

Vanguard®

Investing in emerging markets: Evaluating the allure of rapid economic growth

Vanguard research

April 2010

Executive summary. Emerging stock markets appeal to investors for several reasons, the most frequently cited being their rapid economic growth. The allure of emerging markets can be strong, as faster economic growth is typically associated with stronger earnings growth, which many investors associate with higher stock returns.

The intent of this paper is to caution long-term investors against making asset allocation decisions solely on the basis of expected economic growth. Our analysis shows that the average cross-country correlation between long-run GDP growth and long-run stock returns has been effectively *zero*. We show that this counterintuitive result holds across the major equity markets over the past 100 years, as well as across emerging and developed markets over the past several decades.

Authors

Joseph H. Davis, Ph.D.
Roger Aliaga-Díaz, Ph.D.
C. William Cole
Julieann Shanahan, CFA

We discuss how the long-term relationship between economic growth and stock returns is influenced by several factors, including the composition of—and capital claims on—a country's GDP growth, how a country's actual growth compares to prior market expectations, and, most importantly, the price investors pay for that expected growth at any given time. Looking back over the past ten years, emerging markets investors were rewarded for the risk they bore not because of high economic growth *per se*, but rather because of comparatively low equity valuations in the early 2000s coupled with consistently higher-than-expected economic growth throughout the period. As of year-end 2009, market valuations and consensus GDP growth expectations for emerging markets are higher than they were ten years ago.

Overall, this analysis does not invalidate the strategic case for allocating to emerging markets in a global equity portfolio. However, we caution investors from significantly overweighting emerging markets based solely on the widely held view that emerging economies will grow faster than developed markets because we believe the foundation for that argument is weak. A useful analogy is growth stocks, which have generally exhibited faster sales and earnings growth when compared to value stocks, yet have failed to outperform value stocks over long holding periods.

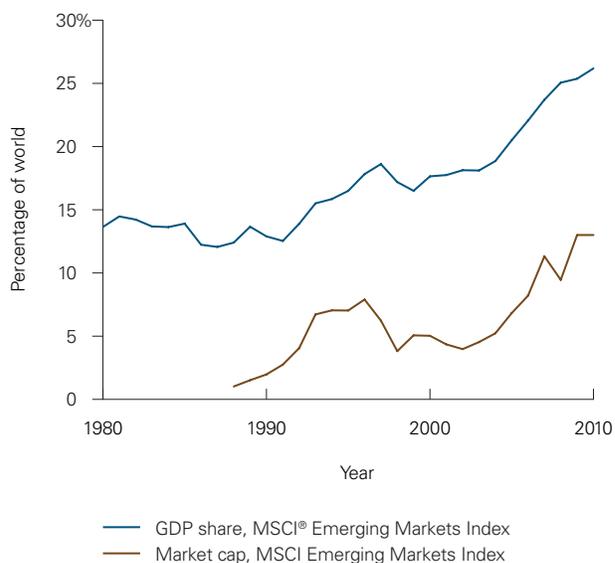
Introduction

The strength of emerging market cash flows observed over the last few years can be explained by a number of factors, including opportunity for global diversification, heady trailing returns, and the newfound ability of investors to access emerging markets through liquid, low-cost, indexed vehicles.¹ Despite the numerous factors impacting emerging market stock returns, investors increasingly cite the rapid growth of emerging market economies as the primary motivation for boosting their strategic allocation to emerging markets in their global equity portfolios.

To be sure, growth of emerging market economies over the past decade has been impressive, both on an absolute basis and relative to developed markets. As documented in previous Vanguard research, the BRIC economies of Brazil, Russia, India, and China, in particular, have quickly approached the United States in terms of their overall ability to drive world economic growth (Davis and Aliaga-Díaz, 2009). As shown in **Figure 1**, *investable* emerging market economies now account for more than 25% of world output,² yet their market capitalization represents less than 15% of a float-adjusted global equity portfolio. In the coming decades, most analysts expect both percentages to rise further, as illustrated by Figure 1.

