



ADVISOR EDUCATION
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INTERNATIONAL EQUITIES – The New Market Leaders?

Given the headline, one might guess that international equity markets had a stellar year -- not so. International equity markets posted another disappointing year in both absolute and relative terms compared to the U.S. market. While it is interesting to parse the year that was, ultimately we are more concerned with helping investors maximize future risk-adjusted returns.

In our last white paper “Why Invest Internationally Now” [June 2018], our main themes included the historic gap in relative performance and valuations and the potential for ‘reversion to the mean’. With the poor showing of international markets last year, some were quick to point out the apparent poor timing of the piece.

Not So Fast, Mon Amie!

While full year 2018 numbers were dreadful, actual performance since our last writing tells a different story. In fact, international markets actually outperformed the U.S. over the last half of 2018.

What is somewhat surprising is international’s 850+ basis points of outperformance in the final quarter of the year (see following chart). That is an extra 8.5% return for international investors.

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5-Month Total Return



Source: Bloomberg. Index performance is not indicative of the Funds' performance. Past performance does not guarantee future results.

We realize less negative performance is often cold comfort. Losing less, psychologically, does not invoke the same “pump your fist” type feeling as making more, even if it is a positive 8.5% relative performance gap. As shareholders ourselves, we certainly get it.

With the recent improvement in international equity performance, we do not write to toot our horn, as short-term battles are unpredictable and market leadership can quickly change, but to update investors with our current perspective. It is not necessary at this point to parse the litany of reasons to allocate a portion of one’s assets to international equities. This piece addresses the latest question from investors:

Did we miss the opportunity to increase exposure to international markets?

International Markets -- The New Leaders?

We were asked recently whether the recent outperformance suggested that international markets had finally turned and were the place to be in 2019. If only it were so easy. We believe the historically-large valuation discrepancy likely

muted the downside impact to international markets during the recent spike in volatility. However, one quarter of relative outperformance has not erased a performance gap that has been years in the making.

The following chart compares the performance of the Russell Global Developed ex-US Index to the Russell 2000 Index (U.S. stocks) over the past 10 years. The chart clearly shows the U.S. index outperforming, but with the gap narrowing significantly during the latter part of 2018. We do not claim any aptitude in calling market tops, bottoms or turns, and suggest one look to their favorite chart shaman for confirmatory signals.

Unfortunately, the answer to the investors’ question is unknowable, despite the conviction one can hear from the prognosticators on financial television, and does not provide much insight. Interestingly, however, the research is quite clear:

- Market timing in the shorter term is nearly impossible, but...
- Long-term performance (5+ years) can be improved using certain models.

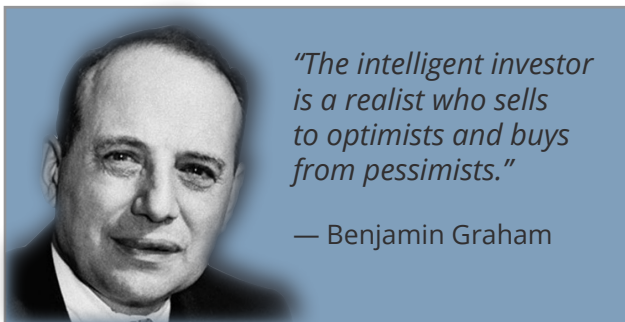
10-Year Total Return



Source: Bloomberg. Index performance is not indicative of the Funds' performance. Past performance does not guarantee future results.

The Single Greatest Predictor Of Future Stock Returns

We imagine there are a few who might think to groan about a reference to “long-term”, especially in this environment with headlines dominated by the praises of algorithmic sector Alpha or other Greek letter capture, risk parity, or volatility positioning strategies, as well as the renewed prominence of technical (chart) trading.



Benjamin Graham, noted value investor, likened short-term markets to a popularity contest -- “In the short run, the market is a voting machine, but in the long run it’s a weighing machine.” The research is clear -- investment horizon or duration matters in how one approaches markets.

We are investors, not traders, which to us means we look at both the return potential of an investment and weigh its risks over a specific time horizon. It is similar to considering a loan to Cousin Eddy: How much am I loaning? What is the duration of the loan? How much money could I make in return? What is his likely ability to pay me back? What other risks do I need to consider (i.e. family relationships)? What other investment opportunities am I forgoing by investing in Eddy?

