td>1167</td><td>1820</td><td>2238</td><td>2054</td><td>2420</td><td>2903</td><td>3108</td></tr>
<tr><td>40 / 60 / 0</td><td>1205</td><td>1367</td><td>1672</td><td>1829</td><td>1052</td><td>1424</td><td>1635</td><td>1512</td><td>1779</td><td>2283</td><td>2363</td></tr>
<tr><td>40 / 0 / 60</td><td>1237</td><td>1555</td><td>1955</td><td>2465</td><td>1270</td><td>2077</td><td>2528</td><td>2237</td><td>2641</td><td>2973</td><td>3091</td></tr>
</table>

Tables 5 and 6 contain the calculated returns and the dollar returns respectively for the studied combinations. The highest dollar return was achieved with a 60% Midcap, 0% International and 40% Emerging Markets ($ 3108). The reverse mixture, 40% Mid Cap and 60 % Emerging Market was a close second ($ 3091 in dollar returns). All other combinations were much lower.

Comparing the risk adjusted returns changed the order somewhat with the mildly aggressive 60/20/20 global combination tying the results for the 60/0/40 combination. The worst

risk adjusted performance was the 40/0/60 combination.

None of the combinations tested performed on a risk adjusted basis better than the Mid Cap Index. In fact, none of the combinations bested three other single indices, the S&P 500, Large Value and Small Cap. While returns were higher, risk adjusted returns paint a different story.

Table 6 GEOMETRIC MEAN RETURNS, STANDARD DEVIATION, AND COEFFICIENT OF VARIATION FOR THE GLOBAL PORTFOLIOS MID CAP / INTERNATIONAL / EMERGING MARKETS.				
Portfolios	G.M.R.	Std. Dev.	C.V.	Rank
60 / 40 / 0	8.98	21.12	2.35	3
60 / 30 / 10	9.34	21.90	2.34	2
60 / 20 / 20	9.91	22.83	2.30	1
60 / 0 / 40	10.90	25.03	2.30	1
40 / 60 / 0	8.13	21.10	2.60	5
40 / 0 / 60	10.80	27.76	2.57	4

CONCLUSIONS

For decades, financial advisors have advocated for a mixture of domestic, international and emerging markets, typically 60/20/20. Conventional wisdom aside, 11 years of historical data (2004-2014) indicate returns are best for domestic growth stocks. Three other domestic portfolios outperformed all global combinations tested. All other investment choices have lower risk per unit of return. The results indicate notionally: Global diversification benefits for the period studied are significantly lower than domestically diversified portfolios. Causes are related potentially to U.S. Financial Statement Transparency may well be superior to all types of international investing or taking risks with domestic small caps.

It is well know that domestic stock markets have more financial statement transparency than stocks of other countries. Since a large portion of the investing public only uses diversified domestic stock portfolios, perhaps this is either collective wisdom or simply communal good fortune. An overabundance of caution in investing outside the U.S. seems to reward investors at least for the 11 years studied.

Some limitations must be noted as to the definition of domestic only investments. Many of the firms in Mid Cap, Large Value, S&P 500, and Small Cap are doing business overseas. Income streams to domestic stocks do not discriminate by country. One should not assume domestic only investing excludes business with the rest of the globe. Many products sold by U.S. corporations are made with parts from other countries. For example, domestic branded automobiles are a collection of international parts.

Risk is a major concern for most investors. Diversification is a technique to help reduce risk and investment volatility reduction strategies dominate the financial advice most investors receive. However, it is important to regularly examine our predictions based on theory to determine how accurate our assumptions were.

The time period of choice is a sample of convenience and includes both a recessionary and boom period. In another time period, different results are entirely plausible. There is a general belief that the US economy has only gotten stronger. And this strengthening continues as unemployment falls and GDP rises. These contributing factors may have altered results from the more conventional global approach.

REFERENCES

Bai,Y. & Green, C. (2010). International diversification strategies: Revisited from the risk perspective. *Journal of Banking & Finance, 34,* 236–245.

Bekaert, G. & Urias, M.S. (1996). Diversification, integration and emerging market closed-end funds. *Journal of Finance, 51,* 835–869.

Bergin, P. & Pyun, J. (2016). International portfolio diversification and multilateral effects of correlations. *Journal of International Money and Finance, 62,* 52-71.

Brigham, E. & Daves, P. (2016). Intermediate Financial Management (*Twelfth edition*). Boston , MA: Cengage.

Charitou, A., Makris, A. & Nishiotis G. (2006). Closed-end country funds and international diversification. Multinational Finance Journal, *10*(3/4), 251–276.

Chollete, L., Pena V. & Lu, C. (2012). International diversification: An extreme value approach. *Journal of Banking & Finance, 36*, 871–885.

Driessen, J. & Laeven L. (2007). International portfolio diversification benefits: Cross-country evidence from a local perspective. *Journal of Banking & Finance, 31*, 1693–1712.

French, K.R. & Poterba, J.M. (1991). Investor diversification and international equity markets. *American Economic Review, 81*, 222–226.

Gorman, L. R. & Jorgensen B.N. (2002). Domestic versus international portfolio selection: A statistical examination of the home bias. *Multinational Finance Journal, 6,*131–166.

Kasar, K. (1994). Measuring the gains from international portfolio diversification. *Federal Reserve Bank of San Francisco Weekly Newsletter, 94*(14).

Madura, J. (2016). *International financial management* (*Thirteenth edition*). Boston, MA: Cengage.

Mayo, H. (2014). *Investments: An introduction* (*Eleventh edition*). Mason, OH: South-Western.

Meric, I, & Meric G. (1997). Co-movements of European equity markets before and after the 1987 crash, *Multinational Finance Journal, 1(2),* 137-152.

Nobles, C. & R. Parker (2016*). Comparative international accounting (Thirteenth edition*). Essex, Eng: Pearson.

O"Hagan-Luff, M. & Berrill J. (2015). Why stay-at-home investing makes sense. *International Review of Financial Analysis, 38,* 1-14.

Ratner, M. & Leal R. (2005). Sector integration and the benefits of global diversification. *Multinational Finance Journal, 9(3/4),* 235-267

Sjoo, B. & Zhang, J. (2000). Market segmentation and information diffusion in China's stock markets. Journal of *Multinational Financial Management, 10,* 421–438.

Solnik, B. (1974). Why not diversify internationally rather than domestically? *Financial Analysts Journal, 30(4),* 48-96.

Srivastava, A. (2007). Cointegration of asian markets with us markets: international diversification perspectives. *Global Business Review, 8(2),* 251-265.

Tian, G. (2008). Equity market price interactions between China and the other markets within the Chinese states equity markets. *Multinational Finance Journal, 12(1/2),* 105–126.