Figure 1. The source of the allure

Emerging markets as a percentage of world GDP and global market capitalization, 1980–2010



Sources: Vanguard Investment Strategy Group calculations based on data from the International Monetary Fund (IMF), MSCI, and Thomson Financial Datastream. Market-capitalization weights represent percentages of the MSCI All Country World Index. GDP data for 2010 are IMF estimates.

Notes on risk: Investments are subject to risk. Foreign investing involves additional risks including currency fluctuations and political uncertainty. Stocks of companies in emerging markets are generally more risky than stocks of companies in developed countries. Diversification does not ensure a profit or protect against a loss in a declining market. Past performance is not a guarantee of future results. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.

Vanguard ETFs® are not redeemable with an Applicant Fund other than in Creation Unit aggregations. Instead, investors must buy or sell Vanguard ETF® Shares in the secondary market with the assistance of a stockbroker. In doing so, the investor will incur brokerage commissions and may pay more than net asset value when buying and receive less than net asset value when selling.

¹ For instance, Vanguard Emerging Markets ETF (ticker symbol VWO), which seeks to track the MSCI Emerging Markets Index, charges an expense ratio of 0.27% (as reported in the prospectus dated February 26, 2010).

² Unless otherwise noted, the term “emerging markets” in this paper refers to the group of countries that are currently represented in the MSCI Emerging Markets Index.

Given that the trends in Figure 1 reflect the consistent economic outperformance of emerging economies, some investors are reassessing the primary role of emerging markets in their global portfolio from one of diversifying their equity holdings to one of generating higher expected returns relative to developed markets. Over the ten years ended December 31, 2009, the MSCI Emerging Markets Index has posted an annualized return of 10.2%, compared with an average annual return of -1.2% for the MSCI USA Index. Going forward, investors may wonder why they would not significantly overweight emerging markets in their global equity portfolio when emerging economies are widely expected to grow faster than developed ones.

The intent of this paper is to caution investors against making asset allocation decisions solely on the basis of expected economic growth. We begin by analyzing the long-run correlation between economic growth and stock returns. We conclude by deconstructing the components of emerging and developed markets returns.

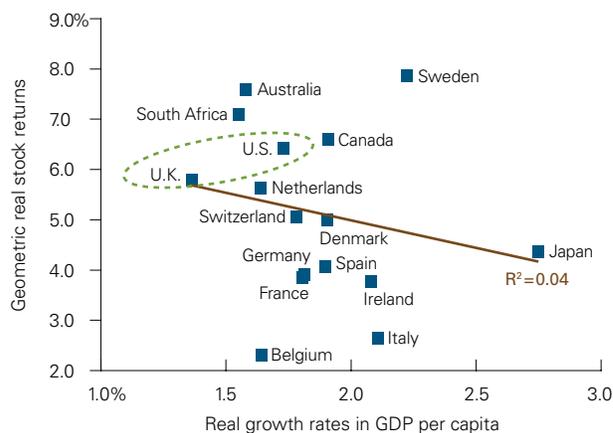
Economic growth and stock returns: A weak long-run correlation across countries

It is not unreasonable for an investor to associate rapid economic growth with strong stock market returns. Ibbotson and Chen (2003), among others, have demonstrated that the growth in U.S. corporate earnings over time has paralleled the growth of overall U.S. economic productivity. As is well known, earnings growth is a fundamental building block when constructing estimates of expected stock returns. Hypothetically, if country A's GDP is growing at 9% annually and country B's is growing at 3% annually, isn't it reasonable to expect the public companies in economy A to experience higher earnings growth and subsequently higher returns on equity when compared to companies in economy B?

We looked to historical long-run returns for support of this intuition, but in fact, **Figure 2** reveals a striking result: Since 1900, the correlation between long-run

Figure 2. A weak average link between GDP growth and stock returns over the long run

Scatterplot across 16 major markets; data from 1900 through 2009



Sources: Vanguard Investment Strategy Group calculations based on data from Dimson, Marsh, and Staunton (2003); International Monetary Fund; MSCI; Thomson Financial Datastream; and the World Bank.

economic growth (as measured by real GDP growth per capita, a standard proxy for a country's productivity growth) and long-run stock returns across 16 major markets has been effectively zero.³ The slope of the line in Figure 2 is actually slightly negative.