Through this lens, we turn to one of the “Single Greatest Predictor(s) of Future Stock Returns” to help inform our opinion of international equity markets’ relative prospects.

Over the last few years, there have been more than a few studies proclaiming to have identified the “single greatest predictor” of future stock returns. We have reviewed many of these models, and while the headlines are mostly tongue in cheek, most have relatively robust R²s (correlation coefficients), suggesting a good fit to the historical data from a long-term perspective. However, as reminder: statistics can be deceiving and correlation is not necessarily causation. No matter the historical robustness, the models may not hold-up in the future. In investment terms, past performance may not be indicative of future results.

We encourage reading the available literature, including Alger's succinct study as well as Philosophical Economics' discussion of the theory of its supply / demand driven model. It would be interesting, should the data become available, to use Philosophical Economics' theory applied to the relative performance of international equity markets. Most research, however, has focused U.S. market performance, given its size and homogeneity of data -- data across international geographies is not uniform, which makes global information gathering and comparison challenging.



For our efforts we turn to Nobel Prize winner Robert Shiller's research on his Cyclically Adjusted Price-Earnings (CAPE) Ratio, one of the most cited and critiqued research studies available. In short, his research indicates CAPE has proven a decent predictor of long-term future market returns. Generally, the higher the CAPE ratio, the lower the expected future performance of equity markets.

Shiller's work, as with most, predominantly focused on U.S. markets. We were fortunate to discover that a German firm had taken Shiller's CAPE research and applied it across global markets to test its veracity.

StarCapital Aktiengesellschaft Study

Wanting a little more insight into international markets than provided by U.S.-based authors, we turned to research conducted by StarCapital Aktiengesellschaft (AG), an investment research firm based in Germany and Switzerland.

StarCapital AG conducted a study in 2014 (updated in 2016) using CAPE as an approach to estimating future stock market returns for various countries across the globe. StarCapital's work

showed that Shiller's CAPE analysis was applicable across every international market they reviewed.

While the first chart on the following page is cumbersome, it clearly shows a lower CAPE ratio increases subsequent returns over a long time horizon similarly across all markets [with blue boxes indicative of higher relative returns, orange lower]. The lower the CAPE, the higher the return, is consistent across markets and CAPE tranches.

Aktiengesellschaft (abbreviated AG) is a German word for a corporation limited by share ownership whose shares may be traded on a stock market; a joint-stock company.

The next chart shows forward returns by CAPE size are relatively consistent across countries as well.

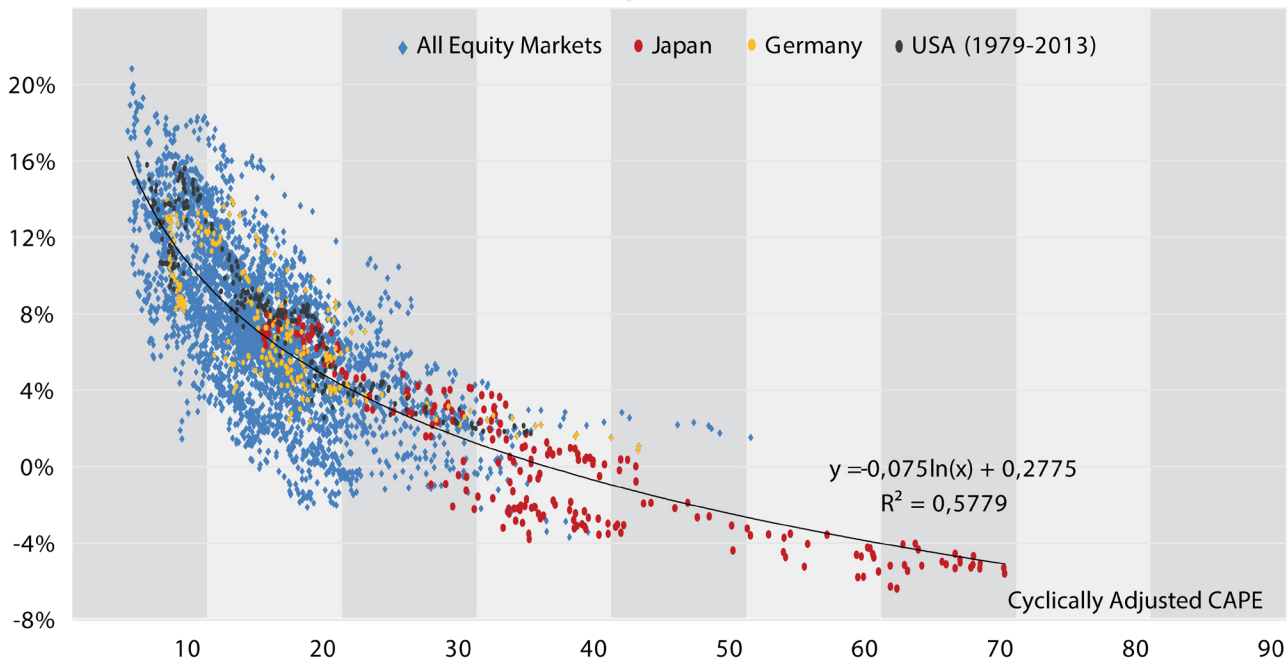
While the correlations above may suggest wide standard deviations and dispersion, it is useful to remember this graph represents all markets, each with different dynamics, such that for any given CAPE, future returns can vary country-to-country. One can see, using the color groupings, that correlation increases when examining the dynamics of a single country.