The circled region in Figure 2 highlights an equally intriguing outcome. The returns for U.K. equities and U.S. equities were nearly identical over our 1900–2009 sample, despite the fact that the United Kingdom ceded its preeminent position as the world's leading economic, financial, and military power to the United States over the course of the 20th century.⁴ During this time, the growth rate of U.S. economic productivity outpaced that of British real GDP growth per capita handily—on the order of 1 percentage point per year. Yet the local returns on the U.S. and U.K. stock markets were virtually identical for American and British investors, respectively (Dimson et al, 2003).

3 The result in Figure 2 was first documented in the 2002 book *Triumph of the Optimists: 101 Years of Global Investment Returns* by Elroy Dimson, Paul Marsh, and Mike Staunton of the London Business School. We have updated the data in that study through year-end 2009.

4 The British pound also lost its status as the leading international reserve currency to the U.S. dollar over this time frame.

A potential criticism of Figure 2 is that the near-zero correlation may be distorted by a type of survivorship or selection bias. Figure 2 only includes markets that are now developed and may be more homogenous than, say, a comparison that would include emerging markets. To address this potential criticism, **Figure 3** examines the same relationship since 1988 and includes emerging market economies.

Although the time period is limited because of data constraints, Figure 3 confirms the previous result: The correlation between economic growth and stock returns has been effectively zero across individual emerging markets since the late 1980s.⁵ When developed markets are included, the trend line in Figure 3 is again slightly negative, a result consistent with Ritter (2004).

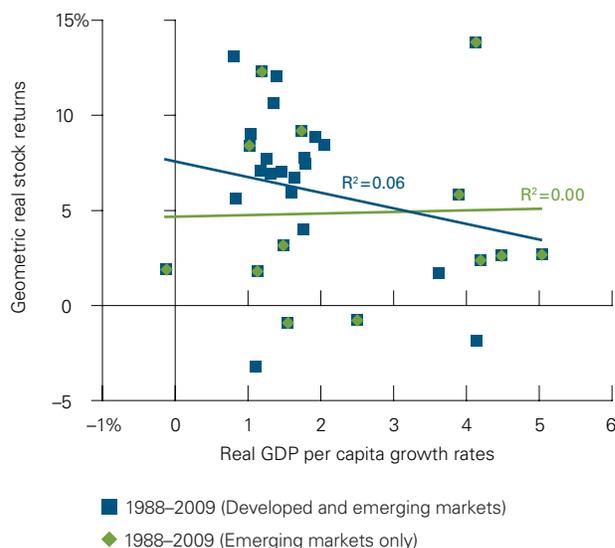
Reconciling zero correlation with strong emerging market returns

Over the five years ended December 31, 2009, the MSCI Emerging Markets Index produced an average annual total return of 14.9% versus a paltry 0.7% average annual return for the MSCI USA Index. If the long-run relationship between economic growth and stock returns is weak across countries, then how can we explain the strong relative performance of emerging markets versus more developed stock markets over this period?

The answer to this question is *not* that economic growth is irrelevant for stock market investors. Rather, it is in understanding that the weak long-term relationship that we observed in Figures 2 and 3 between average economic growth rates and average stock returns across countries can be strongly influenced by three other key factors:

Figure 3. A weak long-run relationship with emerging markets, too

Overlapping scatterplots between economic growth and stock returns for 32 countries, 1988–2009



Sources: Vanguard Investment Strategy Group calculations based on data from Ritter (2004), International Monetary Fund, MSCI, Thomson Financial Datastream, and the World Bank. The sample includes the 19 developed markets and 13 emerging markets for which data is available back to 1988.

1. *Growth surprises*, or how a country's actual GDP growth compares to the prior expectations for growth priced in by financial markets.
2. *Valuations*, or the price investors pay for a market's expected growth at any given time.
3. *Globalization*, or how the composition of a country's GDP growth relates to the earnings growth of the country's domestic public companies.

⁵ For details on the data limitations of emerging markets, please see Vanguard's related white paper, *International Equity Investing: Investing in Emerging Markets* (Tokat, 2006).

As we will explain, emerging market investors generally benefitted over the last five years not from high economic growth *per se*, but from the first and second factors above, namely equity valuations in the early 2000s that were low when compared to developed markets, and higher-than-expected economic growth during much of the period. In the future, valuations and globalization should be important considerations in how equity investors form strategic global equity portfolios.

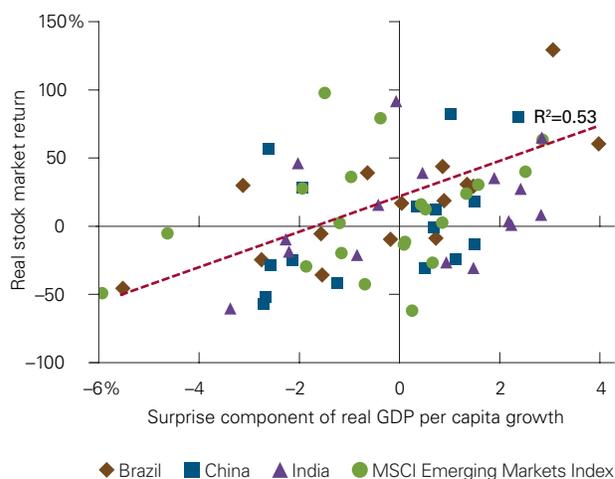
Factor #1: Economic surprises matter, not what is already expected.

A critical distinction must be made between expected economic growth and unexpected “surprises” to consensus expectations. As Davis (2008) discusses in detail, it is not consensus expectations, but rather the surprises in actual economic growth based on these expectations that can have immediate and sometimes profound influences on stock returns in any market.⁶ For example, if the consensus view had been that the Chinese economy would grow at 9% per year, and actual growth was reported at 12%, the 3% difference would represent a surprise that may influence short- and medium-run stock returns.

Figure 4 reveals that economic surprises can be an important factor in short-run fluctuations in emerging markets stock returns. Indeed, the correlation of unexpected changes in annual GDP growth with annual emerging market returns is a statistically significant 53%. Put another way, there is a strong link between the year-to-year volatility observed in emerging markets stock returns and economic growth surprises. This is true for emerging markets as a whole, as well as for individual emerging markets such as Brazil, India, and China.⁷

Figure 4. Economic growth surprises matter in the short run

Scatterplot between annual stock returns and unexpected changes in GDP growth, 1995–2009



Sources: Vanguard Investment Strategy Group calculations based on data from International Monetary Fund, MSCI, Thomson Financial Datastream, and the World Bank. The “surprise” component in real GDP growth was calculated as the difference between the following year’s GDP growth rate less the expected growth rate, which we estimated by using the average trailing GDP growth rate of the three previous years.

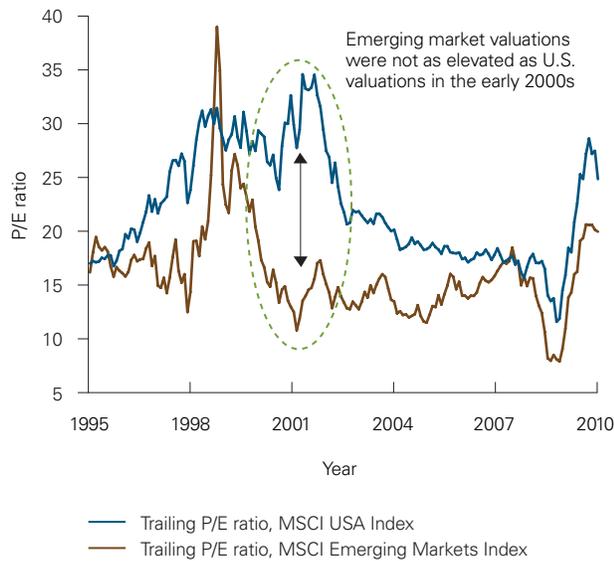
Notably, most of the data points in the upper right quadrant in Figure 4 represent economic surprises that occurred between 2003 and 2007, a period when emerging market economies outperformed consensus growth expectations and as a result, realized higher stock market returns.