CAPE vs. Real Returns of the 15 Following Years

	CAPE ∅	0 - 8		8 - 12		12 - 16		16 - 20		20 - 24		24 - 28		28 - 32		>32									
		min 25%	Med	max 75%	min 25%	Med	max 75%	min 25%	Med	max 75%	min 25%	Med	max 75%	min 25%	Med	max 75%	min 25%	Med	max 75%						
Australia	16,5	11% 12%	11,9%	12% 12%	8% 10%	10,1%	12% 6%	7% 9%	8,2%	12% 4%	5% 8%	4% 5%	5,4%	6% 3%	3% 3%	3,2%	3% 3%								
Belgium	14,7	15% 16%	16,9%	18% 17%	13% 14%	17,1%	18% 18%	0% 3%	9,4%	17% 11%	0% 2%	13% 10%	0% 1%	5,5%	9% 6%	0% 0%	0,0%	0% 0%	-1% -1%	-1,0%	-1% -1%				
Canada	19,6	9% 9%	9,4%	11% 10%	5% 7%	8,0%	11% 9%	2% 6%	7,0%	11% 9%	4% 7%	6% 7%	8,1%	9% 8%	6% 6%	6,4%	8% 7%	4% 5%	5,1%	6% 5%	4% 4%	4,3%	4% 4%		
France	19,9	13% 13%	14,0%	16% 15%	13% 14%	14,1%	16% 15%	6% 14%	15,2%	16% 16%	3% 6%	7,3%	11% 9%	2% 5%	6,3%	13% 7%	2% 3%	6,6%	11% 9%	2% 3%	6,1%	9% 8%	1% 1%	1,6%	2% 2%
Germany	18,2	13% 13%	13,1%	14% 14%	6% 9%	11,2%	13% 12%	4% 8%	8,6%	14% 12%	2% 5%	5,9%	11% 7%	3% 4%	5,6%	10% 6%	3% 4%	3,7%	7% 4%	2% 3%	3,1%	3% 3%	1% 2%	2,2%	3% 3%
Hong Kong	18,6				9% 9%	9,9%	11% 10%	7% 8%	9,1%	10% 10%	4% 6%	7,0%	10% 9%	3% 5%	5,9%	10% 7%	1% 2%	2,0%	4% 4%	1% 1%	0,7%	1% 0%	0% 0%	0,4%	0% 0%
Italy	23,0									1% 3%	3,1%	4% 4%	0% 2%	1,0%	3% 2%	-1% -1%	-0,5%	0% 0%	-1% -1%	-1,1%	-1% -1%	-4% -3%	-2,9%	-1% -2%	
Japan	39,2						7% 7%	6,8%	7% 7%	6% 7%	7,2%	8% 5%	5% 5%	5,7%	7% 6%	3% 3%	3,6%	5% 4%	-2% 2%	2,9%	4% 4%	-6% -4%	-2,2%	4% 0%	
Netherlands	12,4	14% 15%	16,4%	21% 18%	7% 8%	10,0%	16% 15%	2% 5%	5,6%	10% 7%	2% 3%	4,2%	5% 2%	1,7%	2% 1%	0% 1%	0,8%	1% 0%	0% 0%	0,4%	1% 1%	-1% 0%	-0,3%	0% 0%	