6 The paper examines the link between macroeconomic expectations (based on both professional forecaster surveys and financial market indicators) and the subsequent near-term performance of the U.S. stock market. The paper shows that the consensus view of future macroeconomic conditions has explained virtually none of the short-term volatility in stock returns over the past 40 years. This finding is consistent with the view of a stock market that is reasonably efficient (in that it tends to “price in” the mainstream macroeconomic outlook), that is forward-looking (as a leading indicator, it tends to anticipate economic shifts rather than lag them), and that can be quite volatile in the short run.

7 Of course, such “growth shocks” are quickly incorporated into current stock prices and so do not typically show up in the longer-term relationships between GDP growth and stock returns discussed in Figures 2 and 3. In this way, so-called “growth shocks” are effectively irrelevant for long-term equity investors.

Figure 5. Emerging market valuations were more modest than those for the U.S. a decade ago

Monthly trailing P/E ratios,
November 1995 through March 2010



Source: MSCI.

Factor #2: The price one pays for expected growth is critical.

Equity market valuations are arguably the most relevant and useful measure for estimating future market expectations.⁸ Figure 5 charts the trailing P/E ratios for both the U.S. market and the MSCI Emerging Markets Index since the mid-1990s.

While trailing P/E ratios in the U.S. markets were relatively high a decade ago, those same valuations for emerging market stocks were actually slightly below their average. Consequently, emerging market investors in the early 2000s paid a lower price

for expected earnings relative to those investing in developed equity markets, such as the United States. At the time, some investors were reluctant to allocate to emerging markets in the wake of various financial and political crises that had occurred in such countries in the late 1990s. Of course, those who chose to take the risk and invest in emerging markets were eventually compensated with higher realized returns.

Overall, the valuations that existed a decade ago are another critical factor in explaining the robust outperformance of emerging stock markets over developed markets during the last five years. Notably, valuation measures tend to eventually revert over the medium to long run.

Factor #3: Corporate profits in developed markets are increasingly earned abroad.

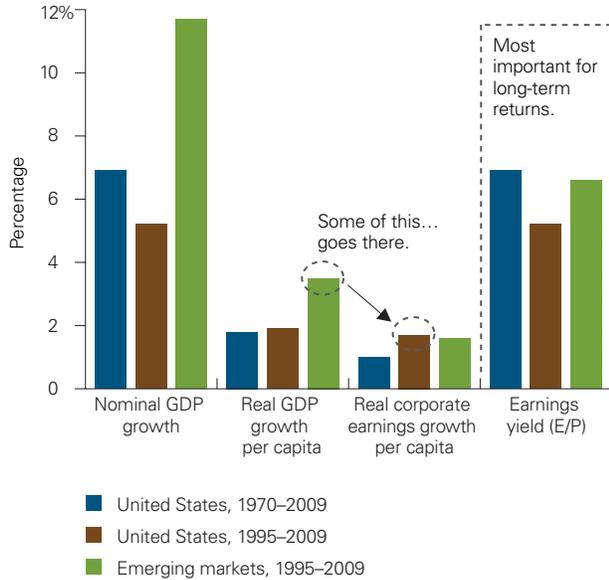
A third factor that helps to reconcile this observed disconnect is the composition of—and capital claims on—a country’s GDP growth. Figure 6, on page 8, is an important reminder that economic GDP growth can serve as a poor proxy for corporate earnings growth for any stock market in the event that (a) a growing share of its investment is funded from other countries, and (b) the share of foreign earnings earned by the market’s domestic corporations is meaningfully changing over time.

Figure 6 compares the average annual growth rate of GDP and corporate earnings for the United States and a basket of emerging market economies. Bar charts are shown for nominal and inflation-adjusted growth rates since 1995 (the earliest period that earnings data for all emerging markets in the MSCI Emerging Markets Index could be obtained). U.S. averages since 1970 are also shown for reference.