Norway	14,4	12% 13%	13,4%	14% 14%	3% 6%	9,4%	14% 11%	3% 6%	6,8%	12% 8%	1% 4%	5,4%	8% 5%	7% 6%	6,3%	7% 5%	4% 5%	5,0%	6% 5%	4% 4%	4,4%	4% 4%			
Singapore	22,4				7% 8%	7,7%	9% 8%	6% 7%	7,4%	8% 8%	3% 5%	5,2%	8% 7%	2% 3%	4,1%	8% 7%	2% 3%	4,5%	8% 6%	-1% 2%	2,7%	4% 3%	0% 0%	1,9%	3% 3%
Spain	16,9				10% 12%	12,5%	15% 14%	6% 8%	9,9%	13% 11%	4% 5%	7,6%	9% 9%	1% 2%	2,6%	3% 3%	2% 2%	2,1%	3% 2%	1% 1%	1,5%	2% 2%	0% 0%	0,1%	0% 0%
Switzerland	18,8	8% 11%	12,2%	16% 14%	8% 10%	14,3%	16% 15%	9% 10%	11,9%	14% 13%	7% 9%	9,6%	13% 11%	4% 6%	6,7%	8% 7%	4% 5%	5,1%	6% 4%	4% 4%	4,0%	4% 4%	2% 2%	2,5%	4% 3%
UK	15,3	11% 12%	12,3%	14% 13%	11% 12%	12,6%	14% 13%	4% 6%	7,2%	11% 8%	2% 3%	4,2%	7% 5%	2% 2%	2,3%	3% 2%	2% 2%	1,8%	2% 2%						
S&P 500*	16,5	6% 8%	10,1%	15% 13%	1% 8%	10,2%	16% 13%	1% 4%	6,8%	13% 9%	-2% 3%	5,4%	11% 7%	-2% 0%	2,0%	8% 4%	0% 1%	3,0%	4% 4%	0% 0%	2,3%	3% 3%	-1% -2%	2,0%	3% 2%
All Countries	17,5	6% 11%	13,1%	21% 15%	1% 8%	10,6%	18% 13%	0% 6%	7,5%	17% 10%	-2% 4%	5,9%	15% 8%	-2% 2%	4,2%	13% 6%	-1% 3%	4,2%	11% 6%	-2% 1%	2,8%	9% 4%	-6% -3%	0,0%	4% 2%

All returns inflation-adjusted, in local currency, incl. dividend income and annualized. The starting date is 1979 for non-US countries and 1881 for the US. The last 15-year period taken into account encompasses the years 1998-2013. The average CAPE corresponds to the arithmetical mean over the review period, e.g. from 1881-2013 in the US market. The min and max columns represent the minimum and maximum values observed in the relevant country, i.e. the 25%/75% quantiles of the real 15 year returns (med = median). Source: StarCapital AG; S&P 500: Robert J. Shiller; other countries: Worldscope, Thomson Reuters.

CAPE vs. Real Returns of the 15 Following Years

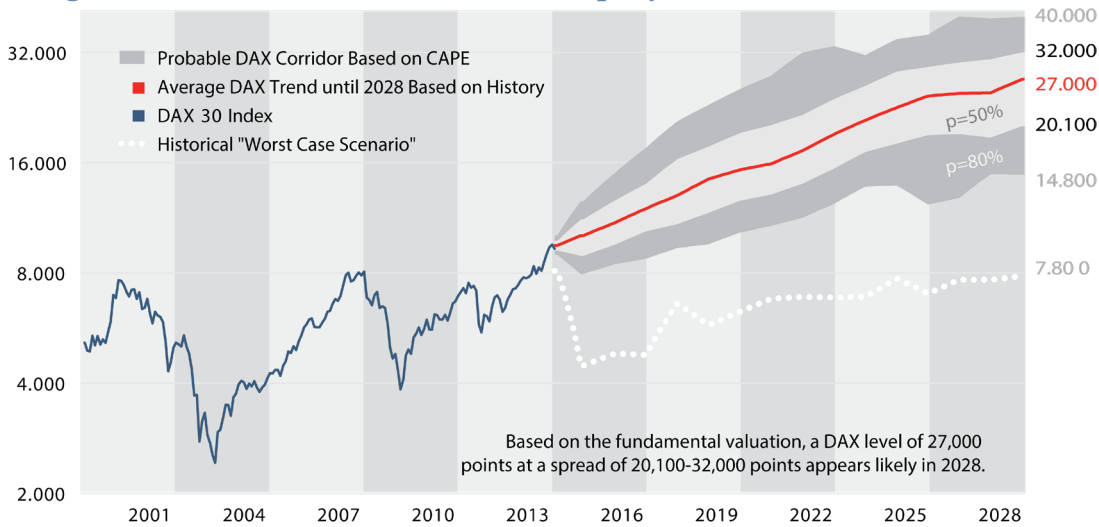


Connection between the CAPE and the returns of the 15 following years in the period 1881-2013 (US) and 1979-2013 (other markets). The USA, Japan and Germany are highlighted as examples in a single period 1979-2013. All returns inflation-adjusted, in local currency, incl. dividend income and annualized. Source: StarCapital; S&P 500: Robert J. Shiller; other countries: Worldscope, Thomson Reuters.

Estimating Future Relative Performance

As of the end of November 2018, StarCapital produced updated graphs of the long-term return potential for the German and U.S. stock markets that illustrate how we might compare prospects across markets and geographies. In the charts below, the red lines represent the mean estimate of future stock market performance in the two countries using both CAPE and price-to-book ratios. The white band represents the middle 80% of their estimate of the potential likely range of outcomes, with the gray area representing the broadest possible dispersion from their models.

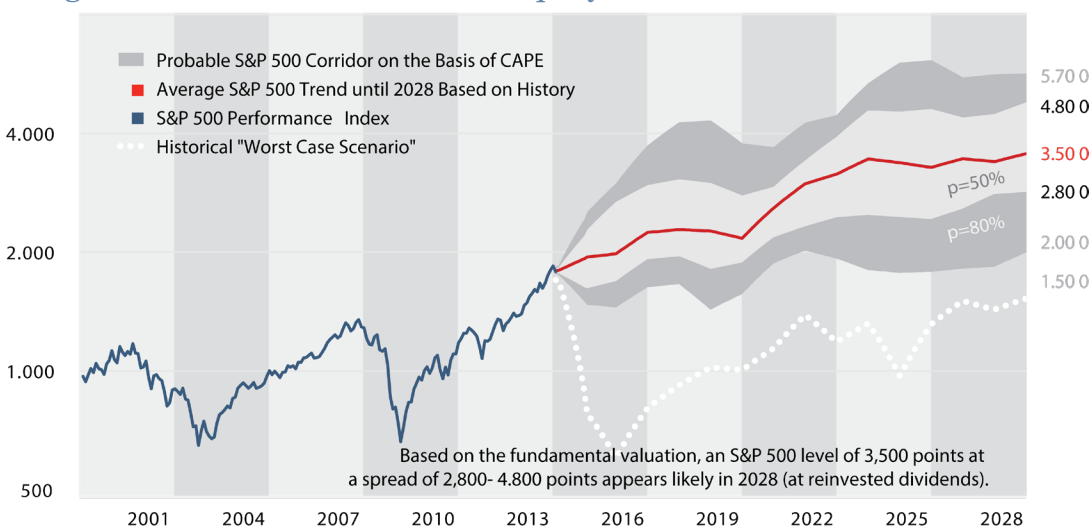
Long-Term Potential of the German Equity Market



The German equity market is valued at a CAPE of 17.3. The average sequential returns have been modeled over 1 to 15 years which followed comparable CAPE valuations worldwide. Inflation of 1% and dividend reinvestment were assumed. The "worst case scenario" corresponds to the lowest sequential return following the respective comparable valuation.