⁸ Davis, Aliaga-Díaz, and Ren (2009) provides for a full statistical analysis of how P/E ratios compare to other potential predictors of long-term stock returns.

Figure 6. Some growth metrics matter more than others

Average annual growth rates through December 31, 2009

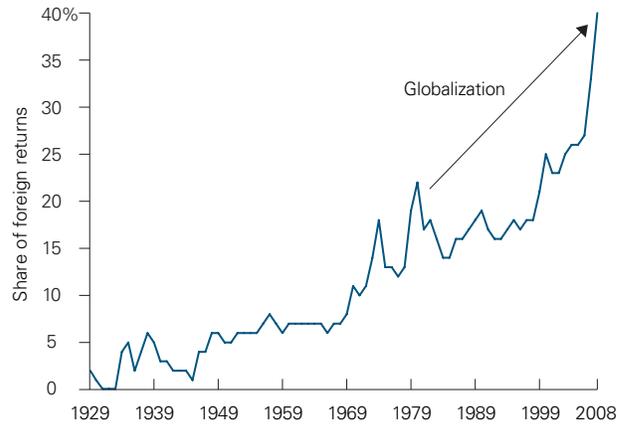


Sources: Vanguard Investment Strategy Group calculations based on data from the International Monetary Fund, MSCI, Thomson Financial Datastream, and the World Bank. The GDP data for the emerging markets were market-cap-weighted based on the MSCI Emerging Markets Index. Earnings data have been cyclically adjusted using an HP filter.

Figure 6 shows that inflation-adjusted corporate earnings growth in the emerging markets has tended to trail the growth rate in real GDP by approximately 2 percentage points per year, on average. In the United States, the growth rates have been more similar. A contributing reason for this is that a nontrivial fraction of the stellar GDP growth in emerging markets has actually been financed by foreign direct investment and other capital flows originating in developed markets.

Figure 7. For developed markets, home-country GDP is increasingly the wrong benchmark

Percentage of U.S. corporate earnings derived overseas, 1929–2008



Source: Vanguard Investment Strategy Group calculations based on data from the U.S. Bureau of Economic Analysis.

Figure 7 demonstrates that an increasing portion of U.S. corporate earnings are derived from overseas markets. By our calculations, the percentage of total U.S. corporate profits that are derived from direct investment income abroad has doubled over the past decade, from 20% in 1999 to 40% in 2008. Historically, about one third of these foreign earnings have come from direct U.S. investment in emerging markets (Bureau of Economic Analysis). In this way, multinational firms based in developed markets contribute to emerging market GDP growth, in return for higher corporate earnings.

**Looking ahead:
Implications for portfolio construction**

Taken together, Figures 6 and 7 have important implications for how investors construct forecasts of expected long-run stock returns in both emerging and developed markets. As corporate profits are increasingly tied to international markets, the traditional link between domestic economic growth and local market performance should be expected to weaken.

Going forward, global economic growth should prove a better proxy for the expected earnings growth of developed market economies. As illustrated in **Figure 8**, even expectations of a lower-growth U.S. economy in 2010 and beyond need not necessarily imply significantly lower U.S. corporate earnings growth if economies in the emerging markets and elsewhere continue to recover.

Moreover, equity market valuations are arguably the most relevant and useful measure for estimating future long-term market expectations (Davis, Aliaga-Díaz, and Ren, 2009). In particular, the earnings yield (or E/P, which is simply the inverse of the P/E ratio) is a good building block for real equity returns if markets are at normal conditions (i.e., barring any over- or undervaluations). Since P/E ratios tend to be mean-reverting, a long-term average of earnings yields gives an accurate measure of average real stock returns.

As Figure 6 illustrated, the average earnings yield for the emerging equity market has been closer to the average earnings yield observed in the United States. Indeed, the higher earnings growth in emerging markets has been more than offset by higher price level growth over the past ten years, which has translated to earnings yields similar to that of the United States over longer periods of time.