Source: StarCapital

Long-Term Potential of the U.S. Equity Market



The American equity market is currently valued at a CAPE of 24.6. The average sequential returns have been modeled over 1 to 15 years which followed comparable CAPE valuations worldwide. Inflation of 1% and dividend reinvestment were assumed. The "worst case scenario" corresponds in each case to the lowest sequential return following in each case a comparable valuation.

Source: StarCapital

It is obvious from the previous graphs that the StarCapital CAPE model suggests the prospects for the German stock market appear to be more robust than that of the U.S. over the next 15 years. However, that is one market comparison from the end of November.

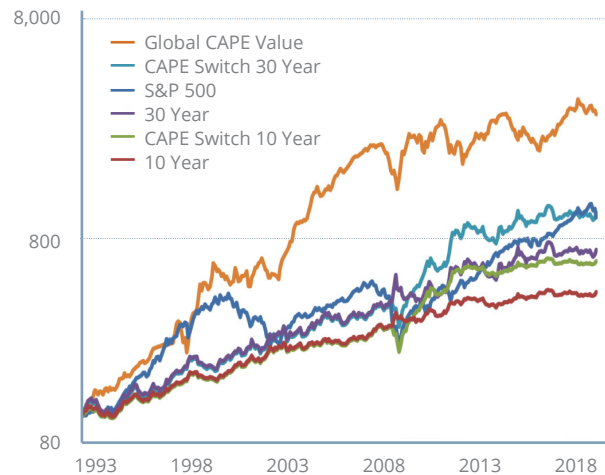
Using the most recent data from December 31, 2018 (presented below), one can compare explicit point estimates of average annualized return potential for each stock market on a country-by-country basis, using the CAPE and Price-to-Book Value models.

Country	CAPE	CAGR Return Forecast	P/B	CAGR Return Forecast
Spain	12.3	9.4%	1.3	9.3%
Singapore	12.8	9.1%	1.0	11.3%
Emerging Markets	14.5	8.2%	1.6	8.0%
United Kingdom	14.6	8.1%	1.6	8.3%
Norway	15.0	8.0%	1.7	7.8%
Hong Kong	15.1	7.9%	1.5	8.7%
Italy	15.8	7.6%	1.1	10.5%
Germany	16.4	7.3%	1.5	8.7%
Developed Europe	16.5	7.3%	1.6	8.1%
Australia	17.3	6.9%	1.9	7.1%
France	18.6	6.4%	1.6	8.2%
Sweden	18.9	6.3%	1.9	6.8%
Canada	19.1	6.2%	1.6	8.1%
Belgium	20.7	5.7%	1.5	8.5%
World AC	21.1	5.5%	1.9	7.1%
Netherlands	21.6	5.4%	1.7	7.7%
Developed Markets	22.2	5.2%	1.9	6.9%
Japan	22.4	5.1%	1.1	10.5%
Switzerland	22.9	5.0%	2.3	5.5%
United States	26.8	3.8%	2.9	4.0%
Denmark	30.0	3.0%	2.8	4.2%

The table shows the valuation ratios and the corresponding performance expectations (local currency, real returns including dividends) over the next 10-15 years for different countries. The underlying methodology and data is based on the research paper "Predicting Stock Market Returns Using the Shiller-CAPE: An Improvement Towards Traditional Value Indicators?" [2016]. Source: StarCapital.

In the table, the countries are ranked from highest to lowest average return potential based on CAPE. We have highlighted some of the more interesting markets from a long-term return potential perspective. Spain, the U.K., and emerging markets generally appear to offer significantly better relative long-term prospects. Also note that the U.S. equity market's prospects from this analysis appear relatively muted on a comparative basis.

Interestingly, Meb Faber of Cambria Investments calculated that if you had invested in the individual markets with the lowest quartile (lowest 25%) CAPE ratio, one would have crushed the S&P 500 between 1993 and 2018 (orange line) though it appears as if shorter-term volatility increased. Note that Faber had used specific switching dynamics which we were unable to duplicate precisely.