Figure 8. Decomposing U.S. earnings growth—history and projections

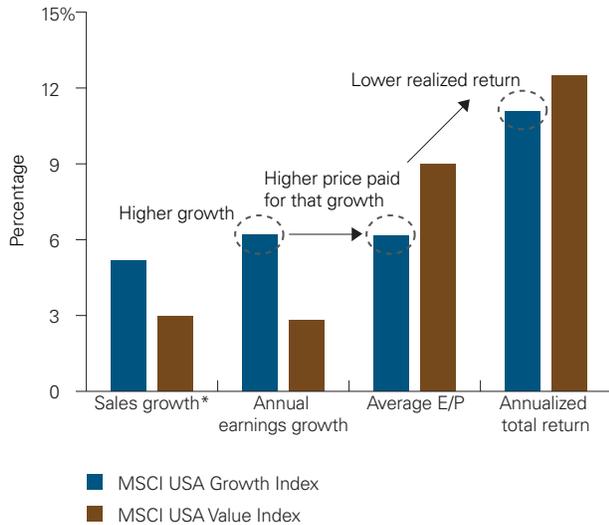
	U.S. earnings growth	U.S. nominal GDP growth	Share of foreign earnings	World ex-U.S. GDP growth
1929–1999	6.3%	6.6%	10%	–
2000–2009	6.5%*	4.4%	28%	8.7%
2010–2015 (forecast)	6.2%	5.0%	40%	7.9%

*Earnings growth is through 2008.

Sources: Vanguard Investment Strategy Group calculations based on data from the U.S. Bureau of Economic Analysis, Survey of Professional Forecasters (SPF) and IMF. Forecasts for U.S. are based on SPF and forecasts for world GDP growth are from the IMF *World Economic Outlook* database. U.S. earnings projection based on the share of foreign earnings for 2008 reported in Figure 7.

Figure 9. Growth stocks may serve as a useful corollary to emerging market investing

MSCI USA Growth Index versus MSCI USA Value Index, 1974–2009



*Sales growth taken from S&P benchmarks starting in August 1992. S&P was used for this data point because of MSCI data constraints.

Sources: MSCI, S&P, and Vanguard Investment Strategy Group.

While the data limitations on emerging market fundamentals are a hindrance in formulating expected long-run returns, a broad emerging markets index should not be expected to earn a significantly higher return premium over a broad developed markets index based on the trends observed to date in earnings yields. Of course, the returns that are actually realized in the years ahead will depend on how a number of economic, political, and other risk factors deviate from those expectations currently reflected in stock prices.

Growth stocks: A potentially useful analogy for the allure of emerging markets.

Regardless of recent short-term outperformance, the future market-cap weighting of emerging markets will likely rise in global equity indexes as more emerging market companies become public and as investor access to these securities markets increases. Understandably, the allure of emerging markets can be strong, as faster economic growth is typically associated with stronger earnings growth, which is thought to be associated with higher stock returns.

As these trends unfold, we caution investors not to significantly overweight emerging markets based simply on the widely held view that their economies will grow faster than those of developed markets because the foundation for that argument is weak. A useful analogy can be found in the comparison between the fundamentals of returns on a portfolio of U.S. growth stocks and U.S. value stocks. As shown in **Figure 9**, growth stocks, which have generally enjoyed faster sales and earnings growth when compared with value stocks, have failed to outperform value stocks over long holding periods. A key explanation for this disconnect has been that growth stocks, on average, have had lower earnings yields when compared to value stocks. That is, growth investors have paid more for one unit of expected growth than value investors have, all else being equal.

Overall, this analysis does not invalidate the strategic case for allocating a portion of a global equity portfolio to emerging markets. However, the future long-term return on emerging market investments—as with any investment—will depend largely on the relative price one initially pays.