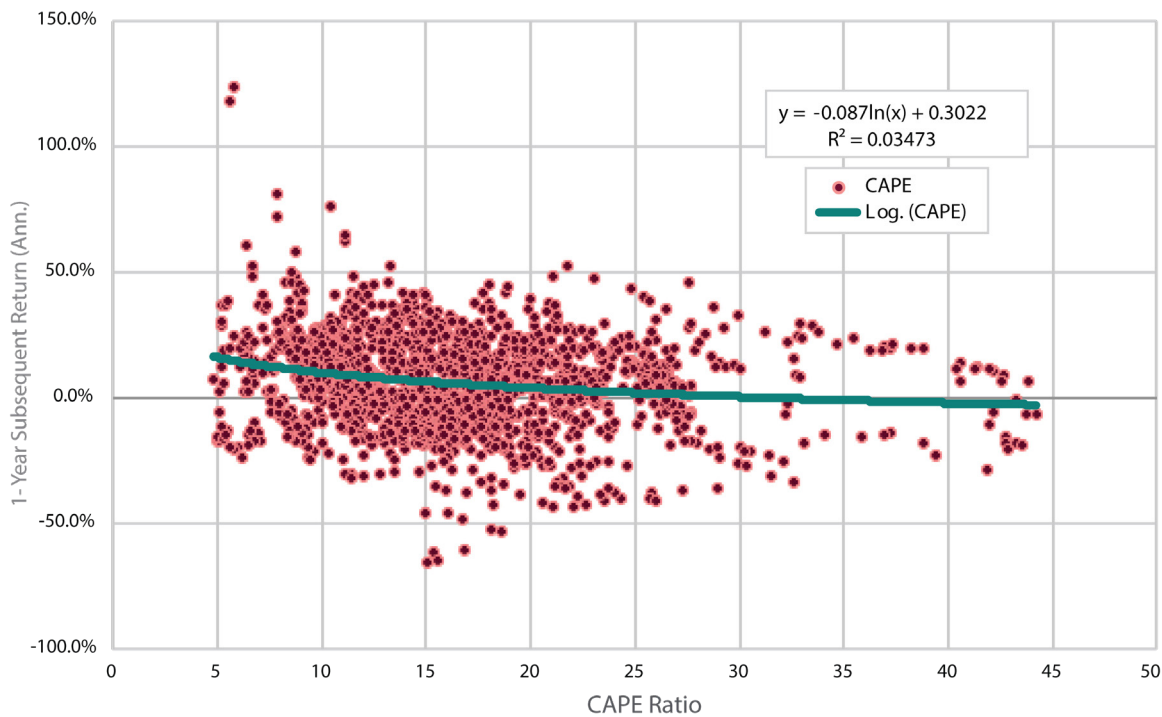
Source: Cambria Investment Management.

Further Nod To The Wise

We have stressed that while these models have strong correlations to long-term performance, past performance will likely not be indicative of future results. Shorter-term markets are driven as much by popularity, trend following, or greed and fear. The shorter the duration of future returns analyzed, the worse the fit of the data... suggesting these models have little near-term predictive power.

By way of example, the following chart is from Robert Shiller’s work outlining the value of the CAPE model to 1-year forward performance. The dot plot with an R^2 of 0.035 indicates little, if any, explanatory power from the model on shorter time horizons.

CAPE vs 1-Year Subsequent U.S. Equity Returns



Source: Brandes Institute, as of 6/30/18. U.S. equity represented by the S&P Composite Price Index. Data includes returns from January 1881 to June 2017.

Should We Care About These Models?

Does anyone care what these models suggest about future performance? First, none of the models we reviewed are perfect; they are only indicative to those that have longer-term time horizons. We do not use these models to help construct the portfolio's individual country weightings, as markets can stay out of sync with their output far longer than annual performance watchers might tolerate.

However, we use them to help frame and inform our thoughts on the long-term prospects of different regions. We are inherently bottoms-up fundamental stock pickers, so we do not construct our portfolio through a country allocation framework. We use a similar long-term fundamental approach, incorporating our assessment of shorter and longer-term prospective returns for each portfolio company as part of our risk and returns based relative ranking model.