References

- Davis, Joseph H., 2008. *Macroeconomic Expectations and the Stock Market: The Importance of a Longer-Term Perspective*. Valley Forge, Pa.: Vanguard Investment Counseling & Research, The Vanguard Group.
- Davis, Joseph H., and Roger Aliaga-Díaz, 2009. *The Global Recession and International Investing*. Valley Forge, Pa.: Vanguard Investment Counseling & Research, The Vanguard Group.
- Davis, Joseph H., Roger Aliaga-Díaz, and Liqian Ren, 2009. *What Does the Crisis of 2008 Imply for 2009 and Beyond?* Valley Forge, Pa.: Vanguard Investment Counseling & Research, The Vanguard Group.
- Dimson, Elroy, Paul Marsh, and Mike Staunton, 2002. *Triumph of the Optimists: 101 Years of Global Investment Returns*. Princeton: Princeton University Press.
- Dimson, Elroy, Paul Marsh, and Mike Staunton, 2003. *Global Investment Returns Yearbook 2003*. Amsterdam: ABN AMRO.
- Ibbotson, Roger G., and Peng Chen, 2003. Long-Run Stock Returns: Participating in the Real Economy. *Financial Analysts Journal* 59(1): 88–98.
- Philips, Christopher B., 2008. *International Equity: Considerations and Recommendations*. Valley Forge, Pa.: Vanguard Investment Counseling & Research, The Vanguard Group.
- Ritter, Jay, 2004. *Economic Growth and Stock Returns*. Working Paper, University of Florida.
- Tokat, Yesim, 2006. *International Equity Investing: Investing in Emerging Markets*. Valley Forge, Pa.: Vanguard Investment Counseling & Research, The Vanguard Group.

Key terms

- E/P.** Earnings-to-price ratio, often referred to as earnings yield. This ratio is calculated by dividing the earnings per share by the current market price of the stock. A relatively low E/P ratio signals stocks may be overpriced, and thus it may anticipate lower-than-average returns.
- P/E.** Price-to-earnings ratio, the inverse of the earnings yield (E/P).
- R-squared (R²).** The percentage of the total variation in the vertical axis variable that is explained by the horizontal axis variable. R-squared values range from 0 to 1. In a two-variable graph, a value of 0 means that there is no causal relationship between the movements of the horizontal axis and the vertical axis variables. An R-squared value of 1 means that the horizontal axis variable fully explains the movements of the vertical axis variable in a causal sense.



P.O. Box 2600
Valley Forge, PA 19482-2600

Connect with Vanguard® > www.vanguard.com
> global.vanguard.com (non-U.S. investors)

CFA® is a trademark owned by CFA Institute.

The funds or securities referred to herein are not sponsored, endorsed, or promoted by MSCI, and MSCI bears no liability with respect to any such funds or securities. For any such funds or securities, the prospectus or the Statement of Additional Information contains a more detailed description of the limited relationship MSCI has with The Vanguard Group and any related funds.

The information contained herein does not constitute an offer or solicitation and may not be treated as an offer or solicitation in any jurisdiction where such an offer or solicitation is against the law, or to anyone to whom it is unlawful to make such an offer or solicitation, or if the person making the offer or solicitation is not qualified to do so.

Only for Professional Investors as defined under MiFID (or Qualified Investors as defined in Switzerland by the SFA). Not to be given to retail investors.

This document is published by Vanguard Investment Strategy Group—a business unit of The Vanguard Group, Inc. It is for educational and general information purposes only and is not a recommendation to buy or sell investments. It should be noted that it is written in the context of the U.S. market and contains data and analysis that is specific to the United States. Vanguard's Investment Strategy Group publishes Vanguard's proprietary research on a variety of investment, economic and portfolio management issues. The Group is also responsible for establishing the investment philosophy, methodology and portfolio construction strategies for Vanguard.

Vanguard Investments Europe sa is an investment company duly registered with CBFA and providing for certain investment services in several EU countries under the MiFID passport procedure.

Vanguard research >

Vanguard Center for Retirement Research
Vanguard Investment Counseling & Research
Vanguard Investment Strategy Group

E-mail > research@vanguard.com

For more information about Vanguard ETF Shares, visit www.vanguard.com, call 800-997-2798, or contact your broker to obtain a prospectus. Investment objectives, risks, charges, expenses, and other important information are contained in the prospectus; read and consider it carefully before investing.