Others use similar analyses to inform their allocation decisions. In November, Greg Davis, CIO of Vanguard, said they expect international markets to outperform the U.S. over the next 10 years, with international annualized returns in the 5-7% range and U.S. markets returning in the 4% range. Vanguard apparently does not believe it is only theoretical. In late January of 2019, Vanguard announced it is increasing its weight to international equities from 30% to 40% in their Target Retirement and LifeStrategy products with assets of \$224 billion.

Conclusions

Whether this type of long-term model ultimately proves beneficial remains an open question. To our way of thinking, valuations do matter over long periods of time. Warren Buffet has posited that in most instances, a stock's selling price will not be the major driver of one's return. "The price you pay will more often determine the return you can expect to receive on one's investment. The lower the price, the greater the return."

Are international stock markets going to continue their recent leadership? Predicting the future has been alchemical and to which we profess no proficiency. The results from our analysis suggest U.S. markets will be a relative laggard compared to international markets in the years to come. As Graham pointed out, in the long term, markets are more of a weighing machine than a polling place. We use the data outlined in this paper not to guarantee success, but to better assess the risks and opportunities of investment options in an effort to increase the odds of better longer-term performance.

Despite the relative long-term prospects for international markets, current economic data does indicate the U.S. continues to outpace the rest of the globe. We believe international economies will continue to lag that of the U.S. until a trade agreement is codified between the U.S. and China and BREXIT uncertainty begins to abate.

Improvement in the global economic data is likely necessary for international markets to have the potential for sustainable leadership role. That the CAPE models are in agreement with our long-term assessment is confirmatory to our view. We believe those investors with a longer-term investment horizon have not missed the opportunity in international equities, though in the short-term, performance is likely to remain mixed. Even so, we continue to believe international markets are poised for better relative performance over the longer term. ▲

Bill Kornitzer, CFA, has been the portfolio manager of the Buffalo International Fund since the Fund's inception in 2007 and has been with the Buffalo Funds since 2004. He has 26 years of professional investment experience. Previously Bill was with USAA, Ernst & Young, and Arthur Andersen. At the Buffalo Funds, Bill works with equity portfolios and his focus areas include technology, financial services, telecommunications, and food and beverage. Bill received a B.S. from Virginia Tech and an M.B.A. from Drexel University. He also holds the Chartered Financial Analyst designation.



INTERESTED IN MORE INFORMATION?

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DEFINITIONS & DISCLOSURES

Opinions expressed are subject to change, are not intended to be a forecast of future events, a guarantee of future results, nor investment advice.

The Cyclically Adjusted PE (CAPE) Ratio is a valuation measure that uses real earnings per share over a 10-year period to smooth out fluctuations in corporate profits that occur over different periods of a business cycle. A basis point is one hundredth of a percentage point. Alpha is a risk-adjusted measure of the so-called active return on an investment. It is the return in excess of the compensation for the risk. An alpha of 1 means the investment's return on investment over a selected period of time was 1% better than the market during that same period; an alpha of -1 means the investment underperformed the market. Risk parity is a portfolio allocation strategy using risk to determine allocations across various components of an investment portfolio. R² or R-squared is generally interpreted as the percentage of a fund or security's movements that can be explained by movements in a benchmark index. Price-to-book or P/B compares a firm's market to book value by dividing price per share by book value per share. Book value is the net asset value of a company calculated as total assets minus intangible assets and liabilities. Duration is a measure of the sensitivity of the price of a fixed income investment to a change in interest rates.

The Russell Global Developed ex-US Index is an unmanaged index that measures the performance of the global equity market based on all investable equity securities, excluding companies assigned to the United States. The Russell 2000 Index is an unmanaged index that consists of the smallest 2,000 securities in the Russell 3000 Index, representing approximately 10% of the Russell 3000 total market capitalization. The Russell 3000 Index is a market capitalization weighted equity index maintained by the Russell Investment Group that seeks to be a benchmark of the entire U.S. stock market, encompassing the 3,000 largest U.S.-traded stocks, in which the underlying companies are all incorporated in the U.S. The DAX (Deutscher Aktienindex (German stock index)) is a blue chip stock market index consisting of the 30 major German companies trading on the Frankfurt Stock Exchange. The S&P 500 is a capitalization weighted index of 500 large capitalization stocks which is designed to measure broad domestic securities markets. It is not possible to invest directly in an index.

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